Institute and Faculty of Actuaries

Reading List

Risk Management

2011-2012

Institute and Faculty of Actuaries

November 2012

List compiled by Scott McLachlan

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www.actuaries.org.uk/research-and-resources/pages/borrowing

CONTENTS

ACCIDENTS

Do administrators have the same priorities for risk reductions as the general public? Carlsson, Fredrik; Daruvala, Dinky; Jaldell, Henrik Springer, [RKN: 45856]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **45 (1)** : 79-95.

A stated preference survey was used to investigate the potential discrepancy between the priorities of public administrators and the general public regarding risk reductions. Both groups of respondents were asked to assume the role of a public policy-maker and choose between different public safety projects. We investigate differences in three areas: (i) large vs. small accidents, (ii) actual vs. subjective risk, and (iii) the trade-off between avoiding fatalities and serious injuries for different age groups and accidents. We find only minor differences between the responses of administrators and the general public, the most important of which is the difference in priorities between reducing the risk of many small or one large accident. In this area the most common response from the general public is that they prefer avoiding many small accidents rather than one large accident while among the administrators there is almost an equal split between the two options.
http://www.openathens.net

ACTUARIAL MANAGEMENT

Developments in the management of annuity business. Telford, P G; Browne, B A; Collinge, E J; Fulcher, P; Johnson, B E; Little, W; Lu, J L C; Nurse, J M; Smith, D W; Zhang, F (2011). 2011. [RKN: 72306]
Shelved at: Online only Shelved at: JOU/INS
BAJ (2011) **16(3)** : 471-551.

The focus of the paper is non-profit lifetime annuities in the UK. Annuity insurers have been faced with, or have initiated, an unprecedented amount of change during the last decade, and rapid change is still continuing. We draw out implications for the actuarial management of the business, arising from the evolution of: longevity risk assessment and management, investment strategy and operations, financial reporting, and enterprise risk management. We discuss Solvency II in some technical depth, analysing the proposed rules for technical provisions and solvency capital requirement.
Keywords: Annuities; Retirement Income; Longevity; Mortality Improvement; Reinsurance; Underwriting; Collateral; Investment; Asset-Liability Management; Financial Reporting; IFRS; Pillar I; Individual Capital Assessment; Enterprise Risk Management; Solvency II; Illiquidity Premium; Economic Capital
http://www.actuaries.org.uk/research-and-resources/documents/developments-management-annuity-business

ACTUARIAL PROFESSION

A common risk classification system for the actuarial profession : a discussion paper. Kelliher, P O J; Wimot, D; Klumpes, P J M (2011). - London: Institute and Faculty of Actuaries, 2011. - 38 pages. [RKN: 45486]
Shelved at: Strg box SI Ref 5 ifp 10/11 Shelved at: JOU

This draft paper sets out a classification system developed by the risk classification working party for the profession that can be used as a common reference point for discussing risk.
http://www.actuaries.org.uk/research-and-resources/documents/discussion-paper-common-risk-classification-system-actuarial-profes

ADVERSE SELECTION

The asymmetric information problem in Taiwan's cancer insurance market. Wang, Kili C; Peng, Jin-Lung; Sun, Yi-Yun; Chang, Yao-Chia - 18 pages. [RKN: 74790]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (2)** : 202-219.

This paper investigates the problem of asymmetric information in Taiwan's cancer insurance market. Through the survey data, we find evidence of adverse selection existing in this market. Furthermore, we collect additional information on the individual, and find that the individual's family cancer history contains additional valuable information. It can not only more accurately predict the probability of contracting cancer, as well as predict the willingness to purchase extended cancer insurance, but it can also help to mitigate the severity of adverse selection in the insurance market.

AGENCY THEORY

Is there market discipline in the European insurance industry? : An analysis of the German insurance market. Eling, Martin; Schmit, Joan T - 28 pages. [RKN: 70262]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (2)** : 180-207.

Economists often argue in favour of market discipline as a means to distribute resources effectively and efficiently. These same arguments likely influence decision-makers as they incorporate market discipline as the third pillar of Solvency II, the European

insurance regulatory scheme currently being implemented. Success for Solvency II, then, is dependent in part on the strength of influence found in market discipline. Our research indicates that the German insurance market demonstrates the existence of such discipline, although the actual effect appears smaller than previously found in the U.S. insurance market. Solvency II, therefore, seems to be following an appropriate path, although further research is needed to evaluate whether or not enhancements to market discipline within the European market are warranted.

ALGORITHMS

Fast remote but not extreme quantiles with multiple factors: applications to Solvency II and Enterprise Risk Management.
Chauvigny, Matthieu; Devineau, Laurent; Loisel, Stéphane; Maume-Deschamps, Véronique [RKN: 44809]
Shelved at: online only
European Actuarial Journal (2011) **1(1) July** : 131-157.

Available online via Athens
For operational purposes, in Enterprise Risk Management or in insurance for example, it may be important to estimate remote (but not extreme) quantiles of some function f of some random vector. The call to f may be time- and resource-consuming so that one aims at reducing as much as possible the number of calls to f. In this paper, we propose some ways to address this problem of general interest. We then numerically analyze the performance of the method on insurance and Enterprise Risk Management real-world case studies.
http://www.openathens.net

ALTERNATIVE RISK TRANSFER

Computing bounds on the expected payoff of Alternative Risk Transfer products. Villegas, Andrés M; Medaglia, Andrés L; Zuluaga, Luis F [RKN: 44786]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **51(2)** : 271-281.

The demand for integrated risk management solutions and the need for new sources of capital have led to the development of innovative risk management products that mix the characteristics of traditional insurance and financial products. Such products, usually referred as Alternative Risk Transfer (ART) products include: (re)insurance contracts that bundle several risks under a single policy; multi-trigger products where the payment of benefits depends upon the occurrence of several events; and insurance linked securities that place insurance risks in the capital market. Pricing of these complex products usually requires tailor-made complex valuation methods that combine derivative pricing and actuarial science techniques for each product, as well as strong distributional assumptions on the ART's underlying risk factors. We present here an alternative methodology to compute bounds on the price of ART products when there is limited information on the distribution of the underlying risk factors. In particular, we develop a general optimization-based method that computes upper and lower price bounds for different ART products using market data and possibly expert information about the underlying risk factors. These bounds are useful when the structure of the product is too complex to develop analytical or simulation valuation methods, or when the scarcity of data makes it difficult to make strong distributional assumptions on the risk factors. We illustrate our results by computing bounds on the price of a floating retention insurance contract, and a catastrophe equity put (CatEPut) option.
http://www.openathens.net/

AMBIGUITY

Ambiguity aversion, higher-order risk attitude and optimal effort. Huang, Rachel J [RKN: 45637]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **50 (3)** : 338-345.

In this paper, we examine whether a more ambiguity-averse individual will invest in more effort to shift her initial starting wealth distribution toward a better target distribution. We assume that the individual has ambiguous beliefs regarding two target (starting) distributions and that one distribution is preferred to the other. We find that an increase in ambiguity aversion will decrease (increase) the optimal effort when the cost of effort is non-monetary. When the cost of effort is monetary, the effect depends on whether the individual would make more effort when the target (starting) distribution is the preferred distribution than the target (starting) distributions, the inferior one. We further characterize the individual's higher-order risk preferences to examine the sufficient conditions.
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ANALYSIS

Data aggregation and counterparty identification : Considerations for systemic risk analysis. Krishna, Dilip [RKN: 45712]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 305-313.

Systemic risk analysis is now a topic of considerable interest the world over. It requires a combined analysis of the large counterparties in the global economy along with the interactions they have with each other. The availability of a comprehensive and quality dataset is important to systemic risk analysis. This paper discusses the kinds of data potentially required for systemic risk analysis and provides insights into the desired components of a systemic risk information solution.

ANNUITIES

Developments in the management of annuity business. Telford, P G; Browne, B A; Collinge, E J; Fulcher, P; Johnson, B E; Little, W; Lu, J L C; Nurse, J M; Smith, D W; Zhang, F (2011). 2011. [RKN: 72306]
Shelved at: Online only Shelved at: JOU/INS
BAJ (2011) **16(3)** : 471-551.

The focus of the paper is non-profit lifetime annuities in the UK. Annuity insurers have been faced with, or have initiated, an unprecedented amount of change during the last decade, and rapid change is still continuing. We draw out implications for the actuarial management of the business, arising from the evolution of: longevity risk assessment and management, investment strategy and operations, financial reporting, and enterprise risk management. We discuss Solvency II in some technical depth, analysing the proposed rules for technical provisions and solvency capital requirement.
Keywords: Annuities; Retirement Income; Longevity; Mortality Improvement; Reinsurance; Underwriting; Collateral; Investment; Asset-Liability Management; Financial Reporting; IFRS; Pillar I; Individual Capital Assessment; Enterprise Risk Management; Solvency II; Illiquidity Premium; Economic Capital
http://www.actuaries.org.uk/research-and-resources/documents/developments-management-annuity-business

Longevity risk management in Singapore's national pension system. Fong, Joelle H Y; Mitchell, Olivia S; Koh, Benedict S K - 22 pages. [RKN: 74879]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2011) **78 (4)** : 961–982.

Available online via Athens
Although annuities are a theoretically appealing way to manage longevity risk, in the real world relatively few consumers purchase them at retirement. To counteract the possibility of retirees outliving their assets, Singapore's Central Provident Fund, a national defined contribution pension scheme, has recently mandated annuitization of workers' retirement assets. More significantly, the government has entered the insurance market as a public-sector provider for such annuities. This article evaluates the money's worth of life annuities and discusses the impact of the government mandate and its role as an annuity provider on the insurance market.
http://www.openathens.net

Market discipline in the individual annuity market. Carson, James M; Doran, James S; Dumm, Randy E - 21 pages. [RKN: 74768]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (1)** : 27-47.

Theoretical expectations related to market discipline generally suggest a positive relationship between firm financial strength and price. We examine market discipline in the individual annuity market by measuring annuity contract yields during the accumulation phase and find that, among other results, firm financial strength is positively related to yield (i.e., negatively related to price). We argue that this apparent anomaly can be viewed as a form of market discipline itself, for at least four related reasons, the foremost reason being that in order to compete in the asset accumulation market, an insurer has an incentive to provide a track record of historically strong credited interest rates within the annuity. In addition, the credited interest rates within an annuity are only revealed ex post over time, thus diminishing consumer ability to impose traditional market discipline relating firm financial strength and price, and also enabling financially weaker insurers to impose higher ex post prices in the form of lower realized annuity yields.
http://www.openathens.net

ASSET ALLOCATION

Allocating assets in climates of extreme risk : A new paradigm for stress testing portfolios. Cuffe, Stacy L; Goldberg, Lisa R [RKN: 45655]
Shelved at: Per: FAJ
Financial Analysts Journal (2012) **68(2)** : 85-107.

The authors extended the standard paradigm for portfolio stress testing in two ways. First, they introduced a toolkit that enables investors to envision and administer extreme scenarios. The risk model is integral to the stress test. They demonstrated the substantial impact of using historical and hypothetical covariance matrices in scenario construction. Second, they used a scenario-constrained optimization to incorporate the output of a portfolio stress test directly into an investment decision.

ASSET-LIABILITY MANAGEMENT

Developments in the management of annuity business. Telford, P G; Browne, B A; Collinge, E J; Fulcher, P; Johnson, B E; Little, W; Lu, J L C; Nurse, J M; Smith, D W; Zhang, F - 81 pages. [RKN: 73860]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (3)** : 471-551.

The focus of the paper is non-profit lifetime annuities in the UK. Annuity insurers have been faced with, or have initiated, an unprecedented amount of change during the last decade, and rapid change is still continuing. We draw out implications for the actuarial management of the business, arising from the evolution of: longevity risk assessment and management, investment strategy and operations, financial reporting, and enterprise risk management. We discuss Solvency II in some technical depth, analysing the proposed rules for technical provisions and solvency capital requirement.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Developments in the management of annuity business : Abstract of the Edinburgh discussion. Telford, Peter - 24 pages. [RKN: 73861]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (3)** : 553-576.

This abstract relates to the following paper:

P.G. Telford, B.A. Browne, E.J. Collinge, P. Fulcher, B.E. Johnson, W. Little, J.L.C. Lu, J.M. Nurse, D.W. Smith & F. Zhang Developments in the Management of Annuity Business. British Actuarial Journal, 16 (3).
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Developments in the management of annuity business : Abstract of the London discussion. Telford, Peter - 23 pages. [RKN: 73862]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (3)** : 577-599.

This abstract relates to the following paper:

P.G. Telford, B.A. Browne, E.J. Collinge, P. Fulcher, B.E. Johnson, W. Little, J.L.C. Lu, J.M. Nurse, D.W. Smith & F. Zhang Developments in the Management of Annuity Business. British Actuarial Journal, 16 (3).
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Developments in the management of annuity business : Abstract of the London discussion-ADDENDUM. Telford, Peter - 2 pages. [RKN: 73960]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (1)** : 256-257.

Institute of Actuaries, 22 March 2010.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

ASSET LIABILITY MATCHING

Dynamic management actions. Clark, Dominic; Kent, Jeremy; Morgan, Ed (2012). - London: Staple Inn Actuarial Society, 2012. - 31 pages. [RKN: 43537]
Shelved at: Online only Shelved at: Online only

Slide presentation to Staple Inn Actuarial Society, 6 March 2012
Realistic modelling of dynamic management actions is critical to many areas of the financial management of a life insurance company today. In our overview of this topic we will:
- explain what is meant by dynamic management actions ("DMA") and what the main types of DMA are;
- introduce the areas in which DMA is important (e.g. Solvency II, MCEV, ALM etc);
- describe how DMA can be linked to real expected management behaviour (including considerations around concepts such as the Use Test);
- illustrate how improved modelling of DMA can, under some circumstances, materially influence calculated results;
- show how understanding DMA and its interactions with dynamic policyholder behaviour can improve a company's Enterprise Risk Management;
http://www.sias.org.uk/siaspapers/search/view paper?id=SIASPaperMar2012

ASSET VALUATION

Risk parity in US futures markets : Invited editorial. Scherer, Bernd Palgrave Macmillan, [RKN: 45745]
Shelved at: Per: J.Asset Man (Oxf)
Journal of Asset Management (2012) **13 (3)** : 155-161.

Risk parity allocates identical percentage contribution to risk to each individual asset. In the absence of established theoretical foundations, investors and product suppliers attribute the strong historical performance of risk parity portfolios to better diversification. This is an ill-founded belief. For US futures data I show that risk parity is not about diversification, but about higher return expectations for leveraged low-risk bonds. Although this is consistent with leverage aversion, it is incompatible with consumption-based asset pricing. In contrast to past work, I use futures data instead of diversified equity and bond indices. This allows concerns raised earlier about the availability of historic implementation costs or the historic price of leverage to be sidestepped.

ASYMMETRIC INFORMATION

Risk-sharing contracts with asymmetric information. Bourles, Renaud; Henriet, Dominique - 30 pages. [RKN: 74941]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (1)** : 27-56.

We examine how risk-sharing is impacted by asymmetric information on the probability distribution of wealth. We define the optimal incentive compatible agreements in a two-agent model with two levels of wealth. When there is complete information on the probability of the different outcomes, the resulting allocation satisfies the mutuality principle (which states that everyone's final wealth depends only upon the aggregate wealth of the economy). This is no longer true when agents have private information regarding their probability distribution of wealth. Asymmetry of information (i) makes ex-post equal sharing unsustainable between two low-risk agents, and (ii) induces exchanges when agents have the same realization of wealth.

ATTITUDES

Risk attitudes in a social context. Rohde, Ingrid M T; Rohde, Kirsten I M Springer, [RKN: 45529]
Journal of Risk and Uncertainty (2011) **43 (3)** : 205-225.

Many experiments have demonstrated that when evaluating payoffs, people take not only their own payoffs into account, but also the payoffs of others in their social environment. Most of this evidence is found in settings where payoffs are riskless. It is plausible that if people care about the payoffs of others, they do so not only in a riskless context, but also in a risky one. This suggests that an individual's decision making under risk depends on the risks others in his or her environment face. This paper is the first to test whether individuals' risk attitudes are affected by the risks others face. The results show that risk attitudes appear to be less affected by others' risks than expected, even though the same subjects do show concerns for inequality in a riskless setting. Interestingly, we find that people prefer risks to be independent across individuals in society rather than correlated.

AUTOMOBILE INSURANCE

The impact of rate regulation on claims : Evidence from Massachusetts automobile insurance. Derrig, Richard A; Tennyson, Sharon - 27 pages. [RKN: 74761]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (2)** : 173-199.

The article tests the hypothesis that insurance price subsidies created by rate regulation lead to higher insurance cost growth. The article makes use of data from the Massachusetts private passenger automobile insurance market, where cross-subsidies were explicitly built into the rate structure through rules that limit rate differentials and differences in rate increases across driver rating categories. Two approaches are taken to study the potential loss cost reaction to the Massachusetts cross-subsidies. The first approach compares Massachusetts with all other states while controlling for demographic, regulatory, and liability coverage levels. Loss cost levels that were about 29 percent above the expected level are found for Massachusetts during years 1978–1998, when premiums charged were those fixed by the state and included explicit subsidies for high-risk drivers. A second approach considers changing cost levels across Massachusetts by studying loss cost changes by town and relating those changes to subsidy providers and subsidy receivers. Subsidy data based on accident year data for 1993–2004 show a significant and positive (relative) growth in loss costs and an increasing proportion of high-risk drivers for towns that were subsidy receivers, in line with the theory of underlying incentives for adverse selection and moral hazard.

AVOIDABLE COSTS

Deterrence, expected cost, uncertainty and voting: Experimental evidence. DeAngelo, Gregory; Charness, Gary Springer, [RKN: 45594]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **44 (1)** : 73-100.

We conduct laboratory experiments to investigate the effects of deterrence mechanisms under controlled conditions. The effect of the expected cost of punishment of an individual's decision to engage in a proscribed activity and the effect of uncertainty on an individual's decision to commit a violation are very difficult to isolate in field data. We use a roadway speeding framing and find that (a) individuals respond considerably to increases in the expected cost of speeding, (b) uncertainty about the enforcement regime yields a significant reduction in violations committed, and (c) people are much more likely to speed when the punishment regime for which they voted is implemented. Our results have important implications for a behavioral theory of deterrence under uncertainty.

BANKING

Commercial real estate stress testing in community banks: The low stress kind. Jones, Brian W [RKN: 45849]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(4)** : 421-431.

Stress testing has been identified as the most effective method currently available for analysing concentrations in banking portfolios. For community banks, stress testing does not need to be overly complex or involved. In today's constantly evolving regulatory environment, community banks must understand the increasing risk inherent in their lending portfolio. Whether commercial real estate (CRE) stress testing is performed on an internal basis or by a vendor it remains an important tool in evaluating risk. The process itself brings important benefits in structuring of loan data and quantifying the portfolio's risks. This article will present a framework for understanding and performing CRE stress testing in community banks that is gradative in practice and, in some respects, goes beyond the standards adopted by regulators.

Understanding, modelling and managing longevity risk: key issues and main challenges. Barrieu, Pauline; Bensusan, Harry; El Karoui, Nicole; Hillairet Caroline; Loisel, Stéphane; Ravanelli, Claudia; Salhi, Yahia [RKN: 44885]
Shelved at: Per: SAJ Shelved at: SCA/ACT
Scandinavian Actuarial Journal (2012) **3** : 203-231.

Available via Athens access
This article investigates the latest developments in longevity-risk modelling, and explores the key risk management challenges for both the financial and insurance industries. The article discusses key definitions that are crucial for the enhancement of the way longevity risk is understood, providing a global view of the practical issues for longevity-linked insurance and pension products that have evolved concurrently with the steady increase in life expectancy since s. In addition, the article frames the recent and

forthcoming developments that are expected to action industry-wide changes as more effective regulation, designed to better assess and efficiently manage inherited risks, is adopted. Simultaneously, the evolution of longevity is intensifying the need for capital markets to be used to manage and transfer the risk through what are known as Insurance-Linked Securities (ILS). Thus, the article will examine the emerging scenarios, and will finally highlight some important potential developments for longevity-risk management from a financial perspective with reference to the most relevant modelling and pricing practices in the banking industry.
http://www.openathens.net/

BANKRUPTCY

The optimal dividend barrier in the Gamma–Omega model. Albrecher, Hansjörg; Gerber, Hans U; Shiu, Elias S W [RKN: 44805]
Shelved at: online only
European Actuarial Journal (2011) **1(1) July** : 43-55.
Available online via Athens
In the traditional actuarial risk model, if the surplus is negative, the company is ruined and has to go out of business. In this paper we distinguish between ruin (negative surplus) and bankruptcy (going out of business), where the probability of bankruptcy is a function of the level of negative surplus. The idea for this notion of bankruptcy comes from the observation that in some industries, companies can continue doing business even though they are technically ruined. Assuming that dividends can only be paid with a certain probability at each point of time, we derive closed-form formulas for the expected discounted dividends until bankruptcy under a barrier strategy. Subsequently, the optimal barrier is determined, and several explicit identities for the optimal value are found. The surplus process of the company is modeled by a Wiener process (Brownian motion).
http://www.openathens.net

Surety bonds with fair and unfair pricing. Wambach, Achim; Engel, Andreas R. [RKN: 45274]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (1)** : 36-50.
Surety bonds are instruments used in public and private procurement to avoid the problem of contractor bankruptcy. A surety company issuing such a bond guarantees to either finish the project itself or pay the bond to the procurement agency in case of contractor's bankruptcy. This situation is analysed under the assumption that the bond is either priced fairly, or a risk loading that is proportional to the money at risk is imposed. If the surety is priced fairly, full insurance (or even overinsurance) is optimal. If the surety is priced unfairly, more solvent contractors are more likely to win, thus the problem of abnormally low tenders is alleviated.

Who benefits from building insurance groups? A welfare analysis of optimal group capital management. Schlütter, Sebastian; Gründl, Helmut [RKN: 43638]
Shelved at: Per: Geneva
Geneva Papers on Risk and Insurance (2012) **37(3)** : 571-593.
Available online via Athens
This paper compares the shareholder-value-maximising capital structure and pricing policy of insurance groups against that of stand-alone insurers. Groups can utilise intra-group risk diversification by means of capital and risk transfer instruments. We show that using these instruments enables the group to offer insurance with less default risk and at lower premiums than is optimal for stand-alone insurers. We also take into account that shareholders of groups could find it more difficult to prevent inefficient overinvestment or cross-subsidisation, which we model by higher dead-weight costs of carrying capital. The trade-off between risk diversification on the one hand and higher dead-weight costs on the other can result in group-building being beneficial for shareholders but detrimental for policyholders.
http://www.openathens.net/

BANKS AND BANKING

Data quality in banking : Regulatory requirements and best practices. Bonollo, Michele; Neri, Massimiliano [RKN: 45693]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 146-161.
Since the beginning of the financial crisis in 2007, the quality of risk data has become a subject of concern for risk managers in banks and other financial institutions. In order to tackle this subject a four-step analysis is proposed. First, the issues associated with risk data quality in the banking sector are examined, the main one being the silo organisation of risk data. Secondly, the paper reviews the existing data quality regulations in the financial sector, summarising briefly the requirements in Basel II and in Solvency II (the first regulation that provided formal requirements for data quality). Thirdly, a best practice proposal is made for banks in a centralised approach to risk data, involving the integration of risk and finance data. Finally, the centralised data approach is combined with a sensitivity technique in order to obtain more effective data quality strategies and indicators.
http://www.openathens.net

The governance of strategic risks in systemically important banks. McConnell, Patrick [RKN: 45691]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 128-142.
Among the many market weaknesses highlighted by the global financial crisis, the widespread failures of corporate governance and risk management were identified by official inquiries as being critical. As a result, banking regulatory bodies have responded, proposing long overdue principles of good corporate governance, in particular tightening up on the roles and responsibilities of boards of directors. Strategic risk is arguably, because of the immense uncertainty in the global economy, the greatest risk facing any firm, most especially systemically important banks (SIB); however, strategic risk management, or the management of the risks to a firm's long-term corporate strategy, is not a well-developed discipline. The lack of maturity in the discipline stems, in part, from a fundamental conflict of interest in that the board and management 'own' a firm's strategy but they are at the same time also responsible for implementing the strategy and managing the strategic risks. There is no independent review of the strategic risks

taken by many firms, which constitutes a serious deficiency in corporate governance. This paper considers the governance of strategic risks, using Lehman Brothers as a case study, identifying areas of deficiency of governance of strategic risk in practice. The paper also proposes some potential solutions to help address such governance problems.
http://www.openathens.net

BASEL III

Preparing for Basel III. Gunnee, Ben Staple Inn Actuarial Society, - 1 pages. [RKN: 70725]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **August** : 8.
Ben Gunnee says the new rules could push up costs and hit the operations of European pension funds using over-the-counter derivatives
http://www.theactuary.com/

BAYESIAN ANALYSIS

Calculation of Bayes premium for conditional elliptical risks. Kume, Alfred; Hashorva, Enkelejd [RKN: 43681]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **51(3)** : 632-635.
In this paper the authors discuss the calculation of the Bayes premium for conditionally elliptical multivariate risks. In our framework the prior distribution is allowed to be very general requiring only that its probability density function satisfies some smoothness conditions. Based on the previous results of Landsman and Nešlehová (2008) [Z. Landsman, J. Nešlehová (2008), Stein's lemma for elliptical random vectors, Journal of Multivariate Analysis, 99, 912-927] and Hamada and Valdez (2008) [M. Hamada, E.A. Valdez (2008), CAPM and option pricing with elliptically contoured distributions, Journal of Risk & Insurance, 75, 387-409], the authors show in this paper that for conditionally multivariate elliptical risks the calculation of the Bayes premium is closely related to the Brown identity and the celebrated Stein's lemma.
http://www.openathens.net/

BEHAVIOUR, CONSUMER

Dynamic management actions. Clark, Dominic; Kent, Jeremy; Morgan, Ed (2012). - London: Staple Inn Actuarial Society, 2012. - 31 pages. [RKN: 43537]
Shelved at: Online only Shelved at: Online only
Slide presentation to Staple Inn Actuarial Society, 6 March 2012
Realistic modelling of dynamic management actions is critical to many areas of the financial management of a life insurance company today. In our overview of this topic we will:
- explain what is meant by dynamic management actions ("DMA") and what the main types of DMA are;
- introduce the areas in which DMA is important (e.g. Solvency II, MCEV, ALM etc);
- describe how DMA can be linked to real expected management behaviour (including considerations around concepts such as the Use Test);
- illustrate how improved modelling of DMA can, under some circumstances, materially influence calculated results;
- show how understanding DMA and its interactions with dynamic policyholder behaviour can improve a company's Enterprise Risk Management;
http://www.sias.org.uk/siaspapers/search/view paper?id=SIASPaperMar2012

BEHAVIOURAL SCIENCES

Ambiguity aversion and familiarity bias : Evidence from behavioral and gene association studies. Chew, Soo Hong; Ebstein, Richard P; Zhong, Songfa Springer, [RKN: 45591]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **44 (1)** : 1-18.
It is increasingly recognized that decision making under uncertainty depends not only on probabilities, but also on psychological factors such as ambiguity and familiarity. Using 325 Beijing subjects, we conduct a neurogenetic study of ambiguity aversion and familiarity bias in an incentivized laboratory setting. For ambiguity aversion, 49.4% of the subjects choose to bet on the 50–50 deck despite the unknown deck paying 20% more. For familiarity bias, 39.6% choose the bet on Beijing's temperature rather than the corresponding bet with Tokyo even though the latter pays 20% more. We genotype subjects for anxiety-related candidate genes and find a serotonin transporter polymorphism being associated with familiarity bias, but not ambiguity aversion, while the dopamine D5 receptor gene and estrogen receptor beta gene are associated with ambiguity aversion only among female subjects. Our findings contribute to understanding of decision making under uncertainty beyond revealed preference.

BENEFITS

Reference-dependent valuations of risk: Why willingness-to-accept exceeds willingness-to-pay. Viscusi, W Kip; Huber, Joel Springer, [RKN: 45592]

Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **44 (1)** : 19-44.

The gap between willingness-to-pay (WTP) and willingness-to-accept (WTA) benefit values typifies situations in which reference points—and direction of movement from reference points—are consequential. Why WTA-WTP discrepancies arise is not well understood. We generalize models of reference dependence to identify separate reference dependence effects for increases and decreases in environmental health risk probabilities, for increases and decreases in costs, and reference dependence effects embodying the interaction of two changes. We estimate separate reference dependence effects for the four possible cost and health risk change combinations using data from our choice-based experiment for a nationally representative sample of 4,745 households. The WTA-WTP gap is due largely to the reference dependence effects related to costs. Standard models of reference dependence are not consistent with the results, as there is an interactive effect. Estimated income effects are under a penny and thus cannot account for higher values of WTA relative to WTP.

BIOLOGICAL SCIENCES

To boldly and safely go : Biostatistics in space. Ploutz-Snyder, Robert [RKN: 45584]
Shelved at: Per
Significance (2012) **9(1)** : 4-7.

How can humans live and work in space? Ask one of NASA's biostatisticians. With the International Space Station, the prospect of a return to the moon and – who knows?– perhaps a manned voyage to Mars, ever-longer space missions must be planned for. Robert Ploutz-Snyder describes some of NASA's work to reduce the risk to astronauts.
http://www.openathens.net/

BONDS

Surety bonds with fair and unfair pricing. Wambach, Achim; Engel, Andreas R. [RKN: 45274]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (1)** : 36-50.

Surety bonds are instruments used in public and private procurement to avoid the problem of contractor bankruptcy. A surety company issuing such a bond guarantees to either finish the project itself or pay the bond to the procurement agency in case of contractor's bankruptcy. This situation is analysed under the assumption that the bond is either priced fairly, or a risk loading that is proportional to the money at risk is imposed. If the surety is priced fairly, full insurance (or even overinsurance) is optimal. If the surety is priced unfairly, more solvent contractors are more likely to win, thus the problem of abnormally low tenders is alleviated.

BONUS SYSTEMS

Do U.S. insurance firms offer the "wrong" incentives to their executives?. Milidonis, Andreas; Stathopoulos, Konstantinos - 30 pages. [RKN: 74868]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2011) **78 (3)** : 643–672.

Available online via Athens
We examine the relation between executive compensation and market-implied default risk for listed insurance firms from 1992 to 2007. Shareholders are expected to encourage managerial risk sharing through equity-based incentive compensation. We find that long-term incentives and other share-based plans do not affect the default risk faced by firms. However, the extensive use of stock options leads to higher future default risk for insurance firms. We argue that this is because option-based incentives induce managerial risk-taking behavior, which seeks to maximize managerial payoff through equity volatility. This could be detrimental to the interests of shareholders, especially during a financial crisis.
http://www.openathens.net

BROWNIAN MOTION

The optimal dividend barrier in the Gamma–Omega model. Albrecher, Hansjörg; Gerber, Hans U; Shiu, Elias S W [RKN: 44805]
Shelved at: online only
European Actuarial Journal (2011) **1(1) July** : 43-55.

Available online via Athens
In the traditional actuarial risk model, if the surplus is negative, the company is ruined and has to go out of business. In this paper we distinguish between ruin (negative surplus) and bankruptcy (going out of business), where the probability of bankruptcy is a function of the level of negative surplus. The idea for this notion of bankruptcy comes from the observation that in some industries, companies can continue doing business even though they are technically ruined. Assuming that dividends can only be paid with a certain probability at each point of time, we derive closed-form formulas for the expected discounted dividends until bankruptcy under a barrier strategy. Subsequently, the optimal barrier is determined, and several explicit identities for the optimal value are found. The surplus process of the company is modeled by a Wiener process (Brownian motion).
http://www.openathens.net

Threshold dividend strategies for a Markov-additive risk model. Breuer, Lothar [RKN: 44835]
Shelved at: online only
European Actuarial Journal (2011) **1(2) November** : 237-258.

Available online via Athens -- Published online, 22 December 2011
We consider the following risk reserve model. The premium income is a level dependent Markov-modulated Brownian motion. Claim sizes are iid with a phase-type distribution. The claim arrival process is a Markov-modulated Poisson process. For this model the payment of dividends under a threshold dividend strategy and the time until ruin will be analysed.
http://www.openathens.net

BUSINESS ENTERPRISE

Market discipline in the individual annuity market. Carson, James M; Doran, James S; Dumm, Randy E - 21 pages. [RKN: 74768]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (1)** : 27-47.
Theoretical expectations related to market discipline generally suggest a positive relationship between firm financial strength and price. We examine market discipline in the individual annuity market by measuring annuity contract yields during the accumulation phase and find that, among other results, firm financial strength is positively related to yield (i.e., negatively related to price). We argue that this apparent anomaly can be viewed as a form of market discipline itself, for at least four related reasons, the foremost reason being that in order to compete in the asset accumulation market, an insurer has an incentive to provide a track record of historically strong credited interest rates within the annuity. In addition, the credited interest rates within an annuity are only revealed ex post over time, thus diminishing consumer ability to impose traditional market discipline relating firm financial strength and price, and also enabling financially weaker insurers to impose higher ex post prices in the form of lower realized annuity yields.
http://www.openathens.net

CAPITAL ADEQUACY

The Basel III and beyond. Cannata, Francesco; Quagliariello, Mario (2011). Risk Books, 2011. - 510 pages. [RKN: 74705]
Shelved at: 519.287
Around the world, central bankers, regulators and governments have responded to the financial crisis with new regulation and legislation. The cornerstone of this global initiative to contain risk is Basel III – sweeping new regulatory standards for banks on capital adequacy and liquidity.

These new standards will define markets and their practices for decades to come. Already, they are reshaping institutions, business models and balance sheets.

Understanding Basel III and the thinking behind it is essential for market participants and for those charged with implementing the standards. In Basel III and Beyond, the first book-length treatment of Basel III, editors Mario Quagliariello of the European Banking Authority and Francesco Cannata of the Bank of Italy have assembled contributors from regulators and central banks involved in preparing the standards including a foreword from Mario Draghi, President of the European Central Bank.

Key chapters describe and analyse the new elements of Basel III, as well as detailing important revisions to the 2004 accord. Written by the regulators themselves, Basel III and Beyond is the essential guide to the new global banking standards.

CAPITAL ALLOCATION

Capital allocation in the property-liability insurance industry. D'Arcy, Stephen P [RKN: 43604]
Shelved at: Per: Variance
Variance (2011) **5(2)** : 141-157.
Capital allocation is a theoretical exercise, since all of a firm's capital could be depleted to cover a significant loss arising from any one segment. However, firms do need to allocate capital for pricing, risk management, and performance evaluation. One versatile allocation method, the Ruhm-Mango-Kreps algorithm, has several key advantages: additivity, simplicity, and flexibility. However, the approach is so flexible that it can be used to produce many different values instead of a single answer. In this paper, the cost of capital in financial markets is incorporated into the Ruhm-Mango-Kreps algorithm to yield one allocation that reflects the true cost of capital an insurer would face.
http://www.variancejournal.org/issues

Enterprise Risk Management through strategic allocation of capital. Ai, Jing; Brockett, Patrick L; Cooper, William W; Golden, Linda L - 28 pages. [RKN: 73846]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2012) **79 (1)** : 29-56.
Available online via Athens
This article presents a conceptual framework for operationalizing strategic enterprise risk management (ERM) in a general firm. We employ a risk-constrained optimization approach to study the capital allocation decisions under ERM. Given the decision maker's risk appetite, the problem of holistically managing enterprise-wide hazard, financial, operational, and real project risks is treated by maximizing the expected total return on capital, while trading off risks simultaneously in Value-at-Risk type of constraints. This approach explicitly quantifies the concepts of risk appetite and risk prioritization in light of the firm's default and financial distress avoidance reflected in its target credit rating. Our framework also allows the firm to consider a multiperiod planning horizon so that changing business environments can be accounted for. We illustrate the implementation of the framework through a numerical example. As an initial conceptual advancement, our formulation is capable of facilitating more general ERM modeling within a consistent strategic framework, where idiosyncratic variations of firms and different modeling assumptions can be accommodated. Managerial implications are also discussed.
http://www.openathens.net

CAPITAL CHOICE

Raising capital in an insurance oligopoly market. Hardelin, Julien; Lemoyne de Forges, Sabine - 26 pages. [RKN: 74943]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (1)** : 83-108.

We consider an oligopoly market where firms offer insurance coverage against a risk characterised by aggregate uncertainty. Firms behave as if they were risk averse for a standard reason of costly external finance. The model consists in a two-stage game where firms choose their internal capital level at stage one and compete on price at stage two. We characterise the subgame perfect Nash equilibria of this game and focus attention on the strategic impact of insurers capital choice. We discuss the model with regard to the insurance industry specificities and regulation.

CAPITAL MANAGEMENT

Excess based allocation of risk capital. van Gulick, Gerwald; de Waegenaere, Anja; Norde, Henk [RKN: 44987]
Shelved at: Per: IME (Oxf)
Insurance: Mathematics & Economics (2012) **50 (1)** : 26-42.

Available online via Athens
In this paper we propose a new rule to allocate risk capital to portfolios or divisions within a firm. Specifically, we determine the capital allocation that minimizes the excesses of sets of portfolios in a lexicographical sense. The excess of a set of portfolios is defined as the expected loss of that set of portfolios in excess of the amount of risk capital allocated to them. The underlying idea is that large excesses are undesirable, and therefore the goal is to determine the allocation for which the largest excess is as small as possible. We show that this allocation rule yields a unique allocation, and that it satisfies some desirable properties. We also show that the allocation can be determined by solving a series of linear programming problems.
http://www.openathens.net/

Solvency II: A change of view. Saini, Harjit; Haslip, Gareth Staple Inn Actuarial Society, [RKN: 73707]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **November** : 33-35.

Harjit Saini and Gareth Haslip describe how capital management at Lloyd's is changing in response to the requirements of Solvency II
http://www.theactuary.com/

CATASTROPHE

Alert to black swan-song?. Ellis, Philip; McMurrough, Eamonn Staple Inn Actuarial Society, - 1 pages. [RKN: 70673]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **September** : 8.

Philip Ellis and Eamonn McMurrough say it is time for the industry to wake up to the frequency of catastrophe risk
http://www.theactuary.com/

Extreme measures. Cox, Andy; Reid, Scott Staple Inn Actuarial Society, [RKN: 45475]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **October** : 28-30.

Andy Cox and Scott Reid consider the intricacies of modelling terrorism risk.
http://www.theactuary.com/

Failing to learn from experience about catastrophes : The case of hurricane preparedness. Meyer, Robert J Springer, [RKN: 45854]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **45 (1)** : 25-50.

This paper explores the question of whether there are inherent limits to our ability to learn from experience about the value of protection against low-probability, high-consequence, events. Findings are reported from two controlled experiments in which participants have a monetary incentive to learn from experience making investments to protect against hurricane risks. A central finding is that investments display a short-term forgetting effect consistent with the use of reinforcement learning rules, where a significant driver of investments in a given period is whether storm losses were incurred in the precious period. Given the relative rarity of such losses, this reinforcement process produces a mean investment level below that which would be optimal for most storm threats. Investments are also found to be insensitive to the censoring effect of protection itself, implying that the size of experienced losses—rather than losses that are avoided—is the primary driver of investment decisions.
http://www.openathens.net

Single-year and multi-year insurance policies in a competitive market. Kleindorfer, Paul R; Kunreuther, Howard; Ou-Yang, Chieh Springer, [RKN: 45855]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **45 (1)** : 51-78.

This paper examines the demand and supply of annual and multi-year insurance contracts with respect to protection against a catastrophic risk in a competitive market. Insurers who offer annual policies can cancel policies at the end of each year and change the premium in the following year. Multi-year insurance has a fixed annual price for each year and no cancellations are

permitted at the end of any given year. Homeowners are identical with respect to their exposure to the hazard. Each homeowner determines whether or not to purchase an annual or multi-year contract so as to maximize her expected utility. The competitive equilibrium consists of a set of prices where homeowners who are not very risk averse decide to be uninsured. Other individuals demand either single-year or multi-year policies depending on their degree of risk aversion and the premiums charged by insurers for each type of policy.
http://www.openathens.net

CATASTROPHE INSURANCE

An analysis of the demand for earthquake insurance. Athavale, Manoj; Avila, Stephen M - 14 pages. [RKN: 74763]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (2)** : 233-246.
This research examines the decision to purchase earthquake insurance by analyzing data on earthquake insurance price and penetration in the New Madrid fault zone in Missouri. Earthquake risk is of concern to consumers, the insurance industry, industry regulators, and government agencies because of the potentially catastrophic nature of losses resulting from a major earthquake. Despite the significance of the earthquake peril, the recent literature does not contain estimates of the price and income elasticity of the demand for earthquake insurance. Our analysis indicates that homeowners acquire earthquake insurance because of risk considerations, at higher levels of risk the demand for earthquake insurance is higher, and the price of earthquake coverage does not provide incremental information in explaining the demand for earthquake coverage.
http://www.openathens.net

The role of RBC, hurricane exposure, bond portfolio duration, and macroeconomic and industry-wide factors in property–liability insolvency prediction. Cheng, Jiang; Weiss, Mary A - 28 pages. [RKN: 70414]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2012) **79 (3)** : 723-750.
Available online via Athens
This research analyzes the performance of the risk-based capital (RBC) ratio and other variables in predicting insolvencies in the property–liability insurance industry during the period 1994–2008. The results indicate that the accuracy of the RBC ratio in predicting insolvencies is inconsistent over time and that some previously tested financial ratios that are part of the FAST system do not always reliably predict insurer insolvency. In addition, the insolvency propensity is found to be significantly related to an insurer's hurricane prone area exposure, changes in interest rates, the industry-wide combined ratio, and the industry-wide Herfindahl index of premiums written.
http://www.openathens.net

The use of postloss financing of catastrophic risk. Cole, Cassandra R; Macpherson, David A; Maroney, Patrick F; McCullough, Kathleen A; Newman, James W (Jay); Nyce, Charles - 34 pages. [RKN: 74765]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (2)** : 265-298.
Catastrophic risk financing is a critical issue for many states. At the epicenter of the debate is the role of the state government in helping homeowners finance catastrophic storm risk. In general, states have used a variety of pre- and postloss strategies, including rate regulation, residual markets, guaranty funds, and postloss assessment structures. However, several states, including Florida, Louisiana, Mississippi, and Texas have used strategies that involve potentially large postloss funding of hurricane risk. In some cases, the structure of the postloss financing mechanism is likely to create significant assessments and subsidies. This article examines the role of state government in catastrophe financing, focusing primarily on postloss financing methods. Specifically, the article provides a discussion of the advantages and disadvantages of the postloss catastrophe financing as well as the political forces that motivate the use of this approach. Further, given the potential magnitude of postloss assessments and related subsidies, we use the Florida homeowners market to illustrate the implications of the state's decisions. This allows for a concrete discussion of the impact and viability of postloss financing mechanisms.
http://www.openathens.net

CHOICE

Social comparison and risky choices. Linde, Jona; Sonnemans, Joep Springer, [RKN: 45593]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **44 (1)** : 45-72.
Theories (and experiments) on decision making under risk typically ignore (and exclude) a social context. We explore whether this omission is detrimental. To do so we experimentally investigate the simplest possible situation with both social comparison and risk: participants choose between two lotteries while a referent faces a fixed payoff. Participants are more risk averse when they can earn at most as much as their referent (loss situation) than when they are ensured they will earn at least as much as their referent (gain situation). Prospect theory with a social reference point would predict the exact opposite behavior. These results show that straightforward extensions of existing theories to allow for social comparison do not provide accurate predictions.

CLAIM FREQUENCY

The joint distribution of the time to ruin and the number of claims until ruin in the classical risk model. Dickson, David C M [RKN: 45636]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **50 (3)** : 334-337.
We use probabilistic arguments to derive an expression for the joint density of the time to ruin and the number of claims until ruin

in the classical risk model. From this we obtain a general expression for the probability function of the number of claims until ruin. We also consider the moments of the number of claims until ruin and illustrate our results in the case of exponentially distributed individual claims. Finally, we briefly discuss joint distributions involving the surplus prior to ruin and deficit at ruin.
http://www.openathens.net/

CLAIMS RESERVES

On the importance of dispersion modeling for claims reserving: an application with the Tweedie distribution. Boucher, Jean-Philippe; Davidov, Danail [RKN: 43605]
Shelved at: Per: Variance
Variance (2011) **5(2)** : 158-172.

We consider Tweedie's compound Poisson model in a claims reserving triangle in a generalized linear model framework. We show that there exist practical situations where the variance, as well as the mean of the costs, needs to be modeled. We optimize the likelihood function through either direct optimization or through double generalized linear models (DGLM). We also enhance the estimation of the variance parameters within the DGLM by using the restricted maximum likelihood (REML). Having a flexible variance structure allows the model to replicate the underlying risk more appropriately and shrinks the gap between the predicted variances of different models.
http://www.variancejournal.org/issues

CLIMATE CHANGE

Alert to black swan-song?. Ellis, Philip; McMurrough, Eamonn Staple Inn Actuarial Society, - 1 pages. [RKN: 70673]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **September** : 8.

Philip Ellis and Eamonn McMurrough say it is time for the industry to wake up to the frequency of catastrophe risk
http://www.theactuary.com/

On the underestimation of the precautionary effect in discounting. Gollier, Christian - 17 pages. [RKN: 74785]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (2)** : 95-111.

Using the extended Ramsey rule, the socially efficient rate is the difference between a wealth effect and a precautionary effect of economic growth. This second effect is increasing in the degree of uncertainty affecting the future. In the literature, it is usually calibrated by estimating the historical volatility of the growth of GDP in a specific country. In this paper, I show that using cross-section data tends to magnify uncertainty, and to reduce the discount rate. Using a data set covering 190 countries over the period 1969–2010, I justify using a much smaller discount rate of approximately 0.7 per cent per year for time horizons exceeding 40 years.

A weather eye on risk strategy. Scott, Philip Staple Inn Actuarial Society, - 1 pages. [RKN: 70683]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **September** : 7.

Climate change's influence on actuarial disciplines can help us to understand risk, suggests Philip Scott
http://www.theactuary.com/

COMMISSION

An analysis of contingent commission use by property-liability insurers. Colquitt, L Lee; McCullough, Kathleen A; Sommer, David W - 15 pages. [RKN: 74760]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (2)** : 157-171.

The payment of contingent commissions in the property–liability insurance industry has long been commonplace, but recent events have made the practice highly controversial. Even prior to these events, wide variation existed among insurers in their use of contingent commissions. In this article, we examine the determinants of whether or not an insurer chooses to pay contingent commissions at all, as well as the determinants of the extent of their use for those insurers that pay them. We find a number of variables that have a significant relation to the use and extent of use of contingent commissions.
http://www.openathens.net

Optimal brokerage commissions for fair insurance: a first order approach. Hau, Arthur - 13 pages. [RKN: 74789]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (2)** : 189-201.

This paper studies a principal-agent insurance brokerage problem with a risk-averse principal (an insured) and a risk-neutral agent (a broker). The concept of "mean-preserving, spread-reducing" (MPSR) effort is introduced to model the broker's activities. Using the first-order approach, it is shown that under some common conditions, the insured may "concavify" the reward function to induce the risk-neutral agent to exert MPSR brokering effort. These conditions, together with an additional condition, guarantee the validity of the first-order approach even when the monotone likelihood ratio condition (used exclusively to justify the first-order approach) is violated.

COMMUNICATION

Calculating and communicating tail association and the risk of extreme loss: a discussion paper. Sweeting, Paul; Fotiou, Fotis (2011). - London: Institute and Faculty of Actuaries, 2011. - 66 pages. [RKN: 45483]
Shelved at: EEQ pam (Lon) Shelved at: JOU

This paper examines two aspects of extreme events; their calculation and their communication. In relation to calculation, two types of extreme event are considered: the extent to which extreme events in two or more variables occur together, and the combinations of losses from a series of risks that together result in total losses exceeding a particular level. The communication of extreme events is discussed not only in terms of numbers but explores graphical methods that can be used to aggregate information on a range of risk combinations. This involves communicating not just the level of risk but also the importance of the risk considered.
http://www.actuaries.org.uk/sites/all/files/event brochures/110724erm report clean.pdf

CONSUMER BEHAVIOUR

On the valuation of investment guarantees in unit-linked life insurance: a customer perspective. Gatzert, Nadine; Huber, Carin; Schmeiser, Hato Palgrave Macmillan, [RKN: 39974]
Shelved at: Per: Geneva (Oxf)
Geneva Papers on Risk and Insurance (2011) **36(1)** : 3-29.

Available online via Athens
Interest rate guarantees in unit-linked life insurance products ensure that at contract maturity, at least a minimum guaranteed amount is paid, even if the mutual fund falls below the guaranteed level. Strongly depending on the riskiness of the underlying mutual fund, these guarantees can be of substantial value. However, while insurer pricing is based on the replication of cash flows, customers are more likely to base their decisions on individual preferences. The aim of this paper is to contrast reservation prices for guarantees in unit-linked life insurance policies based on customers' subjective willingness to pay with a financial pricing approach, an investigation that has not been undertaken to date. To do so, we use an online questionnaire survey and calculate reservation prices using option pricing theory. Our findings reveal that even though the majority of the participants in the online questionnaire are employed in the field of insurance, subjective prices are difficult to derive and are significantly lower on average than the prices obtained using a financial pricing model. However, a considerable portion of participants is still willing to pay a substantially higher price.
http://www.openathens.net

COPULAS

Calculating and communicating tail association and the risk of extreme loss: a discussion paper. Sweeting, Paul; Fotiou, Fotis (2011). - London: Institute and Faculty of Actuaries, 2011. - 66 pages. [RKN: 45483]
Shelved at: EEQ pam (Lon) Shelved at: JOU

This paper examines two aspects of extreme events; their calculation and their communication. In relation to calculation, two types of extreme event are considered: the extent to which extreme events in two or more variables occur together, and the combinations of losses from a series of risks that together result in total losses exceeding a particular level. The communication of extreme events is discussed not only in terms of numbers but explores graphical methods that can be used to aggregate information on a range of risk combinations. This involves communicating not just the level of risk but also the importance of the risk considered.
http://www.actuaries.org.uk/sites/all/files/event brochures/110724erm report clean.pdf

Comparison of market models for measuring and hedging synthetic CDO tranche spread risks. Jie Ding, Jack; Sherris, Michael [RKN: 44821]
Shelved at: online only
European Actuarial Journal (2011) **1(1) Supplement 2** : 261-281.

Available online via Athens -- Selected paper presented during the 19th International Actuarial Association AFIR Colloquium in Munich, Germany, 2009
The recent credit crisis has focused attention on the models used for pricing and assessing risk of structured credit transactions including synthetic CDOs [collateralised debt obligations]. The market standard one factor Gaussian copula model has been criticized for its unrealistic constant correlation assumption. In this paper, a range of market models that allow a positive relationship between default correlation and default probability, including the correlation mapping methods and the implied copula models, are compared with the Gaussian copula model, based on their relative performance in hedging credit spread risk and pricing bespoke CDOs. The models assessed are calibrated to the traded CDO tranche spreads prior to the credit crisis and then compared based on the mean absolute pricing errors over a time period including the credit crisis. The results of the analysis highlight a number of issues including the accuracy of "mark-to-model" valuations of bespoke CDOs, the value of including past information in pricing and hedging, and the relative performance of the base correlation Gaussian copula model compared to the other market models in this study.
http://www.openathens.net

CORPORATE INSURANCE

Corporate management of highly dynamic risks: : Evidence from the demand for terrorism insurance in Germany. Thomann, Christian; Pascalau, Razvan; von der Schulenburg, J Mattias Graf - 26 pages. [RKN: 74942]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (1)** : 57-82.

This paper investigates a corporation's risk management response to highly dynamic risks. Using a unique data set on the German terrorist insurance market, the paper tests whether corporate risk managers have a clear understanding of the probability distribution of highly dynamic risks or if risk managers learn from severe losses and base their decisions upon day-to-day experience. The paper further investigates whether risk managers become more confident in their risk management decisions over time. For this purpose, we apply Viscusi's prospective reference theory to a corporate context. We find that firms learn from single events when making their risk management decisions, and that risk managers become more confident with their risk management decisions over time.

CORPORATE STRATEGY

Corporate value of enterprise risk management: the next step in business management. Segal, Sim (2011). - Hoboken, NJ: Wiley, 2011. - xiii, 404 pages. [RKN: 74706]
Shelved at: UHG/AA (Lon) Shelved at: 658.15

CREDIT

Counterparty credit risk : News, views and open issues : Comment. Bocker, Klaus; Stamm, Roland [RKN: 45707]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 227-233.

Counterparty credit risk (CCR) is a central topic for any modern financial institution's risk management. In this paper we present a personal selection of issues related to CCR measurement which we consider still unresolved or at least controversial. These issues include credit value adjustment, exposure simulation, valuation in general and model risk.

CVA the wrong way. Rosen, Dan; Saunders, David [RKN: 45709]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 252-272.

The credit valuation adjustment (CVA) has become an integral part of accounting rules and Basel III. The case where the counterparty exposure increases when its credit quality deteriorates is commonly referred as wrong-way risk (WWR). WWR can have a significant impact on CVA, economic capital and collateralised exposures with margins. A robust method is presented to calculate CVA with WWR that is intuitive, easy to implement and computationally efficient. The methodology effectively leverages existing ‘pre-computed’ exposures into a joint market and credit risk portfolio model, which allows the performance of multiple CVA calculations for sensitivities, stress testing and value-at-risk (VaR). It further provides a model risk framework for assessing both general and idiosyncratic WWR, and stress testing both the factors driving correlations as well as the strength of the correlations. The approach is demonstrated through a practical example. While the impact of WWR at the counterparty level can be very significant, the effect of general WWR at the portfolio level may not be as strong for well balanced, large portfolios of derivatives. Furthermore, the standardised charge in Basel III can be significant even when compared against very conservative internal models with WWR.

On counterparty risk : Lead comment. Haldane, Andrew G [RKN: 45706]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 224-226.

The financial crisis demonstrated the inadequacy of the management of counterparty credit risk and the vulnerability of financial structures to counterparty concerns. Three possible solutions are proposed to mitigate such risks in the future: improved network visibility to understand credit chains; the clearing of transactions centrally to improve transparency and reduce intra-financial system debt; and building protection against counterparty default through higher capital and margining requirements.

CREDIT INSURANCE

Comparison of market models for measuring and hedging synthetic CDO tranche spread risks. Jie Ding, Jack; Sherris, Michael [RKN: 44821]
Shelved at: online only
European Actuarial Journal (2011) **1(1) Supplement 2** : 261-281.

Available online via Athens -- Selected paper presented during the 19th International Actuarial Association AFIR Colloquium in Munich, Germany, 2009
The recent credit crisis has focused attention on the models used for pricing and assessing risk of structured credit transactions including synthetic CDOs [collateralised debt obligations]. The market standard one factor Gaussian copula model has been criticized for its unrealistic constant correlation assumption. In this paper, a range of market models that allow a positive relationship between default correlation and default probability, including the correlation mapping methods and the implied copula models, are compared with the Gaussian copula model, based on their relative performance in hedging credit spread risk and pricing bespoke CDOs. The models assessed are calibrated to the traded CDO tranche spreads prior to the credit crisis and then compared based on the mean absolute pricing errors over a time period including the credit crisis. The results of the analysis

highlight a number of issues including the accuracy of "mark-to-model" valuations of bespoke CDOs, the value of including past information in pricing and hedging, and the relative performance of the base correlation Gaussian copula model compared to the other market models in this study.
http://www.openathens.net

CREDIT RISK

Modeling credit value adjustment with downgrade-triggered termination clause using a ruin theoretic approach. Feng, Runhuan; Volkmer, Hans W [RKN: 44800]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **51(2)** : 409-421.
Downgrade-triggered termination clause is a recent innovation in credit risk management to control counterparty credit risk. It allows one party of an over-the-counter derivative to close off its position at marked-to-market price when the other party's credit rating downgrades to an agreed alarming level. Although the default risk is significantly reduced, the non-defaulting party may still suffer losses in case that the other party defaults without triggering the termination clause prior to default. At the heart of the valuation of credit risk adjustment (CVA) is the computation of the probability of default. We employ techniques from ruin theory and complex analysis to provide solutions for probabilities of default, which in turn lead to very efficient and accurate algorithms for computing CVA. The underlying risk model in question is an extension of the commercially available KMV–Merton model and hence can be easily implemented. We provide a hypothetical example of CVA computation for an interest-rate swap with downgrade-triggered termination clause. The paper also contributes to ruin theory by presenting some new results on finite-time ruin probabilities in a jump-diffusion risk model.
http://www.openathens.net/

Quality measures of scoring models. Siarka, Pawel [RKN: 45850]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(4)** : 432-446.
One of the basic stages of constructing credit-scoring models is the assessment of their quality understood as the ability to separate reliable and unreliable borrower population. This paper focuses on methods enabling the assessment of discrimination quality, and presents the results of researches on the basis of empirical data. Apart from establishing the measure of discrimination quality, this paper refers to the issue of the assessment of the stability of results obtained by setting a confidence interval for the quality measure of the scoring model.
http://www.openathens.net

Staring into a black hole. Haldane, Andrew G; Nelson, Benjamin Staple Inn Actuarial Society, - 2 pages. [RKN: 70905]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **October** : 28.
Andrew Haldane and Benjamin Nelson argue the need for a fundamental rethink of risk management tools and regulatory capital requirements.
http://www.theactuary.com/

DAMAGES

Losers and losers: Some demographics of medical malpractice tort reforms. Friedson, Andrew I; Kniesner, Thomas J Springer, [RKN: 45873]
Shelved at: Per: JRU (Oxf)
Journal of Risk and Uncertainty (2012) **45(2)**
Our research examines how recent reforms have affected a key aspect of patients' implicit insurance present in medical malpractice torts. Specifically, we estimate how non-economic damages caps affected pre-trial settlement speed and settlement amounts. Maximum entropy (most likely) quantile regressions emphasize that the post-reform settlement effects most informative for policy evaluation differ greatly from OLS (mean) estimates and clarify the conclusion emerging. In particualr, the effect of the tort reform here can best be thought of as a 25% tax on the asset value of settlements that exempts settlements involving infants. The social welfare effects of tort reform are less clear than the asset reduction effects due to likely health state dependent utility.

DATA

Data aggregation and counterparty identification : Considerations for systemic risk analysis. Krishna, Dilip [RKN: 45712]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 305-313.
Systemic risk analysis is now a topic of considerable interest the world over. It requires a combined analysis of the large counterparties in the global economy along with the interactions they have with each other. The availability of a comprehensive and quality dataset is important to systemic risk analysis. This paper discusses the kinds of data potentially required for systemic risk analysis and provides insights into the desired components of a systemic risk information solution.

Data quality in banking : Regulatory requirements and best practices. Bonollo, Michele; Neri, Massimiliano [RKN: 45693]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 146-161.
Since the beginning of the financial crisis in 2007, the quality of risk data has become a subject of concern for risk managers in banks and other financial institutions. In order to tackle this subject a four-step analysis is proposed. First, the issues associated

with risk data quality in the banking sector are examined, the main one being the silo organisation of risk data. Secondly, the paper reviews the existing data quality regulations in the financial sector, summarising briefly the requirements in Basel II and in Solvency II (the first regulation that provided formal requirements for data quality). Thirdly, a best practice proposal is made for banks in a centralised approach to risk data, involving the integration of risk and finance data. Finally, the centralised data approach is combined with a sensitivity technique in order to obtain more effective data quality strategies and indicators.
http://www.openathens.net

DEATH BENEFIT

Impacts of jumps and stochastic interest rates on the fair costs of guaranteed minimum death benefit contracts. Quittard-Pinon, François; Randrianarivony, Rivo [RKN: 45275]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (1)** : 51-73.

The authors offer a new perspective to the field of guaranteed minimum death benefit contracts, especially for simple return premium and rising floor guarantees. A particular feature of these contracts is a guaranteed capital upon the insured's death. A complete methodology based on the generalized Fourier transform is proposed to investigate the impacts of jumps and stochastic interest rates. This paper thus extends Milevsky and Posner (2001). If jumps alone are considered, similar results are obtained, but, when stochastic interest rates are introduced, the fair costs of the guarantee feature are found to be substantially higher in this more general economy.

DEBT FINANCING

Comparison of market models for measuring and hedging synthetic CDO tranche spread risks. Jie Ding, Jack; Sherris, Michael [RKN: 44821]
Shelved at: online only
European Actuarial Journal (2011) **1(1) Supplement 2** : 261-281.

Available online via Athens -- Selected paper presented during the 19th International Actuarial Association AFIR Colloquium in Munich, Germany, 2009
The recent credit crisis has focused attention on the models used for pricing and assessing risk of structured credit transactions including synthetic CDOs [collateralised debt obligations]. The market standard one factor Gaussian copula model has been criticized for its unrealistic constant correlation assumption. In this paper, a range of market models that allow a positive relationship between default correlation and default probability, including the correlation mapping methods and the implied copula models, are compared with the Gaussian copula model, based on their relative performance in hedging credit spread risk and pricing bespoke CDOs. The models assessed are calibrated to the traded CDO tranche spreads prior to the credit crisis and then compared based on the mean absolute pricing errors over a time period including the credit crisis. The results of the analysis highlight a number of issues including the accuracy of "mark-to-model" valuations of bespoke CDOs, the value of including past information in pricing and hedging, and the relative performance of the base correlation Gaussian copula model compared to the other market models in this study.
http://www.openathens.net

DECISION MAKING

Ambiguity aversion and familiarity bias : Evidence from behavioral and gene association studies. Chew, Soo Hong; Ebstein, Richard P; Zhong, Songfa Springer, [RKN: 45591]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **44 (1)** : 1-18.

It is increasingly recognized that decision making under uncertainty depends not only on probabilities, but also on psychological factors such as ambiguity and familiarity. Using 325 Beijing subjects, we conduct a neurogenetic study of ambiguity aversion and familiarity bias in an incentivized laboratory setting. For ambiguity aversion, 49.4% of the subjects choose to bet on the 50–50 deck despite the unknown deck paying 20% more. For familiarity bias, 39.6% choose the bet on Beijing's temperature rather than the corresponding bet with Tokyo even though the latter pays 20% more. We genotype subjects for anxiety-related candidate genes and find a serotonin transporter polymorphism being associated with familiarity bias, but not ambiguity aversion, while the dopamine D5 receptor gene and estrogen receptor beta gene are associated with ambiguity aversion only among female subjects. Our findings contribute to understanding of decision making under uncertainty beyond revealed preference.

Controlling for initial endowment and experience in binary choice tasks. Fatás, Enrique; Jiménez, Francisca; Morales, Antonio J Springer, [RKN: 45530]
Journal of Risk and Uncertainty (2011) **43 (3)** : 227-243.

Learning literature typically assumes that initial attractions to choose each possible alternative are given exogenously. However, evidence shows that current behaviour depends on past experiences. In this paper, we design an experiment to control for the initial experience in decisions from experience by providing decision makers with an exogenous history (successful vs. unsuccessful) prior to initiating the decision task. Moreover, varying the initial endownment level for fixed histories we investigate the income effect. We are also interested in analysing the duration of both effects (history and income). We find significant treatment effects in the sense that more risk taking behaviour is associated with good histories and with low income levels. According to previous literature, our results confirm the transitory nature of both effects, although the duration of the income effect doubles the duration of the history effect. In the long run, risky choice behaviour converges across different treatments.

Failing to learn from experience about catastrophes : The case of hurricane preparedness. Meyer, Robert J Springer, [RKN: 45854]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **45 (1)** : 25-50.

This paper explores the question of whether there are inherent limits to our ability to learn from experience about the value of protection against low-probability, high-consequence, events. Findings are reported from two controlled experiments in which participants have a monetary incentive to learn from experience making investments to protect against hurricane risks. A central finding is that investments display a short-term forgetting effect consistent with the use of reinforcement learning rules, where a significant driver of investments in a given period is whether storm losses were incurred in the precious period. Given the relative rarity of such losses, this reinforcement process produces a mean investment level below that which would be optimal for most storm threats. Investments are also found to be insensitive to the censoring effect of protection itself, implying that the size of experienced losses—rather than losses that are avoided—is the primary driver of investment decisions.
http://www.openathens.net

DEMUTUALISATION

Conversion and efficiency performance changes: evidence from the U.S. property-liability insurance industry. Chen, Lih-Ru; Lai, Gene C; Wang, Jennifer L [RKN: 45273]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (1)** : 1-35.

This study investigates whether the conversion of U.S. property-liability insurers improves their efficiency performance before and after the conversion. We estimate relative efficiency of converting insurers and control insurers using data envelopment analysis. The Malmquist analysis is also used to measure changes in efficiency pre- and post-conversion. The evidence shows that converting insurers experience larger gains in cost efficiency and total productivity change than mutual control insurers before conversion. In addition, the empirical results indicate that converting insurers improve efficiency after conversion. These results are robust with respect to both the value-added and the financial intermediary approaches. The overall results support the efficiency hypothesis proposed by Mayers and Smith (1986).

DERIVATIVES

Effects of risk management on cost efficiency and cost function of the U.S. Property and liability insurers. Lin, Hong-Jen; Wen, Min-Ming; Yang, Charles C Society of Actuaries, - 12 pages. [RKN: 74918]
Shelved at: Per: NAAJ (Oxf) Per NAAJ (Lon) Shelved at: JOU
North American Actuarial Journal (2011) **15 (4)** : 487-498.

This paper adopts the one-step stochastic frontier approach to investigate the impact of risk management tools of derivatives and reinsurance on cost efficiency of U.S. property-liability insurance companies. The stochastic frontier approach considers both the mean and variance of cost efficiency. The sample includes both stock and mutual insurers. Among the findings, the cost function of the entire sample carries the concavity feature, and insurers tend to use financial derivatives for firm value creation. The results also show that for the entire sample the use of derivatives enhances the mean of cost efficiency but accompanied with larger efficiency volatility. Nevertheless, the utilization of financial derivatives mitigates efficiency volatility for mutual insurers. This research provides important insights for the practice of risk management in the property-liability insurance industry.
http://www.soa.org/news-and-publications/publications/journals/naaj/naaj-detail.aspx

Fallacy of moving the OTC derivatives market to CCPs : Comment. Singh, Manmohan [RKN: 45713]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 314-318.

Recent regulatory efforts, especially in the USA and Europe, are aimed at reducing moral hazard so that the next financial crisis is not bailed out by tax payers. This paper suggests that the regulatory proposals may not remove systemic risk from over-the-counter (OTC) derivatives but rather shift it from banks to central counterparties (CCPs). Furthermore, another taxpayer bailout cannot be ruled out. This paper also suggests that a tax on the derivative liabilities of large banks would address the source of the problem (ie under-collateralisation), and make the OTC derivatives market safer. We also show that, as a by-product, this suggestion would lower CDS spreads in distressed sovereigns.

Mixed dynamic and static risk-minimization with an application to survivor swaps. Dahl, Mikkel; Glar, Sverkel; Møller, Thomas [RKN: 44820]
Shelved at: online only
European Actuarial Journal (2011) **1(1) Supplement 2** : 233-260.

Available online via Athens -- Selected paper presented during the 19th International Actuarial Association AFIR Colloquium in Munich, Germany, 2009
In the traditional setup, the financial market consists of liquid and dynamically traded financial assets. Here, we extend this setup to include an illiquid asset, which may be traded at fixed, discrete times only. Within this setting of mixed dynamic and static hedging, we adopt the criterion of risk-minimization and minimize the so-called risk process at the fixed trading times for the illiquid asset. The optimal mixed dynamic and static risk-minimizing strategies are compared with the optimal dynamic strategies, and certain correction terms that arise, when trading is restricted to discrete time for the illiquid asset, are identified. We apply the technique for a life insurance company whose liabilities are described by a general insurance payment process. Here, the traditional financial market contains a savings account and a zero coupon bond, which may be traded continuously, and an illiquid mortality derivative, traded at fixed times. We provide numerical illustrations with survivor swaps and compare the minimum obtainable risk with the risk for the optimal dynamic strategies.
http://www.openathens.net

OTC central counterparty clearing : Myths and reality. Milne, Alistair [RKN: 45715]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 335-346.

This paper discusses the costs and benefits of introducing central counterparty clearing (CCP) in 'over-the-counter' (OTC) derivative markets. It argues: (i) that the costs are not so large as some commentary has suggested, at least provided that mandatory clearing is applied only to widely traded standardised contracts; (ii) that the key economic benefits of having CCP clearing do not come from reduction of counterparty credit risk (firms are perfectly capable of doing this on their own) — it is instead improved oversight of market participants and the coordinated management of open positions following the failure of a systemically important financial institution, ie the management of default in a systemic crisis; (iii) because these benefits are public goods some policy intervention is appropriate to encourage a suitable level of adoption of CCP clearing; and finally (iv) that the 'rule based' approach to CCP clearing of OTC contracts required by Dodd–Frank has become diverted into an inappropriate focus on the precise requirements for mandatory clearing. Instead a more flexible approach can achieve an appropriate balance between reduced systemic financial risk and the compliance burden on firms.

Systemic risk in financial services. Besar, D; Booth, P; Chan, K K; Milne, A K L; Pickles, J - 106 pages. [RKN: 74795]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 195-300.

The current banking crisis has reminded us of how risks materialising in one part of the financial system can have a widespread impact, affecting other financial markets and institutions and the broader economy. This paper, prepared on behalf of the Actuarial Profession, examines how such events have an impact on the entire financial system and explores whether such disturbances may arise within the insurance and pensions sectors as well as within banking. The paper seeks to provide an overview of a number of banking and other financial crises which have occurred in the past, illustrated by four case studies. It discusses what constitutes a systemic event and what distinguishes it from a large aggregate system wide shock. Finally, it discusses how policy-makers can respond to the risk of such systemic financial failures.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Systemic risk in financial services : Abstract of the London discussion on the preceding. Milne, A K L - 19 pages. [RKN: 74796]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 301-319.

This discussion relates to the following paper:

D. Besar, P. Booth, K.K. Chan, A.K.L. Milne & J. Pickles Systemic risk in financial services. British Actuarial Journal Vol 16 No 2
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Systemic risk in financial services : Abstract of the Edinburgh discussion on the preceding. Milne, A K L - 20 pages. [RKN: 74797]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 321-340.

This discussion relates to the following paper:

D. Besar, P. Booth, K.K. Chan, A.K.L. Milne & J. Pickles Systemic risk in financial services. British Actuarial Journal Vol 16 No 2
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

The systemic risks of OTC derivatives central clearing. Murphy, David [RKN: 45714]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 319-334.

This paper examines the changes to systemic risk made by the introduction of over the counter derivatives central clearing. It discusses both the reductions in exposure brought about by the introduction of central counterparties (CCPs) as buffers between derivatives counterparties, and the risks posed by the potential for a CCP failure. In particular, this paper studies both the solvency risks whereby a CCP might sustain sufficient losses to be unable to continue operations, and liquidity risks whereby the failure of a CCP or one of its members may be caused by an inability to meet claims. Based on this analysis, possible mitigants are suggested to the principal systemic risks posed by central clearing.

DIMINISHING SENSITIVITY

A genuine foundation for prospect theory. Schmidt, Ulrich; Zank, Horst Springer, - 17 pages. [RKN: 70232]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **45 (2)** : 97-113.

In most models of (cumulative) prospect theory, reference dependence of preferences is imposed beforehand and the location of the reference point is determined exogenously. This paper presents principles that provide critical tests and foundations for prospect theory preferences without assuming reference-dependent preferences a priori. Instead, reference dependence is derived from behavior and the reference point arises endogenously.
http://www.openathens.net

DIRECTORS

Transferring knowledge of risk management to the board of directors and executives. Rodriguez, Eduardo; Edwards, John S [RKN: 45694]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 162-180.

Enterprise risk management (ERM) and knowledge management (KM) both encompass top-down and bottom-up approaches developing and embedding risk knowledge concepts and processes in strategy, policies, risk appetite definition, the decision-making process and business processes. The capacity to transfer risk knowledge affects all stakeholders and understanding of the risk knowledge about the enterprise's value is a key requirement in order to identify protection strategies for business sustainability. There are various factors that affect this capacity for transferring and understanding. Previous work has established that there is a difference between the influence of KM variables on risk control and on the perceived value of ERM. Communication among groups appears as a significant variable in improving risk control but only as a weak factor in improving the perceived value of ERM. The ERM mandate, however, requires for its implementation a clear understanding of risk management (RM) policies, actions and results, and the use of the integral view of RM as a governance and compliance programme to support the value-driven management of the organisation. Furthermore, ERM implementation demands better capabilities for unification of the criteria of risk analysis, alignment of policies and protection guidelines across the organisation. These capabilities can be affected by risk knowledge sharing between the RM group and the board of directors and other executives in the organisation. This research presents an exploratory analysis of risk knowledge transfer variables used in risk management practice. A survey to risk management executives from 65 firms in various industries was undertaken and 108 answers were analysed. Potential relationships among the variables are investigated using descriptive statistics and multivariate statistical models. The level of understanding of risk management policies and reports by the board is related to the quality of the flow of communication in the firm and perceived level of integration of the risk policy in the business processes.

DISCOUNTING

Innovation and information acquisition under time inconsistency and uncertainty. Chemarin, Sophie; Orset, Caroline - 42 pages. [RKN: 74787]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (2)** : 132-173.

When an agent invests in new industrial activities, he has a limited initial knowledge of his project's returns. Acquiring information allows him both to reduce the uncertainty on the dangerousness of this project and to limit potential damages that it might cause on people's health and on the environment. In this paper, we study whether there exist situations in which the agent does not acquire information. We find that an agent with time-consistent preferences, as well as an agent with hyperbolic ones, will acquire information unless its cost exceeds the direct benefit they could get with this information. Nevertheless, a hyperbolic agent may remain strategically ignorant and, when he does acquire information, he will acquire less information than a time-consistent type. Moreover, a hyperbolic-discounting type who behaves as a time-consistent agent in the future is more inclined to stay ignorant. We then emphasize that this strategic ignorance depends on the degree of precision of the information. Finally, we analyse the role that existing liability rules could play as an incentive to acquire information under uncertainty and with regard to the form of the agent's preferences.

DISTRIBUTION THEORY

Corporate, product and distribution strategies in the European life insurance industry. Klumpes, Paul J M; Schuermann, Stefan Palgrave Macmillan, [RKN: 39976]
Shelved at: Per: Geneva (Oxf)
Geneva Papers on Risk and Insurance (2011) **36(1)** : 50-75.

Available online via Athens
This paper examines corporate, marketing and product distribution strategies in the cost and revenue efficiency across a sample of life insurers that operate in European markets with the highest insurance concentration and density. We predict that these strategies are also affected by segmentation and cross-country differences in regulatory type (“alpine” vs. “atlantic”), which facilitate managerial opportunistic behaviour in choice of distribution strategy. This contrasts with the standard market efficiency hypothesis, which predicts that firms that adopt one of three generic strategies (cost, customer focus and product differentiation) are more efficient than rivals that fail to adopt one of these strategies. Our results support the prediction of the market imperfection hypothesis that firms with non-exclusive distribution systems are less costly and profit-efficient. We also find that firms surviving the recent financial crisis rely on exclusive distribution channels, product differentiation and experience the highest degree of change in cost efficiency over time of increasing deregulation. These findings imply that imperfections in these markets are driven by a combination of tax incentives, regulatory arbitrage and technology transfer of larger firms that exploit their size and dominance to use multiple distribution systems, which are more costly and profit-efficient.
http://www.openathens.net

DIVERSIFICATION

Risk parity in US futures markets : Invited editorial. Scherer, Bernd Palgrave Macmillan, [RKN: 45745]
Shelved at: Per: J.Asset Man (Oxf)
Journal of Asset Management (2012) **13 (3)** : 155-161.

Risk parity allocates identical percentage contribution to risk to each individual asset. In the absence of established theoretical foundations, investors and product suppliers attribute the strong historical performance of risk parity portfolios to better diversification. This is an ill-founded belief. For US futures data I show that risk parity is not about diversification, but about higher return expectations for leveraged low-risk bonds. Although this is consistent with leverage aversion, it is incompatible with consumption-based asset pricing. In contrast to past work, I use futures data instead of diversified equity and bond indices. This allows concerns raised earlier about the availability of historic implementation costs or the historic price of leverage to be sidestepped.

DIVIDENDS

The optimal dividend barrier in the Gamma–Omega model. Albrecher, Hansjörg; Gerber, Hans U; Shiu, Elias S W [RKN: 44805]
Shelved at: online only
European Actuarial Journal (2011) **1(1) July** : 43-55.

Available online via Athens
In the traditional actuarial risk model, if the surplus is negative, the company is ruined and has to go out of business. In this paper we distinguish between ruin (negative surplus) and bankruptcy (going out of business), where the probability of bankruptcy is a function of the level of negative surplus. The idea for this notion of bankruptcy comes from the observation that in some industries, companies can continue doing business even though they are technically ruined. Assuming that dividends can only be paid with a certain probability at each point of time, we derive closed-form formulas for the expected discounted dividends until bankruptcy under a barrier strategy. Subsequently, the optimal barrier is determined, and several explicit identities for the optimal value are found. The surplus process of the company is modeled by a Wiener process (Brownian motion).
http://www.openathens.net

Optimal dividend strategies in a Cramer–Lundberg model with capital injections and administration costs. Scheer, Natalie; Schmidli, Hanspeter [RKN: 44806]
Shelved at: online only
European Actuarial Journal (2011) **1(1) July** : 57-92.

Available online via Athens
In this paper, we consider a classical risk model with dividend payments and capital injections in the presence of both fixed and proportionals administration costs. Negative surplus or ruin is not allowed. We measure the value of a strategy by the discounted value of the dividends minus the costs. It turns out, capital injections are only made if the claim process falls below zero. Further, at the time of an injection the company may not only inject the deficit, but inject additional capital C C 0 to prevent future capital injections. We derive the associated Hamilton–Jacobi–Bellman equation and show that the optimal strategy is of band type. By using Gerber–Shiu functions, we derive a method to determine numerically the solution to the integro-differential equation and the unknown value C.
http://www.openathens.net

Threshold dividend strategies for a Markov-additive risk model. Breuer, Lothar [RKN: 44835]
Shelved at: online only
European Actuarial Journal (2011) **1(2) November** : 237-258.

Available online via Athens -- Published online, 22 December 2011
We consider the following risk reserve model. The premium income is a level dependent Markov-modulated Brownian motion. Claim sizes are iid with a phase-type distribution. The claim arrival process is a Markov-modulated Poisson process. For this model the payment of dividends under a threshold dividend strategy and the time until ruin will be analysed.
http://www.openathens.net

DOWNSIDE RISK AVERSION

Decreasing absolute risk aversion, prudence and increased downside risk aversion. Meyer, Jack; Liu, Liqun Springer, - 18 pages. [RKN: 73973]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **44 (3)** : 243-260.

Downside risk increases have previously been characterized as changes preferred by all decision makers u(x) with u'''(x) > 0. For risk averse decision makers, u'''(x) > 0 also defines prudence. This paper finds that downside risk increases can also be characterized as changes preferred by all decision makers displaying decreasing absolute risk aversion (DARA) since those changes involve random variables that have equal means. Building on these findings, the paper proposes using “more decreasingly absolute risk averse” or “more prudent” as alternative definitions of increased downside risk aversion. These alternative definitions generate a transitive ordering, while the existing definition based on a transformation function with a positive third derivative does not. Other properties of the new definitions of increased downside risk aversion are also presented.
http://www.openathens.net

EARTHQUAKES

An analysis of the demand for earthquake insurance. Athavale, Manoj; Avila, Stephen M - 14 pages. [RKN: 74763]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (2)** : 233-246.

This research examines the decision to purchase earthquake insurance by analyzing data on earthquake insurance price and penetration in the New Madrid fault zone in Missouri. Earthquake risk is of concern to consumers, the insurance industry, industry regulators, and government agencies because of the potentially catastrophic nature of losses resulting from a major earthquake. Despite the significance of the earthquake peril, the recent literature does not contain estimates of the price and income elasticity of the demand for earthquake insurance. Our analysis indicates that homeowners acquire earthquake insurance because of risk considerations, at higher levels of risk the demand for earthquake insurance is higher, and the price of earthquake coverage does not provide incremental information in explaining the demand for earthquake coverage.
http://www.openathens.net

ECONOMIC PROJECTIONS

On the underestimation of the precautionary effect in discounting. Gollier, Christian - 17 pages. [RKN: 74785]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (2)** : 95-111.

Using the extended Ramsey rule, the socially efficient rate is the difference between a wealth effect and a precautionary effect of economic growth. This second effect is increasing in the degree of uncertainty affecting the future. In the literature, it is usually calibrated by estimating the historical volatility of the growth of GDP in a specific country. In this paper, I show that using cross-section data tends to magnify uncertainty, and to reduce the discount rate. Using a data set covering 190 countries over the period 1969–2010, I justify using a much smaller discount rate of approximately 0.7 per cent per year for time horizons exceeding 40 years.

ECONOMICS

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EDITORIAL

Delving into the unknown. Jobanputra, Deepak Staple Inn Actuarial Society, - 1 pages. [RKN: 70758]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **July** : 5.

Can we develop a fool-proof risk plan for every eventuality, asks Deepak Jobanputra.
http://www.theactuary.com/

Editorial : FX : The clearing conundrum. Maguire, Frances; Bessis, Joel [RKN: 45845]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(4)** : 356-358.

http://www.openathens.net

Is it time to embrace risk?. Jobanputra, Deepak Staple Inn Actuarial Society, - 1 pages. [RKN: 70678]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **September** : 5.

We should see risk as a potential opportunity to define a solution, suggests Deepak Jobanputra
http://www.theactuary.com/

Risk parity in US futures markets : Invited editorial. Scherer, Bernd Palgrave Macmillan, [RKN: 45745]
Shelved at: Per: J.Asset Man (Oxf)
Journal of Asset Management (2012) **13 (3)** : 155-161.

Risk parity allocates identical percentage contribution to risk to each individual asset. In the absence of established theoretical foundations, investors and product suppliers attribute the strong historical performance of risk parity portfolios to better diversification. This is an ill-founded belief. For US futures data I show that risk parity is not about diversification, but about higher return expectations for leveraged low-risk bonds. Although this is consistent with leverage aversion, it is incompatible with consumption-based asset pricing. In contrast to past work, I use futures data instead of diversified equity and bond indices. This allows concerns raised earlier about the availability of historic implementation costs or the historic price of leverage to be sidestepped.

EDUCATION

Strategic market entry project. Ferguson, William L; Ferguson, Tamela - 11 pages. [RKN: 74704]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (1)** : 145-155.

Successful risk management is critical to top level decision makers in any organization, involving fundamental strategic policy and planning to identify and allocate scarce resources to projects or activities that generate sustainable competitive advantage and maximize available long-term growth opportunities, or even survival. This article describes a flexible group project wherein students of risk management and insurance (RMI) may gain additional exposure and experience with applications of fundamental strategic management theory in the context of their particular RMI major coursework. The Project may be a useful tool in helping RMI students further develop their research and presentation skills, as well as enhance critical strategic decision making; exposure to cultural, regional or globalization issues; application of fundamental strategic management concepts; and knowledge of current events. While this Project was developed primarily for RMI students, students across business disciplines also may benefit from participation.

http://www.openathens.net

Using technology to encourage critical thinking and optimal decision making in risk management education. Garvey, John; Buckley, Patrick - 11 pages. [RKN: 74766]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (2)** : 299-309.

This article draws a link between the risk management failures in the financial services industry and the educational philosophy and teaching constraints at business schools. An innovative application of prediction market technology within business education is proposed as a method that can be used to encourage students to think about risk in an open and flexible way. This article explains how prediction markets also provide students with the necessary experience to critically evaluate and stress-test quantitative risk modeling techniques later in their academic and professional careers.

http://www.openathens.net

ENTERPRISE RISK MANAGEMENT

Capital allocation in the property-liability insurance industry. D'Arcy, Stephen P [RKN: 43604]
Shelved at: Per: Variance
Variance (2011) **5(2)** : 141-157.

Capital allocation is a theoretical exercise, since all of a firm's capital could be depleted to cover a significant loss arising from any one segment. However, firms do need to allocate capital for pricing, risk management, and performance evaluation. One versatile allocation method, the Ruhm-Mango-Kreps algorithm, has several key advantages: additivity, simplicity, and flexibility. However, the approach is so flexible that it can be used to produce many different values instead of a single answer. In this paper, the cost of capital in financial markets is incorporated into the Ruhm-Mango-Kreps algorithm to yield one allocation that reflects the true cost of capital an insurer would face.

http://www.variancejournal.org/issues

Corporate value of enterprise risk management: the next step in business management. Segal, Sim (2011). - Hoboken, NJ: Wiley, 2011. - xiii, 404 pages. [RKN: 74706]
Shelved at: UHG/AA (Lon) Shelved at: 658.15

Counting the cost of enterprise risk management. Klumpes, Paul Staple Inn Actuarial Society, - 2 pages. [RKN: 74939]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **March** : 30-31.

Paul Klumpes looks at the accountant's perspective of managing risk

http://www.theactuary.com/

Current topics within the life insurance industry. Elliot, Martin; Hare, David (2011). - Edinburgh: Faculty of Actuaries Students' Society, 2011. - 29 pages. [RKN: 43567]
Shelved at: FASS

http://www.fass-online.org/index.php?option=com content&view=article&id=146&Itemid=190

Developments in the management of annuity business. Telford, P G; Browne, B A; Collinge, E J; Fulcher, P; Johnson, B E; Little, W; Lu, J L C; Nurse, J M; Smith, D W; Zhang, F - 81 pages. [RKN: 73860]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (3)** : 471-551.

The focus of the paper is non-profit lifetime annuities in the UK. Annuity insurers have been faced with, or have initiated, an unprecedented amount of change during the last decade, and rapid change is still continuing. We draw out implications for the actuarial management of the business, arising from the evolution of: longevity risk assessment and management, investment strategy and operations, financial reporting, and enterprise risk management. We discuss Solvency II in some technical depth, analysing the proposed rules for technical provisions and solvency capital requirement.

http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Developments in the management of annuity business : Abstract of the Edinburgh discussion. Telford, Peter - 24 pages. [RKN: 73861]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (3)** : 553-576.
This abstract relates to the following paper:
P.G. Telford, B.A. Browne, E.J. Collinge, P. Fulcher, B.E. Johnson, W. Little, J.L.C. Lu, J.M. Nurse, D.W. Smith & F. Zhang Developments in the Management of Annuity Business. British Actuarial Journal, 16 (3).
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Developments in the management of annuity business : Abstract of the London discussion. Telford, Peter - 23 pages. [RKN: 73862]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (3)** : 577-599.
This abstract relates to the following paper:
P.G. Telford, B.A. Browne, E.J. Collinge, P. Fulcher, B.E. Johnson, W. Little, J.L.C. Lu, J.M. Nurse, D.W. Smith & F. Zhang Developments in the Management of Annuity Business. British Actuarial Journal, 16 (3).
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Developments in the management of annuity business : Abstract of the London discussion-ADDENDUM. Telford, Peter - 2 pages. [RKN: 73960]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (1)** : 256-257.
Institute of Actuaries, 22 March 2010.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Dynamic management actions. Clark, Dominic; Kent, Jeremy; Morgan, Ed (2012). - London: Staple Inn Actuarial Society, 2012. - 31 pages. [RKN: 43537]
Shelved at: Online only Shelved at: Online only
Slide presentation to Staple Inn Actuarial Society, 6 March 2012
Realistic modelling of dynamic management actions is critical to many areas of the financial management of a life insurance company today. In our overview of this topic we will:
- explain what is meant by dynamic management actions ("DMA") and what the main types of DMA are;
- introduce the areas in which DMA is important (e.g. Solvency II, MCEV, ALM etc);
- describe how DMA can be linked to real expected management behaviour (including considerations around concepts such as the Use Test);
- illustrate how improved modelling of DMA can, under some circumstances, materially influence calculated results;
- show how understanding DMA and its interactions with dynamic policyholder behaviour can improve a company's Enterprise Risk Management;
http://www.sias.org.uk/siaspapers/search/view paper?id=SIASPaperMar2012

Enterprise risk management for health insurance from an actuarial perspective. Orros, G C; Smith, J - 56 pages. [RKN: 70180]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (2)** : 259-314.
This paper focuses on Enterprise Risk Management (ERM) and strategic business management for health insurance companies in our world of 'unknown unknowns' and the emergence of unexpected risks over time. It illustrates how Chief Risk Officers (CROs) can focus on 'risk and opportunity management' through an ERM framework, and thereby balance risks against opportunities, whilst being resilient against 'unknown unknowns' and their emergence over time as 'known unknowns' and 'known knowns'. The paper has been designed to meet the broad requirements of health insurers that would like to implement an ERM framework for the effective risk management of their health insurance lines of business. Risk management for health insurers in the context of Solvency II and broader European Commission regulatory requirements is also discussed. The authors discuss how insurers can develop and apply risk management to build resilience in the face of the storms and shocks that may lie ahead.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Enterprise risk management for health insurance from an actuarial perspective : Abstract of the London discussion. Orros, G C - 16 pages. [RKN: 70181]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (2)** : 315-330.
London discussion, 18 January 2011.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Enterprise Risk Management through strategic allocation of capital. Ai, Jing; Brockett, Patrick L; Cooper, William W; Golden, Linda L - 28 pages. [RKN: 73846]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2012) **79 (1)** : 29-56.
Available online via Athens
This article presents a conceptual framework for operationalizing strategic enterprise risk management (ERM) in a general firm. We employ a risk-constrained optimization approach to study the capital allocation decisions under ERM. Given the decision maker's risk appetite, the problem of holistically managing enterprise-wide hazard, financial, operational, and real project risks is treated by maximizing the expected total return on capital, while trading off risks simultaneously in Value-at-Risk type of constraints. This approach explicitly quantifies the concepts of risk appetite and risk prioritization in light of the firm's default and financial distress avoidance reflected in its target credit rating. Our framework also allows the firm to consider a multiperiod planning horizon so that changing business environments can be accounted for. We illustrate the implementation of the framework through a numerical example. As an initial conceptual advancement, our formulation is capable of facilitating more general ERM modeling within a consistent strategic framework, where idiosyncratic variations of firms and different modeling assumptions can be accommodated. Managerial implications are also discussed.
http://www.openathens.net

Entity-wide risk management for pension funds
. Kemp, M H D; Patel, C C - 64 pages. [RKN: 70185]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (2)** : 331-394.

This paper explores the application of ERM-style techniques to pension funds. It uses the term ‘entity-wide risk management’ rather than ‘enterprise risk management’, even though both have the same acronym (‘ERM’), because many pension funds do not view themselves as business ‘enterprises’ as such. Some of the techniques that business enterprises have for managing risk (e.g. raising new capital from shareholders or branching into new business areas if existing ones have unattractive risk-reward characteristics) may not be open to many pension funds. The paper argues that the holistic approach to risk management (and governance) that is a hallmark of ERM is as appropriate to pension funds as it is to any other type of entity. This is the case whether the fund is defined benefit or defined contribution in nature, or a hybrid. It is also the case whether the ‘entity’ is deemed to be the fund itself, the sponsor or the two combined. Indeed, there are aspects of pension arrangements, such as the relationship between the fund and its sponsor, that lend added impetus to the use of ERM-style techniques in practical pension fund management.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Entity-wide risk management for pension funds : Abstract of the Edinburgh discussion. Kemp, M H D - 18 pages. [RKN: 70186]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (2)** : 395-412.

Edinburgh discussion, 21 February 2011
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Entity-wide risk management for pension funds : Abstract of the London discussion. Kemp, M H D - 22 pages. [RKN: 70195]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (2)** : 413-434.

London discussion, 28 February 2011
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Entity-wide risk management for pension funds. Kemp, Malcolm H D; Patel, C C (2011). - London: Institute and Faculty of Actuaries, 2011. - 74 pages. [RKN: 73665]
Shelved at: JOU

Presented to the Institute and Faculty of Actuaries on 21 February 2011 (Edinburgh) and 28 February 2011 (London).
This paper explores the application of ERM-style techniques to pension funds. It used the term 'entity-wide risk management' rather than 'enterprise risk management', even though both have the same acronym ('ERM'), because many pension funds do not view themselves as business 'enterprises' as such. Some of the techniques that business enterprises have for managing risk (e.g. raising new capital from shareholders or branching into new business areas if existing ones have unattractive risk-reward characterisitics) may not be open to many pension fund. The paper argues that the holistic approach to risk management (and governance) that is a hallmark of ERM is as appropriate to pension funds as it is to any other type of entity. This is the case whether the fund is defined benefit or defined contribution in nature, or a hybrid. It is also the case whether the ‘entity’ is deemed to be the fund itself, the
sponsor or the two combined. Indeed, there are aspects of pension arrangements, such as the
relationship between the fund and its sponsor, that lend added impetus to the use of ERM-style
techniques in practical pension fund management.
http://www.actuaries.org.uk/research-and-resources/documents/entity-wide-risk-management-pension-funds

ERM for insurance companies - Adding the investor's point of view. Hitchcox, A N; Klumpes, P J M; McGaughey, K W; Smith, A D; Taverner, N H (2010). 2010. [RKN: 72028]
Shelved at: ifp 01/10 (Strg box SI Ref 5) ifp 01/10 (Lon) Shelved at: JOU/INS
BAJ (2011) **16(2)** : 385-404.

A major outcome of ERM activities in insurance companies has been the bringing together of all of the key risks in the company, to be managed together in a holistic fashion. The authors of this paper believe that an ERM framework also needs to look beyond the company, and have regard to the risk management needs of investors, from the point of view of the contribution of the insurance company to the overall risk and reward of their total investment portfolios. To meet these needs, the ERM framework needs to provide sufficient information on topics such as systematic risk, potential correlations of earnings from future new business with macroeconomic trends, other risks to franchise value, and sources of model risk within the company. The paper does not provide solutions for the issues described above; but limits itself to describing and discussing the direction for some important new initiatives in ERM activities. Keywords: Risk Management; Enterprise Risk Management (ERM); Systematic Risk; Franchise Value; Buffer Capital; Cost of Capital; Replicating Portfolio; Parameter Risk; Model Risk; Agency Risk; Risk Governance; Risk Disclosure.
http://www.actuaries.org.uk/research-and-resources/documents/erm-insurance-companies-adding-investors-point-view

ERM for insurance companies – adding the investor's point of view. Hitchcox, A N; Klumpes, P J M; McGaughey, K W; Smith, A D; Taverner, N H - 44 pages. [RKN: 74798]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 341-383.

A major outcome of ERM activities in insurance companies has been the bringing together of all of the key risks in the company, to be managed collectively in a holistic fashion. The authors of this paper believe that an ERM framework also needs to look beyond the company, and have regard to the risk management needs of investors, from the point of view of the contribution of the insurance company to the overall risk and reward of their total investment portfolios. To meet these needs, the ERM framework needs to provide sufficient information on topics such as systematic risk, potential correlations of earnings from future new business with macroeconomic trends, other risks to franchise value, and sources of model risk within the company. The paper does not provide solutions for the issues described above; but limits itself to describing and discussing the direction for some important new initiatives in ERM activities.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

ERM for insurance companies – adding the investor's point of view : Abstract of the London discussion on the preceding.
Hitchcox, A N - 20 pages. [RKN: 74960]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 385-404.

This discussion relates to the following paper:
A.N. Hitchcox, P.J.M. Klumpes, K.W. McGaughey, A.D. Smith & N.H. Taverner ERM for insurance companies – adding the investor's point of view. British Actuarial Journal Vol 16 No 2
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Fast remote but not extreme quantiles with multiple factors: applications to Solvency II and Enterprise Risk Management.
Chauvigny, Matthieu; Devineau, Laurent; Loisel, Stéphane; Maume-Deschamps, Véronique [RKN: 44809]
Shelved at: online only
European Actuarial Journal (2011) **1(1) July** : 131-157.

Available online via Athens
For operational purposes, in Enterprise Risk Management or in insurance for example, it may be important to estimate remote (but not extreme) quantiles of some function f of some random vector. The call to f may be time- and resource-consuming so that one aims at reducing as much as possible the number of calls to f. In this paper, we propose some ways to address this problem of general interest. We then numerically analyze the performance of the method on insurance and Enterprise Risk Management real-world case studies.
http://www.openathens.net

Financial enterprise risk management. Sweeting, Paul (2011). - Cambridge: Cambridge University Press, 2011. - xii, 551 pages. [RKN: 45449]
Shelved at: UHG/AA/EC (Lon) Shelved at: 332.6

Financial Enterprise Risk Management provides all the tools needed to build and maintain a comprehensive ERM framework. As well as outlining the construction of such frameworks, it discusses the internal and external contexts within which risk management must be carried out. It also covers a range of qualitative and quantitative techniques that can be used to identify, model and measure risks, and describes a range of risk mitigation strategies. Over 100 diagrams are used to help describe the range of approaches available, and risk management issues are further highlighted by various case studies. A number of proprietary, advisory and mandatory risk management frameworks are also discussed, including Solvency II, Basel III and ISO 31000:2009.
http://www.myilibrary.com?id=334223&Ref=Athens

Global lockdown?. Curtis, Rob Staple Inn Actuarial Society, - 2 pages. [RKN: 73877]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **May** : 28-29.

Rob Curtis takes a look at what the enforcement of recovery and resolution plans could mean for insurers.
http://www.theactuary.com/

Handling uncertainty : The key to truly effective enterprise risk management. Institute and Faculty of Actuaries; Institution of Civil Engineers (2011). - London: Institute and Faculty of Actuaries, 2011. - 15 pages. [RKN: 45632]
Shelved at: Online only Shelved at: Online only

This booklet outlines a significant new approach to Enterprise Risk Management (ERM), adding value from the systematic management of uncertainty. It addresses how businesses can manage the future better by concentrating on uncertainty, the overall variability of business outcomes, the connections and correlations between risks, and the scope for new business opportunities, within an ERM framework.
http://www.actuaries.org.uk/research-and-resources/documents/handling-uncertainty-key-truly-effective-enterprise-risk-management

L'analyse de la rentabilité vue par la formule standard. Derien, Anthony; Le Floc'h, Emmanuel [RKN: 43465]
Shelved at: online only
Bulletin Français d'Actuariat (2011) **11 (no.22)** : 83-104.

The standard formula is mainly viewed as a basic formula to evaluate the regulatory capital, the internal model being commonly considered as a more powerful tool to adopt a proactive approach as defined in the ``Use Test'' (capital allocation, reinsurance, ...). The main arguments of the standard formula are the rigidity and the lack of flexibility to fit the risk profile of the insurance company. This research aims to demonstrate that the standard formula can have a more important contribution in the enterprise risk management with the production of keys indicator.
http://www.institutdesactuaires.com/bfa/

Navigating in a changing world : Global risk managing survey, 7th ed.. (2011). Deloitte Global Services Ltd, 2011. - 43 pages. [RKN: 45103]
Shelved at: online only

Deloitte's Global risk management survey, seventh edition, assesses the state of risk management in this new environment. The survey was conducted during the third quarter of 2010, and its results are based upon the responses of 131 financial institutions from around the world - including retail and commercial banks, insurance companies, and asset managers - with aggregate total assets of more than $17 trillion. Key findings of the survey include: 1) The position of Chief Risk Officer (“CRO”) continued to become increasingly prevalent. Eighty-six percent of institutions had a CRO or equivalent position, up from 73 percent in 2008 and 65 percent in 2002. The CRO has been given a high profile, reporting at the board level or to the CEO (or both) at 85 percent of institutions. Fifty-one percent of institutions reported that the board of directors conducts executive sessions with the CRO, compared to 37 percent in 2008. 2) In the wake of the global financial crisis, the importance of incorporating risk management considerations into performance evaluations and compensation decisions has been widely discussed, but 37 percent of institutions reported that they had completely or substantially done so for business unit personnel. 3) More institutions have adopted ERM programs - 79 percent of institutions reported having an ERM program or equivalent in place or in progress, an increase from 59 percent in 2008. The greatest challenges in implementing an effective ERM program, cited by roughly a quarter

of institutions as extremely or very challenging, were integrating data across the organization and cultural issues. 4) More than 80 percent of institutions experienced significant impacts from regulatory changes in the countries where they operate; at 40 percent of responding institutions, these impacts included the need to maintain higher capital levels and the need to maintain higher liquidity ratios.
http://www.finextra.com/Finextra-downloads/featuredocs/GRMS%207th%20edition%20report%20final.pdf

A review of the use of complex systems applied to risk appetite and emerging risks in ERM practice. Allan, Neil; Cantle, Neil J; Godfrey, P; Yin, Y (2011). - London: Institute and Faculty of Actuaries, 2011. - 74 pages. [RKN: 44920]
Shelved at: ifp 11/11 (Lon) Shelved at: JOU
http://www.actuaries.org.uk/research-and-resources/documents/review-use-complex-systems-applied-risk-appetite-and-emerging-risks

Roads to ruin: a study of major risk events: their origins, impact and implications. Atkins, Derek; Fitzsimmons, Anthony; Parsons, Chris; Punter, Alan (2012). - London: Airmic, 2012. - [3], 183, [1] pages. [RKN: 43527]
Shelved at: AZA/BYF/BYG/EEQ (Lon)
'A report by Cass Business School on behalf of Airmic sponsored by Crawford and Lockton' - t.p.

Transferring knowledge of risk management to the board of directors and executives. Rodriguez, Eduardo; Edwards, John S [RKN: 45694]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 162-180.
Enterprise risk management (ERM) and knowledge management (KM) both encompass top-down and bottom-up approaches developing and embedding risk knowledge concepts and processes in strategy, policies, risk appetite definition, the decision-making process and business processes. The capacity to transfer risk knowledge affects all stakeholders and understanding of the risk knowledge about the enterprise's value is a key requirement in order to identify protection strategies for business sustainability. There are various factors that affect this capacity for transferring and understanding. Previous work has established that there is a difference between the influence of KM variables on risk control and on the perceived value of ERM. Communication among groups appears as a significant variable in improving risk control but only as a weak factor in improving the perceived value of ERM. The ERM mandate, however, requires for its implementation a clear understanding of risk management (RM) policies, actions and results, and the use of the integral view of RM as a governance and compliance programme to support the value-driven management of the organisation. Furthermore, ERM implementation demands better capabilities for unification of the criteria of risk analysis, alignment of policies and protection guidelines across the organisation. These capabilities can be affected by risk knowledge sharing between the RM group and the board of directors and other executives in the organisation. This research presents an exploratory analysis of risk knowledge transfer variables used in risk management practice. A survey to risk management executives from 65 firms in various industries was undertaken and 108 answers were analysed. Potential relationships among the variables are investigated using descriptive statistics and multivariate statistical models. The level of understanding of risk management policies and reports by the board is related to the quality of the flow of communication in the firm and perceived level of integration of the risk policy in the business processes.

Unravelling the complexity of risk. Cantle, Neil Staple Inn Actuarial Society, [RKN: 45113]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **March** : 33.
Neil Cantle provides an update on the progress so far and expected future outputs of one of the Profession's ERM research projects. http://www.theactuary.com/archive

ENVIRONMENT

Comparing risk preferences over financial and environmental lotteries. Riddel, Mary Springer, - 23 pages. [RKN: 70238]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **45 (2)** : 135-157.
This paper investigates whether preferences over environmental risks are best modeled using probability-weighted utility functions or can be reasonably approximated by expected utility (EU) or subjective EU models as is typically assumed. I elicit risk attitudes in the financial and environmental domains using multiple-price list experiment. I examine how subjects' behavioral, attitudinal, and demographic characteristics affect their probability weighting functions first for financial risks, then for oil-spill risks. I find that most subjects tend to overweight extreme positive outcomes relative to expected utility in both the environmental and financial domains. Subjects are more likely to overemphasize low probability, extreme environmental outcomes than low probability, extreme financial outcomes, leading subjects to offer more support for mitigating environmental gambles than financial gambles with the same odds and equivalent outcomes. I conclude that EU models are likely to underestimate subjects' willingness to pay for environmental cleanup programs or policies with uncertain outcomes.
http://www.openathens.net

Comparing risk preferences over financial and environmental lotteries. Riddel, Mary Springer, [RKN: 45874
]
Shelved at: Per: JRU (Oxf)
Journal of Risk and Uncertainty (2012) **45(2)** : 135-157.
This paper investigates whether preferences over environmental risks are best modeled using probability-weighted utility functions or can be reasonably approximated by expected utility (EU) or subjective EU models as is typically assumed. I elicit risk attitudes in the financial and environmental domains using multiple-price list experiment. I examine how subjects' behavioral, attitudinal, and demographic characteristics affect their probability weighting functions first for financial risks, then for oil-spill risks. I find that most subjects tend to overweight extreme positive outcomes relative to expected utility in both the environmental and financial domains. Subjects are more likely to overemphasize low probability, extreme environmental outcomes than low probability extreme financial outcomes, leading subjects to offer more support for mitigating environmental gambles than financial gambles with the same odds and equivalent outcomes. I conclude that EU models are likely to underestimate subjects' willingness to pay for environmental cleanup programs or policies with uncertain outcomes.

ERLAND RISK MODELS

Erlang risk models and finite time ruin problems. Dickson, David C M; Li, Shuanming [RKN: 44884]
Shelved at: Per: SAJ Shelved at: SCA/ACT
Scandinavian Actuarial Journal (2012) **3** : 183-202.
Available via Athens access
We consider the joint density of the time of ruin and deficit at ruin in the Erlang(n) risk model. We give a general formula for this joint density and illustrate how the components of this formula can be found in the special case when n=2. We then show how the formula can be implemented numerically for a general value of n. We also discuss how the ideas extend to the generalised Erlang(n) risk model.
http://www.openathens.net/

EUROPE

Corporate, product and distribution strategies in the European life insurance industry. Klumpes, Paul J M; Schuermann, Stefan Palgrave Macmillan, [RKN: 39976]
Shelved at: Per: Geneva (Oxf)
Geneva Papers on Risk and Insurance (2011) **36(1)** : 50-75.
Available online via Athens
This paper examines corporate, marketing and product distribution strategies in the cost and revenue efficiency across a sample of life insurers that operate in European markets with the highest insurance concentration and density. We predict that these strategies are also affected by segmentation and cross-country differences in regulatory type ("alpine" vs. "atlantic"), which facilitate managerial opportunistic behaviour in choice of distribution strategy. This contrasts with the standard market efficiency hypothesis, which predicts that firms that adopt one of three generic strategies (cost, customer focus and product differentiation) are more efficient than rivals that fail to adopt one of these strategies. Our results support the prediction of the market imperfection hypothesis that firms with non-exclusive distribution systems are less costly and profit-efficient. We also find that firms surviving the recent financial crisis rely on exclusive distribution channels, product differentiation and experience the highest degree of change in cost efficiency over time of increasing deregulation. These findings imply that imperfections in these markets are driven by a combination of tax incentives, regulatory arbitrage and technology transfer of larger firms that exploit their size and dominance to use multiple distribution systems, which are more costly and profit-efficient.
http://www.openathens.net

Investigating risk disclosure practices in the European insurance industry. Höring, Dirk; Gründl, Helmut Palgrave Macmillan, [RKN: 44915]
Shelved at: Per: Geneva (Oxf)
Geneva Papers on Risk and Insurance (2011) **36(3)** : 380-413.
Available online via Athens
In light of the upcoming Solvency II Pillar 3 disclosure regulation for the insurance industry, this paper explores the risk disclosure practices in annual reports of European primary insurers in the Dow Jones Stoxx 600 Insurance Index between 2005 and 2009. On the basis of a self-constructed risk disclosure index, the study examines the relation between the extent of risk disclosure and insurance companies' characteristics such as size, risk, profitability, ownership dispersion, cross-listing, home country and type of insurance sold, to draw inferences regarding motives for enhanced risk disclosure based on positive accounting theory.
http://www.openathens.net

EUROPEAN UNION

A free lunch...from the EU?. Cook, Paul; Rajoo, Meera Staple Inn Actuarial Society, - 2 pages. [RKN: 74929]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **January/February** : 30-31.
Solvency II offers a real incentive for diversifying risk, but is it quite the bonus it appears to be? Paul Cook and Meera Rajoo investigate
http://www.theactuary.com/

Insurance protection funds in the European Union—Quo Vadis?. Monkiewicz, Marek - 18 pages. [RKN: 73822]
Shelved at: JOU
Risk Management and Insurance Review (2012) **15 (1)** : 89-106.
Contrary to the development in other major insurance markets in the world only 13 out of 27 EU member states have introduced until now some type of insurance protection funds (IPF). As a result around a third of the market is without any collective protection. There is also a continuous debate since 2001 among the member states on the need for such a system at the community level. The experiences of the latest financial crisis have raised new arguments for reorganizing the existing system to avoid regulatory arbitrage and to strengthen consumer security. Even the prospective implementation of provisions strengthening supervisory bodies, and the new solvency directive (so-called Solvency II) are not fail-safe solutions. This article is an attempt to review the current situation as regards IPF in the EU and to discuss possible development scenarios.
http://www.openathens.net

EVALUATION

Evaluation of the Basel VaR-based market risk charge and proposals for a needed adjustment. Fricke, Jens; Pauly, Ralf [RKN: 45848]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(4)** : 398-420.

This analysis shows that in high risk situations the Basel II guidelines fail in the attempt to cushion against large losses by higher capital requirements. One of the factors causing this problem is that the built-in positive incentive of the penalty factor resulting from the Basel backtesting is set too weak. Therefore, this paper proposes a new procedure for market risk regulation and it demonstrates how this works with real time series. A comparison study shows that contrary to the existing Basel regulation the proposition presented here has the intended quality as a built-in incentive for choosing a reliable forecasting model. By including the expected shortfall as a further measure of risk this paper's concept yields a steeper increase of the penalty factor and as a consequence a stronger effect of risk underestimation on the capital requirement. The recent proposal of the Basel Committee on Banking Supervision may have the same weakness as the Basel II regulation because it is constructed in an analogous manner. http://www.openathens.net

EXECUTIVES

Transferring knowledge of risk management to the board of directors and executives. Rodriguez, Eduardo; Edwards, John S [RKN: 45694]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 162-180.

Enterprise risk management (ERM) and knowledge management (KM) both encompass top-down and bottom-up approaches developing and embedding risk knowledge concepts and processes in strategy, policies, risk appetite definition, the decision-making process and business processes. The capacity to transfer risk knowledge affects all stakeholders and understanding of the risk knowledge about the enterprise's value is a key requirement in order to identify protection strategies for business sustainability. There are various factors that affect this capacity for transferring and understanding. Previous work has established that there is a difference between the influence of KM variables on risk control and on the perceived value of ERM. Communication among groups appears as a significant variable in improving risk control but only as a weak factor in improving the perceived value of ERM. The ERM mandate, however, requires for its implementation a clear understanding of risk management (RM) policies, actions and results, and the use of the integral view of RM as a governance and compliance programme to support the value-driven management of the organisation. Furthermore, ERM implementation demands better capabilities for unification of the criteria of risk analysis, alignment of policies and protection guidelines across the organisation. These capabilities can be affected by risk knowledge sharing between the RM group and the board of directors and other executives in the organisation. This research presents an exploratory analysis of risk knowledge transfer variables used in risk management practice. A survey to risk management executives from 65 firms in various industries was undertaken and 108 answers were analysed. Potential relationships among the variables are investigated using descriptive statistics and multivariate statistical models. The level of understanding of risk management policies and reports by the board is related to the quality of the flow of communication in the firm and perceived level of integration of the risk policy in the business processes.

EXPECTED UTILITY

Corporate management of highly dynamic risks: : Evidence from the demand for terrorism insurance in Germany. Thomann, Christian; Pascalau, Razvan; von der Schulenburg, J Mattias Graf - 26 pages. [RKN: 74942]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (1)** : 57-82.

This paper investigates a corporation's risk management response to highly dynamic risks. Using a unique data set on the German terrorist insurance market, the paper tests whether corporate risk managers have a clear understanding of the probability distribution of highly dynamic risks or if risk managers learn from severe losses and base their decisions upon day-to-day experience. The paper further investigates whether risk managers become more confident in their risk management decisions over time. For this purpose, we apply Viscusi's prospective reference theory to a corporate context. We find that firms learn from single events when making their risk management decisions, and that risk managers become more confident with their risk management decisions over time.

EXPERIMENTS, DESIGN OF

Experts in experiments. How selection matters for estimated distributions of risk preferences. von Gaudecker, Hans-Martin; van Soest, Arthur; Wengström, Erik Springer, [RKN: 45875]
Shelved at: Per: JRU (Oxf)
Journal of Risk and Uncertainty (2012) **45(2)** : 159-190.

An ever-increasing number of experiments attempts to elicit risk preferences of a population of interest with the aim of calibrating parameters used in economic models. We are concerned with two types of selection effects, which may affect the external validity of standard experiments: Sampling from a narrowly defined population of students ("experimenter-induced selection") and self-selection due to non-response or incomplete response of participants in a random sample from a broad population. We find that both types of selection lead to a sample of experts: Participants perform significantly better than the general population, in the sense of fewer violations of revealed preference conditions. Self-selection within a broad population does not seem to matter for average preferences. In contrast, sampling from a student population leads to lower estimates of average risk aversion and loss aversion parameters. Furthermore, it dramatically reduces the amount of heterogeneity in all parameters.

EXPOSURE TO RISK

General wrong-way risk and stress calibration of exposure. Pykhtin, Michael [RKN: 45708]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 234-251.

A conceptually sound method of incorporating general wrong-way risk (WWR) into the asymptotic single risk factor (ASRF) framework that underlies Basel capital rules is shown in the first part of this paper. An algorithm is presented that converts the unconditional distribution of netting-set-level exposure generated by an arbitrary Monte Carlo simulation process to an exposure at default (EAD) measure that consistently incorporates general WWR under the ASRF framework. The conversion is done at a counterparty level via a simple closed-form function of a single parameter that controls the strength of general WWR. The second part of the paper analyses the Basel III requirement that, in addition to normal calibration, banks' credit exposure models must be calibrated to a period of stress. Basel III justified the introduction of stress calibration by the need for capturing general WWR. However, it is argued that stress calibration of exposure does not address general WWR adequately. Simple examples are used to show that EADs obtained with stress calibration for a benign period will severely overstate not only the EAD seen in that benign period, but also the EAD seen in the stressed period.

EXTREME VALUE THEORY

Second-order properties of the Haezendonck-Goovaerts risk measure for extreme risks. Mao, Tiantian; Hu, Taizhong [RKN: 44792]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **51(2)** : 333-343.

The Haezendonck–Goovaerts risk measure is based on the premium calculation principle induced by an Orlicz norm, which is defined via an increasing and convex Young function and a parameter q[symbol](0,1) representing the confidence level. In this paper, we first reestablish the first-order expansions of the Haezendonck-Goovaerts risk measure for extreme risks with a power Young function in Q Tang and F Yang (2012) [On the Haezendonck-Goovaerts risk measure for extreme risks, Insurance: Mathematics and Economics, 50 (2012), pp. 217–227] in terms of the tail quantile function. Second, we are interested in the calculation of the second-order expansions of the Haezendonck-Goovaerts risk measure as q[symbol]1. We only consider the case in which the risk variable belongs to the max-domain of attraction of an extreme value distribution.
http://www.openathens.net/

FINANCE

OTC central counterparty clearing : Myths and reality. Milne, Alistair [RKN: 45715]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 335-346.

This paper discusses the costs and benefits of introducing central counterparty clearing (CCP) in 'over-the-counter' (OTC) derivative markets. It argues: (i) that the costs are not so large as some commentary has suggested, at least provided that mandatory clearing is applied only to widely traded standardised contracts; (ii) that the key economic benefits of having CCP clearing do not come from reduction of counterparty credit risk (firms are perfectly capable of doing this on their own) — it is instead improved oversight of market participants and the coordinated management of open positions following the failure of a systemically important financial institution, ie the management of default in a systemic crisis; (iii) because these benefits are public goods some policy intervention is appropriate to encourage a suitable level of adoption of CCP clearing; and finally (iv) that the 'rule based' approach to CCP clearing of OTC contracts required by Dodd–Frank has become diverted into an inappropriate focus on the precise requirements for mandatory clearing. Instead a more flexible approach can achieve an appropriate balance between reduced systemic financial risk and the compliance burden on firms.

FINANCIAL CRISES

Corporate governance failures : The role of institutional investors in the global financial crisis. Hawley, James; Kamath, Shyam; Williams, Andrew (2011). - Philadelphia: University of Pennsylvania Press, 2011. - 344 pages. [RKN: 73678]
Shelved at: 330.9

Corporate governance, the internal policies and leadership that guide the actions of corporations, played a major part in the recent global financial crisis. While much blame has been targeted at compensation arrangements that rewarded extreme risk-taking but did not punish failure, the performance of large, supposedly sophisticated institutional investors in this crisis has gone for the most part unexamined. Shareholding organizations, such as pension funds and mutual funds, hold considerable sway over the financial industry from Wall Street to the City of London. Corporate Governance Failures: The Role of Institutional Investors in the Global Financial Crisis exposes the misdeeds and lapses of these institutional investors leading up to the recent economic meltdown.

Did anyone learn anything from the Equitable Life? Lessons and learning from financial crises. Roberts, Richard (2012). - London: Kings College London, 2012. [RKN: 43542]
Shelved at: Online only

http://www.equitable.co.uk/media/32351/king's%20final%20report07092012final.pdf

The effects and risks of quantitative easing. Mortimer-Lee, Paul [RKN: 45846]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(4)** : 372-389.

Quantitative easing (QE) comes in many forms, each tailored to the specific needs of the region in question. What they all have in common, though, is that they are the result of the failure of conventional policy to deliver the outcomes policymakers want. There are many risks associated with unconventional tools such as QE and a number of drawbacks. But central banks around the world have taken risks with the future in a bid to avoid adverse consequences today or tomorrow. They hope that by the time QE draws to an end, they, the markets, the financial system and the wider economy will be able to manage those risks effectively. Whether they can remains to be seen.
http://www.openathens.net

Fallacy of moving the OTC derivatives market to CCPs : Comment. Singh, Manmohan [RKN: 45713]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 314-318.

Recent regulatory efforts, especially in the USA and Europe, are aimed at reducing moral hazard so that the next financial crisis is not bailed out by tax payers. This paper suggests that the regulatory proposals may not remove systemic risk from over-the-counter (OTC) derivatives but rather shift it from banks to central counterparties (CCPs). Furthermore, another taxpayer bailout cannot be ruled out. This paper also suggests that a tax on the derivative liabilities of large banks would address the source of the problem (ie under-collateralisation), and make the OTC derivatives market safer. We also show that, as a by-product, this suggestion would lower CDS spreads in distressed sovereigns.

Insurance, systemic risk and the financial crisis. Baluch, Faisal; Mutenga, Stanley; Parsons, Chris Palgrave Macmillan, [RKN: 39984]
Shelved at: Per: Geneva (Oxf)
Geneva Papers on Risk and Insurance (2011) **36(1)** : 126-163.

Available online via Athens
In this paper we assess the impact of the financial crisis on insurance markets and the role of the insurance industry in the crisis itself. We examine some previous “insurance crises” and consider the effect of the crisis on insurance risk—the liabilities arising from contracts that insurers underwrite. We then analyse the effects of the crisis on the performance of insurers in different markets and assess the extent of systemic risk in insurance. We conclude that, while systemic risk remains lower in insurance than in the banking sector, it is not negligible and has grown in recent years, partly as a consequence of insurers’ increasing links with banks and their recent focus on non-(traditional) insurance activities, including structured finance. We conclude by considering the structural changes in the insurance industry that are likely to result from the crisis, including possible effects on “bancassurance” activity, and offer some thoughts on changes in the regulation of insurance markets that might ensue.
http://www.openathens.net

Is the build-up of TARGET2 balances a question of self-contained risk?. Ulbrich, Jens; Lipponer, Alexander [RKN: 45847]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(4)** : 390-397.

This paper argues that imbalances in the TARGET2 payment system are a symptom of the current financial crisis and not subject to self-contained risk. Any risk for the Eurosystem ultimately arises from liquidity provision and not from the redistribution of pre-existing liquidity. If the risk element is to be reduced, the extraordinary monetary policy measures of the Eurosystem will have to be addressed and reversed as soon as possible. Especially in a monetary union of sovereign member states it cannot be the task of an independent monetary policy to reallocate solvency risks among taxpayers across the currency area. Therefore, the role of the Eurosystem in tackling the current crisis should not be overstretched. At the end of the day, it is up to the member countries and not the central banks to resolve the crisis.
http://www.openathens.net

Legal and regulatory update : Global identification standards for counterparties and other financial market participants. Grody, Allan D; Hughes, Peter J; Reininger, Daniel [RKN: 45711]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 288-304.

Financial regulators are focused on observing systemic risk across enormously complex interconnected global financial institutions. It is understood that without an ability to view the underlying positions and cash flows, valued in standard ways and aggregated by counterparty through common identifiers, neither risk triggers nor risk exposures can be observed nor can systemic threats be detected. It has been accepted by regulators that the very first pillar of global financial reform is a standard for identifying the same financial market participant to each regulator in the same way. Getting agreement on a globally unique and standardised legal entity identifier (the LEI) is the first step. This paper reports on past and current efforts to develop a global identification system for such a purpose. The authors argue for a government/industry partnership in which governance is shared and operating elements of the global identification system are compartmentalised for control, security and confidentiality purposes. The paper demonstrates a proposed global identification system that satisfies all known elements of regulators' requirements for the LEI and also lays the foundation for accommodating other attributes, such as business ownership hierarchical structures and contract and instrument identification.

Systemic risk in financial services : A discussion paper. Besar, D; Booth, Philip M; Chan, K K; Milne, Alistair; Pickles, J (2009). 2009. [RKN: 71955]
Shelved at: ifp 12/09 (Strg box SI Ref 5) ifp 12/09 (Lon) Shelved at: JOU/INS
BAJ (2011) **16(2)** : 195-300.

The current banking crisis has reminded us of how risks materialising in one part of the financial system can have a widespread impact, affecting other financial markets and institutions and the broader economy. This paper, prepared on behalf of the Actuarial Profession, examines how such events have an impact on the entire financial system and explores whether such disturbances may arise within the insurance and pensions sectors as well as within banking. The paper seeks to provide an overview of a number of banking and other financial crises which have occurred in the past, illustrated by four cases studies. It discusses what constitutes a systemic event and what distinguishes it from a large aggregate system wide shock. Finally, it discusses how policy makers can respond to the risk of such systemic financial failures.

Keywords: Banking Crisis; Financial Crisis; Global Financial Crisis; Financial Deregulation; Credit Cycle; Governance; Control Mechanisms; Systemic Risk; Financial Infrastructure; Payment Systems; Short Term Funding Markets; Collateral Exposure; Securities; Derivatives; Counterparty Risk; Recession; Pension System
http://www.actuaries.org.uk/research-and-resources/documents/systemic-risk-financial-services

Systemic risk in financial services. Besar, D; Booth, P; Chan, K K; Milne, A K L; Pickles, J - 106 pages. [RKN: 74795]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 195-300.

The current banking crisis has reminded us of how risks materialising in one part of the financial system can have a widespread impact, affecting other financial markets and institutions and the broader economy. This paper, prepared on behalf of the Actuarial Profession, examines how such events have an impact on the entire financial system and explores whether such disturbances may arise within the insurance and pensions sectors as well as within banking. The paper seeks to provide an overview of a number of banking and other financial crises which have occurred in the past, illustrated by four case studies. It discusses what constitutes a systemic event and what distinguishes it from a large aggregate system wide shock. Finally, it discusses how policy-makers can respond to the risk of such systemic financial failures.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Systemic risk in financial services : Abstract of the London discussion on the preceding. Milne, A K L - 19 pages. [RKN: 74796]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 301-319.

This discussion relates to the following paper:
D. Besar, P. Booth, K.K. Chan, A.K.L. Milne & J. Pickles Systemic risk in financial services. British Actuarial Journal Vol 16 No 2
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Systemic risk in financial services : Abstract of the Edinburgh discussion on the preceding. Milne, A K L - 20 pages. [RKN: 74797]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 321-340.

This discussion relates to the following paper:
D. Besar, P. Booth, K.K. Chan, A.K.L. Milne & J. Pickles Systemic risk in financial services. British Actuarial Journal Vol 16 No 2
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

FINANCIAL EDUCATION

An empirical analysis of the effect of financial education on graduating business students' perceptions of their retirement planning familiarity, motivation, and preparedness. Power, Mark L; Hobbs, Jonathan M; Ober, Ashley - 17 pages. [RKN: 74771]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (1)** : 89-105.

Today's multifaceted and dynamic financial environment requires a high level of individual financial literacy to ensure that sound financial behaviors are the norm. Unfortunately, many individuals have limited knowledge regarding financial issues and are ill prepared to make sound financial choices. The purpose of this article was to benchmark and then determine if graduating business students' perception of their retirement planning familiarity, motivation, and preparedness improved after taking a semester-long course in Personal Risk Management and Insurance (PRMI). We discovered that business students were more financially literate than nonbusiness students and that business students' familiarity with retirement plans and personal level of readiness to make retirement planning decisions improved significantly after taking the principles class. Specifically, we showed that only 15.8 percent and 42.3 percent of the nonbusiness and business control students, respectively, felt adequately prepared to make retirement decisions, while 82 percent of the business students who completed the PRMI class felt prepared. Ex post, graduating seniors who were exposed to coursework covering life-cycle risks and options to treat those risks perceived that they are leaving college with a better ability to meet the financial challenges that await them. Last, we showed that significant differences existed in retirement plan and investment familiarity based on gender. Our findings provide support for including financial literacy as a general education requirement at colleges and universities.
http://www.openathens.net

FINANCIAL INSTITUTIONS

Financial enterprise risk management. Sweeting, Paul (2011). - Cambridge: Cambridge University Press, 2011. - xii, 551 pages. [RKN: 45449]
Shelved at: UHG/AA/EC (Lon) Shelved at: 332.6

Financial Enterprise Risk Management provides all the tools needed to build and maintain a comprehensive ERM framework. As well as outlining the construction of such frameworks, it discusses the internal and external contexts within which risk management must be carried out. It also covers a range of qualitative and quantitative techniques that can be used to identify, model and measure risks, and describes a range of risk mitigation strategies. Over 100 diagrams are used to help describe the range of approaches available, and risk management issues are further highlighted by various case studies. A number of proprietary, advisory and mandatory risk management frameworks are also discussed, including Solvency II, Basel III and ISO 31000:2009.
http://www.myilibrary.com?id=334223&Ref=Athens

The new model of governance and risk management for financial institutions. Bugalla, John; Kallman, James; Lindo, Steve; Narvaez, Kristina [RKN: 45695]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 181-193.

The paper proposes a new model of governance and risk management consisting of four components: (i) board risk oversight

responsibilities, (ii) a board level risk committee, (iii) an executive risk committee and (iv) an individual with responsibility for overall risk management. Some companies are subject to the Dodd–Frank Act and are forming a stand-alone risk committee; other companies still have the option of adopting these best practices. The paper contends that the new model promotes greater risk disclosure, the audit committee should complement the risk management committee, the board level risk committee should have an independent member with extensive risk management experience, the board should develop a clear risk position, management should form an executive risk committee, have a chief risk officer, create an internal risk intelligence function and, if these are done, institutions will enjoy higher stock prices.

Quantification of central counterparty risk. Arnsdorf, Matthias [RKN: 45710]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 273-287.

A clearing member of a central counterparty (CCP) is exposed to losses on their guarantee fund and initial margin contributions. Such losses can be incurred whenever the CCP has insufficient funds to unwind the portfolio of a defaulting clearing member. This does not necessarily require the default of the CCP itself. In this paper the aim is to quantify the risk a financial institution has when facing a CCP. It is shown that a clearing member's CCP risk is given by a sum of exposures to each of the other clearing members. This arises because of the implicit default insurance that each member has provided in the form of mutualised, loss sharing collateral. The exposures are calculated by explicitly modelling the capital structure of a CCP as well as the loss distributions of the individual member portfolios. An important consideration in designing the model is the limited transparency with respect to the portfolio composition and collateral levels of individual clearing members. To overcome this the fact is leveraged that, for a typical CCP, margin levels are risk based. In particular, the portfolio loss tail as a Pareto distribution is parameterised and this is calibrated to the CCP defined probability of losses exceeding the posted initial margin levels. A key aspect of the model is that wrong-way risk is explicitly taken into account, ie the fact that member defaults are more likely to occur in stressed market conditions, as well as potential contagion between a member's default and the losses on his portfolio.

FINANCIAL MARKETS

Legal and regulatory update : Global identification standards for counterparties and other financial market participants. Grody, Allan D; Hughes, Peter J; Reininger, Daniel [RKN: 45711]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 288-304.

Financial regulators are focused on observing systemic risk across enormously complex interconnected global financial institutions. It is understood that without an ability to view the underlying positions and cash flows, valued in standard ways and aggregated by counterparty through common identifiers, neither risk triggers nor risk exposures can be observed nor can systemic threats be detected. It has been accepted by regulators that the very first pillar of global financial reform is a standard for identifying the same financial market participant to each regulator in the same way. Getting agreement on a globally unique and standardised legal entity identifier (the LEI) is the first step. This paper reports on past and current efforts to develop a global identification system for such a purpose. The authors argue for a government/industry partnership in which governance is shared and operating elements of the global identification system are compartmentalised for control, security and confidentiality purposes. The paper demonstrates a proposed global identification system that satisfies all known elements of regulators' requirements for the LEI and also lays the foundation for accommodating other attributes, such as business ownership hierarchical structures and contract and instrument identification.

FINANCIAL RISK ANALYSIS

Longevity risk. McWilliam, Emma (2011). - London: Risk Books, 2011. - xxiv, 355 p. pages. [RKN: 45091]
Shelved at: EEQ Shelved at: 368.01

books@incisivemedia.com

Around the world, a structural shift in demographics is taking place: people are living longer. While an increasing number of people look forward to retirement the implication for firms, funds and governments with hundreds of billions of dollars in defined benefit pension scheme liabilities is clear: a heightened risk of larger payouts. This is longevity risk. This book presents methods to price and measure longevity risk and ways to hedge/de-risk through a range of traditional insurance, reinsurance and innovative capital market solutions.

Roads to ruin: a study of major risk events: their origins, impact and implications. Atkins, Derek; Fitzsimmons, Anthony; Parsons, Chris; Punter, Alan (2012). - London: Airmic, 2012. - [3], 183, [1] pages. [RKN: 43527]
Shelved at: AZA/BYF/BYG/EEQ (Lon)

'A report by Cass Business School on behalf of Airmic sponsored by Crawford and Lockton' - t.p.

Systemic risk in financial services. Besar, D; Booth, P; Chan, K K; Milne, A K L; Pickles, J - 106 pages. [RKN: 74795]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 195-300.

The current banking crisis has reminded us of how risks materialising in one part of the financial system can have a widespread impact, affecting other financial markets and institutions and the broader economy. This paper, prepared on behalf of the Actuarial Profession, examines how such events have an impact on the entire financial system and explores whether such disturbances may arise within the insurance and pensions sectors as well as within banking. The paper seeks to provide an overview of a number of banking and other financial crises which have occurred in the past, illustrated by four case studies. It discusses what constitutes a systemic event and what distinguishes it from a large aggregate system wide shock. Finally, it discusses how policy-makers can respond to the risk of such systemic financial failures.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Systemic risk in financial services : Abstract of the London discussion on the preceding. Milne, A K L - 19 pages. [RKN: 74796]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 301-319.

This discussion relates to the following paper:
D. Besar, P. Booth, K.K. Chan, A.K.L. Milne & J. Pickles Systemic risk in financial services. British Actuarial Journal Vol 16 No 2
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Systemic risk in financial services : Abstract of the Edinburgh discussion on the preceding. Milne, A K L - 20 pages. [RKN: 74797]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 321-340.

This discussion relates to the following paper:
D. Besar, P. Booth, K.K. Chan, A.K.L. Milne & J. Pickles Systemic risk in financial services. British Actuarial Journal Vol 16 No 2
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

FINANCIAL SERVICES

Systemic risk in financial services : A discussion paper. Besar, D; Booth, Philip M; Chan, K K; Milne, Alistair; Pickles, J (2009). 2009. [RKN: 71955]
Shelved at: ifp 12/09 (Strg box SI Ref 5) ifp 12/09 (Lon) Shelved at: JOU/INS
BAJ (2011) **16(2)** : 195-300.

The current banking crisis has reminded us of how risks materialising in one part of the financial system can have a widespread impact, affecting other financial markets and institutions and the broader economy. This paper, prepared on behalf of the Actuarial Profession, examines how such events have an impact on the entire financial system and explores whether such disturbances may arise within the insurance and pensions sectors as well as within banking. The paper seeks to provide an overview of a number of banking and other financial crises which have occurred in the past, illustrated by four cases studies. It discusses what constitutes a systemic event and what distinguishes it from a large aggregate system wide shock. Finally, it discusses how policy makers can respond to the risk of such systemic financial failures.
Keywords: Banking Crisis; Financial Crisis; Global Financial Crisis; Financial Deregulation; Credit Cycle; Governance; Control Mechanisms; Systemic Risk; Financial Infrastructure; Payment Systems; Short Term Funding Markets; Collateral Exposure; Securities; Derivatives; Counterparty Risk; Recession; Pension System
http://www.actuaries.org.uk/research-and-resources/documents/systemic-risk-financial-services

FOREIGN EXCHANGE

Editorial : FX : The clearing conundrum. Maguire, Frances; Bessis, Joel [RKN: 45845]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(4)** : 356-358.

http://www.openathens.net

FORMULAE

The Solvency II square-root formula for systematic biometric risk. Christiansen, Marcus C; Denuit, Michel M; Lazar, Dorina [RKN: 45599]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **50 (2)** : 257-265.

In this paper, we develop a model supporting the so-called square-root formula used in Solvency II to aggregate the modular life SCR. Describing the insurance policy by a Markov jump process, we can obtain expressions similar to the square-root formula in Solvency II by means of limited expansions around the best estimate. Numerical illustrations are given, based on German population data. Even if the square-root formula can be supported by theoretical considerations, it is shown that the QIS correlation matrix is highly questionable.
http://www.openathens.net/

FRAUD

Estimating JP Morgan Chase's profits from the Madoff deposits. Davis, Louis R; Wilson, Linus - 13 pages. [RKN: 74702]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (1)** : 107-119.

JP Morgan Chase had deposits from Bernard L. Madoff's investors totaling $5.5 billion at one point in 2008. The Chase account was supposedly where most of the funds in his Ponzi scheme were deposited. Any large deposit can be a considerable source of profit to a bank. Assuming that the deposits returned the bank's net interest margin and grew at a random geometric rate, this article estimates that JP Morgan Chase generated $435 million in after-tax profits from this very large account over the course of 16 years. With JP Morgan Chase the target of pending lawsuits relating to the Madoff fraud, this article's methodology and results may be of interest to litigants, prosecutors, journalists, and academics.
http://www.openathens.net

GENERAL INSURANCE

Do U.S. insurance firms offer the "wrong" incentives to their executives?. Milidonis, Andreas; Stathopoulos, Konstantinos - 30 pages. [RKN: 74868]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2011) **78 (3)** : 643–672.

Available online via Athens

We examine the relation between executive compensation and market-implied default risk for listed insurance firms from 1992 to 2007. Shareholders are expected to encourage managerial risk sharing through equity-based incentive compensation. We find that long-term incentives and other share-based plans do not affect the default risk faced by firms. However, the extensive use of stock options leads to higher future default risk for insurance firms. We argue that this is because option-based incentives induce managerial risk-taking behavior, which seeks to maximize managerial payoff through equity volatility. This could be detrimental to the interests of shareholders, especially during a financial crisis.

http://www.openathens.net

An empirical examination of stakeholder groups as monitoring sources in corporate governance . Cole, Cassandra R; He, Enya; McCullough, Kathleen A; Semykina, Anastasia; Sommer, David W - 28 pages. [RKN: 74870]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2011) **78 (3)** : 703-730.

Available online via Athens

Insurers are formally and informally monitored by a variety of stakeholders, including reinsurers, agents, outside board members, and regulators. While other studies have generally examined these stakeholders separately, they have not accounted for the fact that there is some relation among the stakeholder groups, and the presence of these groups is likely to be jointly determined. By empirically controlling for these potential interrelations, we create a more complete assessment of the impact of these stakeholders/monitors on insurers' risk taking. Specifically, we find that the presence of some stakeholders offsets the degree or presence of others, and that most stakeholders/monitors are associated with a reduction of overall firm risk.

http://www.openathens.net

Institutional ownership stability and risk taking: evidence from the life–health insurance industry. Cheng, Jiang; Elyasiani, Elyas; Jia, Jingyi - 33 pages. [RKN: 74867]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2011) **78 (3)** : 609–641.

Available online via Athens

We investigate the relationship between risk taking of life–health (LH) insurers and stability of their institutional ownership within a simultaneous equation system model. Three main results are obtained. First, stable institutional ownership of is associated with lower total risk of LH insurers, supporting the prudent-man law hypothesis. Second, when investors are sorted in terms of stringency of the prudent-man restrictions, their negative effect on risk holds for all, except insurance companies, as owners of LH insurers. Third, large institutional owners do not raise the riskiness of the investee-firms, as proposed by the large shareholder hypothesis. Regulatory implications are drawn.

http://www.openathens.net

Optimal brokerage commissions for fair insurance: a first order approach. Hau, Arthur - 13 pages. [RKN: 74789]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (2)** : 189-201.

This paper studies a principal-agent insurance brokerage problem with a risk-averse principal (an insured) and a risk-neutral agent (a broker). The concept of "mean-preserving, spread-reducing" (MPSR) effort is introduced to model the broker's activities. Using the first-order approach, it is shown that under some common conditions, the insured may "concavify" the reward function to induce the risk-neutral agent to exert MPSR brokering effort. These conditions, together with an additional condition, guarantee the validity of the first-order approach even when the monotone likelihood ratio condition (used exclusively to justify the first-order approach) is violated.

Risk aversion, downside risk aversion and paying for stochastic improvements. Chiu, W Henry - 27 pages. [RKN: 74940]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (1)** : 1-26.

This paper considers the relationship between risk preferences and the willingness to pay for stochastic improvements. We show that if the stochastic improvement satisfies a double-crossing condition, then a decision maker with utility v is willing to pay more than a decision maker with utility u, if v is both more risk averse and less downside risk averse than u. As the condition always holds in the case of self-protection, the result implies novel characterizations of individuals' willingness to pay to reduce the probability of loss. By establishing a general result on the correspondence between an individual's willingness to pay, and his optimal purchase of stochastic improvement when there is a given relationship between stochastic improvements and the amount paid for them, we further show that all results on the willingness to pay can be applied directly to characterize the conditions under which a more risk averse individual will optimally choose to buy more stochastic improvement. Generalizations of existing results on optimal choice of self-protection can be obtained as corollaries.

Risk management for insurers : Risk control, economic capital and Solvency II. Doff, René (2011). - 2nd ed. - London: Risk Books, 2011. - xi, 322 pages. [RKN: 45485]
Shelved at: BX/BXP/BUG (Lon) Shelved at: 519.287

All over the globe insurers are facing the impact of the turmoil on the financial markets, making it more crucial than ever to fully understand how to implement risk management best practice. In this timely second edition, industry expert René Doff argues that Solvency II, which aims to improve standards of risk assessment, should be regarded as an opportunity. Solvency II will provide incentives for insurance companies to improve their risk management systems and will allow you to benefit from the risk management efforts in the context of supervision.

Risk modelling in general insurance: from principles to practice. Gray, Roger J; Pitts, Susan M (2012). - Cambridge: Cambridge University Press for the Institute of Actuaries and the Faculty of Actuaries, 2012. - xiv, 393 pages. [RKN: 45763]
Shelved at: BX/UHG (Lon) Shelved at: 368.01

Final publication following proof copy.

Knowledge of risk models and the assessment of risk is a fundamental part of the training of actuaries and all who are involved in financial, pensions and insurance mathematics. This book provides students and others with a firm foundation in a wide range of statistical and probabilistic methods for the modelling of risk, including short term risk modelling, model based pricing, risk sharing, ruin theory and credibility.

Statistical tools for finance and insurance. Cizek, Pavel; Hardle, Wolfgang Karl; Weron, Rafal (2011). - 2nd ed. - London: Springer, 2011. - 420 pages. [RKN: 73685]
Shelved at: 519.5

Statistical Tools for Finance and Insurance presents ready-to-use solutions, theoretical developments and method construction for many practical problems in quantitative finance and insurance. Written by practitioners and leading academics in the field, this book offers a unique combination of topics from which every market analyst and risk manager will benefit. Features of the significantly enlarged and revised second edition: Offers insight into new methods and the applicability of the stochastic technologyProvides the tools, instruments and (online) algorithms for recent techniques in quantitative finance and modern treatments in insurance calculations. Covers topics such as - expected shortfall for heavy tailed and mixture distributions* - pricing of variance swaps* - volatility smile calibration in FX markets - pricing of catastrophe bonds and temperature derivatives* - building loss models and ruin probability approximation - insurance pricing with GLM* - equity linked retirement plans* (new topics in the second edition marked with*) Presents extensive examples

The value of enterprise risk management. Hoyt, Robert E; Liebenberg, Andre P - 28 pages. [RKN: 74873]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2011) **78 (4)** : 795–822.

Available online via Athens

Enterprise risk management (ERM) has been the topic of increased media attention in recent years. The objective of this study is to measure the extent to which specific firms have implemented ERM programs and, then, to assess the value implications of these programs. We focus our attention in this study on U.S. insurers in order to control for differences that might arise from regulatory and market differences across industries. We simultaneously model the determinants of ERM and the effect of ERM on firm value. We estimate the effect of ERM on Tobin's Q, a standard proxy for firm value. We find a positive relation between firm value and the use of ERM. The ERM premium of roughly 20 percent is statistically and economically significant.

http://www.openathens.net

GENERALISED LINEAR MODELS

On the importance of dispersion modeling for claims reserving: an application with the Tweedie distribution. Boucher, Jean-Philippe; Davidov, Danail [RKN: 43605]
Shelved at: Per: Variance
Variance (2011) **5(2)** : 158-172.

We consider Tweedie's compound Poisson model in a claims reserving triangle in a generalized linear model framework. We show that there exist practical situations where the variance, as well as the mean of the costs, needs to be modeled. We optimize the likelihood function through either direct optimization or through double generalized linear models (DGLM). We also enhance the estimation of the variance parameters within the DGLM by using the restricted maximum likelihood (REML). Having a flexible variance structure allows the model to replicate the underlying risk more appropriately and shrinks the gap between the predicted variances of different models.

http://www.variancejournal.org/issues

GENETICS

Ambiguity aversion and familiarity bias : Evidence from behavioral and gene association studies. Chew, Soo Hong; Ebstein, Richard P; Zhong, Songfa Springer, [RKN: 45591]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **44 (1)** : 1-18.

It is increasingly recognized that decision making under uncertainty depends not only on probabilities, but also on psychological factors such as ambiguity and familiarity. Using 325 Beijing subjects, we conduct a neurogenetic study of ambiguity aversion and familiarity bias in an incentivized laboratory setting. For ambiguity aversion, 49.4% of the subjects choose to bet on the 50–50 deck despite the unknown deck paying 20% more. For familiarity bias, 39.6% choose the bet on Beijing's temperature rather than the corresponding bet with Tokyo even though the latter pays 20% more. We genotype subjects for anxiety-related candidate genes and find a serotonin transporter polymorphism being associated with familiarity bias, but not ambiguity aversion, while the dopamine D5 receptor gene and estrogen receptor beta gene are associated with ambiguity aversion only among female subjects. Our findings contribute to understanding of decision making under uncertainty beyond revealed preference.

GERMANY

Is there market discipline in the European insurance industry? : An analysis of the German insurance market. Eling, Martin; Schmit, Joan T - 28 pages. [RKN: 70262]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (2)** : 180-207.

Economists often argue in favour of market discipline as a means to distribute resources effectively and efficiently. These same arguments likely influence decision-makers as they incorporate market discipline as the third pillar of Solvency II, the European insurance regulatory scheme currently being implemented. Success for Solvency II, then, is dependent in part on the strength of influence found in market discipline. Our research indicates that the German insurance market demonstrates the existence of such discipline, although the actual effect appears smaller than previously found in the U.S. insurance market. Solvency II, therefore, seems to be following an appropriate path, although further research is needed to evaluate whether or not enhancements to market discipline within the European market are warranted.

GOVERNANCE

The governance of value(s). Koenig, David R [RKN: 45696]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 194-210.

Based on excerpts from Governance Reimagined: Organizational Design, Risk and Value Creation, to be published by John Wiley & Sons, May 2012, the author explores the relationship between value and the pursuit of values with a specific focus on the role that resiliency plays in our ability to be successful in creating value. Psychological influences such as loss avoidance are greatly underappreciated and forms of corporate governance like network governance can play an important role in minimising the impact of these factors, along with enhancing the ability of organisations to create value.

The new model of governance and risk management for financial institutions. Bugalla, John; Kallman, James; Lindo, Steve; Narvaez, Kristina [RKN: 45695]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 181-193.

The paper proposes a new model of governance and risk management consisting of four components: (i) board risk oversight responsibilities, (ii) a board level risk committee, (iii) an executive risk committee and (iv) an individual with responsibility for overall risk management. Some companies are subject to the Dodd–Frank Act and are forming a stand-alone risk committee; other companies still have the option of adopting these best practices. The paper contends that the new model promotes greater risk disclosure, the audit committee should complement the risk management committee, the board level risk committee should have an independent member with extensive risk management experience, the board should develop a clear risk position, management should form an executive risk committee, have a chief risk officer, create an internal risk intelligence function and, if these are done, institutions will enjoy higher stock prices.

GRADUATION

A local likelihood approach to univariate graduation of mortality. Tomas, Julien [RKN: 43466]
Shelved at: online only
Bulletin Français d'Actuariat (2011) **11 (no.22)** : 105-153.

The present article extends the theory of graduation by non-parametric methods to include situations where the response variable is not assumed to be approximatively Gaussian. We investigate the extension of the non-parametric regression technique of local polynomials to localized generalized linear models and local likelihood contexts. Local likelihood is introduced as a method of smoothing by local polynomials in non-Gaussian regression models. Two examples will be used. The applications cover the graduation of both the probability of death, and the force of mortality over the entire age range. We provide an unified method for constructing pointwise confidence intervals. Graphical tests are used to compare the graduated series obtained by local likelihood with those obtained by the Whittaker-Henderson model.
http://www.institutdesactuaires.com/bfa/

HEALTH INSURANCE

The asymmetric information problem in Taiwan's cancer insurance market. Wang, Kili C; Peng, Jin-Lung; Sun, Yi-Yun; Chang, Yao-Chia - 18 pages. [RKN: 74790]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (2)** : 202-219.

This paper investigates the problem of asymmetric information in Taiwan's cancer insurance market. Through the survey data, we find evidence of adverse selection existing in this market. Furthermore, we collect additional information on the individual, and find that the individual's family cancer history contains additional valuable information. It can not only more accurately predict the probability of contracting cancer, as well as predict the willingness to purchase extended cancer insurance, but it can also help to mitigate the severity of adverse selection in the insurance market.

Disability risk management and post-injury employment of workers with back pain. Johnson, William G; Butler, Richard J; Baldwin, Marjorie L; Côté, Pierre - 21 pages. [RKN: 73820]
Shelved at: JOU
Risk Management and Insurance Review (2012) **15 (1)** : 35-55.

We analyze the outcomes of occupational back pain among four large employers that use one or more of the following disability management practices: aggressive return to work, claims management, medical management, or time-limited job accommodations. Outcomes measured at 6 and 12 months postonset include: duration of initial work absence and the probability of returning to stable employment. Employment outcomes are better in firms with more proactive return-to-work policies than in firms with more restrictive policies. We devise a statistical test for attrition bias and conclude that sample attrition does not significantly alter our results.
http://www.openathens.net

Enterprise risk management for health insurance from an actuarial perspective. Orros, G C; Smith, J - 56 pages. [RKN: 70180]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (2)** : 259-314.

This paper focuses on Enterprise Risk Management (ERM) and strategic business management for health insurance companies in our world of 'unknown unknowns' and the emergence of unexpected risks over time. It illustrates how Chief Risk Officers (CROs) can focus on 'risk and opportunity management' through an ERM framework, and thereby balance risks against opportunities, whilst being resilient against 'unknown unknowns' and their emergence over time as 'known unknowns' and 'known knowns'. The paper has been designed to meet the broad requirements of health insurers that would like to implement an ERM framework for the effective risk management of their health insurance lines of business. Risk management for health insurers in the context of Solvency II and broader European Commission regulatory requirements is also discussed. The authors discuss how insurers can develop and apply risk management to build resilience in the face of the storms and shocks that may lie ahead.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Enterprise risk management for health insurance from an actuarial perspective : Abstract of the London discussion. Orros, G C - 16 pages. [RKN: 70181]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (2)** : 315-330.

London discussion, 18 January 2011.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

HEDGING

Longevity risk. McWilliam, Emma (2011). - London: Risk Books, 2011. - xxiv, 355 p. pages. [RKN: 45091]
Shelved at: EEQ Shelved at: 368.01

books@incisivemedia.com
Around the world, a structural shift in demographics is taking place: people are living longer. While an increasing number of people look forward to retirement the implication for firms, funds and governments with hundreds of billions of dollars in defined benefit pension scheme liabilities is clear: a heightened risk of larger payouts. This is longevity risk. This book presents methods to price and measure longevity risk and ways to hedge/de-risk through a range of traditional insurance, reinsurance and innovative capital market solutions.

(S,s)-adjustment strategies and hedging under Markovian dynamics. Agliardi, Elettra; Andergassen, Rainer - 20 pages. [RKN: 74786]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (2)** : 112-131.

We study the destabilizing effect of hedging strategies under Markovian dynamics with transaction costs. Once transaction costs are taken into account, continuous portfolio rehedging is no longer an optimal strategy. Using a non-optimizing (local in time) strategy for portfolio rebalancing, explicit dynamics for the price of the underlying asset are derived, focusing in particular on excess volatility and feedback effects of these portfolio insurance strategies. Moreover, it is shown how these latter depend on the heterogeneity of the insured payoffs. Finally, conditions are derived under which it may be still reasonable, from a practical viewpoint, to implement Black–Scholes strategies.

Weather risk hedging in the European markets and international investment diversification. Yang, Charles C; Li, Linda Shihong; Wen, Min-Ming [RKN: 45276]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (1)** : 74-94.

This article analyses weather risk hedging efficiency in three European countries using weather derivatives traded at Chicago Mercantile Exchange (CME) and explores the potential of weather derivatives as a new investment asset to further diversify investors' portfolios. The results document that the CME European weather contracts are generally effective in hedging the temperature risk in the three European countries. However, for a specific country, weather risk hedging using other countries' weather indexes is generally not effective. Zero or little correlation among international weather indexes and stock market indexes indicates that weather derivatives should be an efficient investment diversifier. This research provides important insights to both weather risk hedgers and investors.

HISTORY

Did anyone learn anything from the Equitable Life? Lessons and learning from financial crises. Roberts, Richard (2012). - London: Kings College London, 2012. [RKN: 43542]
Shelved at: Online only
http://www.equitable.co.uk/media/32351/king's%20final%20report07092012final.pdf

Preparation is the best defence - Response to R. Fitzherbert, April 2011 : Letter of the month. Thomas, Ian Staple Inn Actuarial Society, - 1 pages. [RKN: 73898]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2011) **June** : 7.
Suggests training for actuaries should include better consideration of periods in history when risk management and modelling failed.
http://www.theactuary.com/

HYPERBOLIC TRANSFORM

Iterative adjustment of survival functions by composed probability distortion. Bienvenue, Alexis; Rullière, Didier - 24 pages. [RKN: 70261]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (2)** : 156-179.
We introduce a parametric class of composite probability distortions that can be combined to converge to a target survival function. These distortions respect analytic invertibility and stability, which are shown to be relevant in many actuarial fields. We study the asymptotic impact of such distortions on hazard rates. The paper provides an estimation methodology, including hints for initialisation. Some applications to survival data bring results for catastrophic event impact modelling. We also obtain accurate parametric representations of the mortality trend over years. Finally, we suggest a prospective mortality simulation model that comes naturally from the above analysis.

IBNR

On the importance of dispersion modeling for claims reserving: an application with the Tweedie distribution. Boucher, Jean-Philippe; Davidov, Danail [RKN: 43605]
Shelved at: Per: Variance
Variance (2011) **5(2)** : 158-172.
We consider Tweedie's compound Poisson model in a claims reserving triangle in a generalized linear model framework. We show that there exist practical situations where the variance, as well as the mean of the costs, needs to be modeled. We optimize the likelihood function through either direct optimization or through double generalized linear models (DGLM). We also enhance the estimation of the variance parameters within the DGLM by using the restricted maximum likelihood (REML). Having a flexible variance structure allows the model to replicate the underlying risk more appropriately and shrinks the gap between the predicted variances of different models.
http://www.variancejournal.org/issues

IFRS

Developments in the management of annuity business. Telford, P G; Browne, B A; Collinge, E J; Fulcher, P; Johnson, B E; Little, W; Lu, J L C; Nurse, J M; Smith, D W; Zhang, F - 81 pages. [RKN: 73860]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (3)** : 471-551.
The focus of the paper is non-profit lifetime annuities in the UK. Annuity insurers have been faced with, or have initiated, an unprecedented amount of change during the last decade, and rapid change is still continuing. We draw out implications for the actuarial management of the business, arising from the evolution of: longevity risk assessment and management, investment strategy and operations, financial reporting, and enterprise risk management. We discuss Solvency II in some technical depth, analysing the proposed rules for technical provisions and solvency capital requirement.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Developments in the management of annuity business : Abstract of the Edinburgh discussion. Telford, Peter - 24 pages. [RKN: 73861]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (3)** : 553-576.
This abstract relates to the following paper:

P.G. Telford, B.A. Browne, E.J. Collinge, P. Fulcher, B.E. Johnson, W. Little, J.L.C. Lu, J.M. Nurse, D.W. Smith & F. Zhang Developments in the Management of Annuity Business. British Actuarial Journal, 16 (3).
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Developments in the management of annuity business : Abstract of the London discussion. Telford, Peter - 23 pages. [RKN: 73862]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (3)** : 577-599.

This abstract relates to the following paper:

P.G. Telford, B.A. Browne, E.J. Collinge, P. Fulcher, B.E. Johnson, W. Little, J.L.C. Lu, J.M. Nurse, D.W. Smith & F. Zhang Developments in the Management of Annuity Business. British Actuarial Journal, 16 (3).
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Developments in the management of annuity business : Abstract of the London discussion-ADDENDUM. Telford, Peter - 2 pages. [RKN: 73960]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (1)** : 256-257.

Institute of Actuaries, 22 March 2010.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

IMPERFECT INFORMATION

Updating beliefs with imperfect signals: Experimental evidence. Poinas, François; Rosaz, Julie; Roussillon, Béatrice Springer, - 23 pages. [RKN: 73972]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **44 (3)** : 219-241.

We conduct an experiment on individual choice under risk in which we study belief updating when an agent receives a signal that restricts the number of possible states of the world. Subjects observe a sample drawn from an urn and form initial beliefs about the urn's composition. We then elicit how beliefs are modified after subjects receive a signal that restricts the set of the possible urns from which the observed sample could have been drawn. We find that this type of signal increases the frequency of correct assessments and that prediction accuracy is higher for lower levels of risk. We also show that prediction accuracy is higher after invalidating signals (i.e. signals that contradict the initial belief). This pattern is explained by the lower level of risk associated with invalidating signals. Finally, we find evidence for a lack of persistence of choices under high risk.
http://www.openathens.net

INFORMATION

Data aggregation and counterparty identification : Considerations for systemic risk analysis. Krishna, Dilip [RKN: 45712]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 305-313.

Systemic risk analysis is now a topic of considerable interest the world over. It requires a combined analysis of the large counterparties in the global economy along with the interactions they have with each other. The availability of a comprehensive and quality dataset is important to systemic risk analysis. This paper discusses the kinds of data potentially required for systemic risk analysis and provides insights into the desired components of a systemic risk information solution.

INSOLVENCY

Empirical evidence on the value of group-level financial information in insurer solvency surveillance. Pottier, Steven W; Sommer, David W - 16 pages. [RKN: 74770]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (1)** : 73-88.

The existing empirical research on insurer insolvency relies almost exclusively upon individual insurance company financial data, even though the insurance industry is dominated by group-affiliated firms. This is the first study to evaluate the benefit of using group-level data to predict insurer insolvencies for group-affiliated insurers. The study uses financial ratios from the NAIC FAST scoring system, measured at both the company level and group level, as potential predictor variables. The results indicate that group-level financial information substantially improves the predictive power of an insolvency prediction model relative to a model that uses only the analogous company-level variables. In fact, the group-level variables are found to often be substantially more powerful than company-level variables in predicting individual insurer insolvencies. These results suggest that future insolvency analysis should, whenever feasible, include group-level information to obtain higher predictive accuracy.
http://www.openathens.net

INSURANCE

Single-year and multi-year insurance policies in a competitive market. Kleindorfer, Paul R; Kunreuther, Howard; Ou-Yang, Chieh Springer, [RKN: 45855]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **45 (1)** : 51-78.

This paper examines the demand and supply of annual and multi-year insurance contracts with respect to protection against a catastrophic risk in a competitive market. Insurers who offer annual policies can cancel policies at the end of each year and

change the premium in the following year. Multi-year insurance has a fixed annual price for each year and no cancellations are permitted at the end of any given year. Homeowners are identical with respect to their exposure to the hazard. Each homeowner determines whether or not to purchase an annual or multi-year contract so as to maximize her expected utility. The competitive equilibrium consists of a set of prices where homeowners who are not very risk averse decide to be uninsured. Other individuals demand either single-year or multi-year policies depending on their degree of risk aversion and the premiums charged by insurers for each type of policy.
http://www.openathens.net

The Solvency II square-root formula for systematic biometric risk. Christiansen, Marcus C; Denuit, Michel M; Lazar, Dorina [RKN: 45599]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **50 (2)** : 257-265.
In this paper, we develop a model supporting the so-called square-root formula used in Solvency II to aggregate the modular life SCR. Describing the insurance policy by a Markov jump process, we can obtain expressions similar to the square-root formula in Solvency II by means of limited expansions around the best estimate. Numerical illustrations are given, based on German population data. Even if the square-root formula can be supported by theoretical considerations, it is shown that the QIS correlation matrix is highly questionable.
http://www.openathens.net/

INSURANCE BROKING

Optimal brokerage commissions for fair insurance: a first order approach. Hau, Arthur - 13 pages. [RKN: 74789]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (2)** : 189-201.
This paper studies a principal-agent insurance brokerage problem with a risk-averse principal (an insured) and a risk-neutral agent (a broker). The concept of “mean-preserving, spread-reducing” (MPSR) effort is introduced to model the broker's activities. Using the first-order approach, it is shown that under some common conditions, the insured may “concavify” the reward function to induce the risk-neutral agent to exert MPSR brokering effort. These conditions, together with an additional condition, guarantee the validity of the first-order approach even when the monotone likelihood ratio condition (used exclusively to justify the first-order approach) is violated.

INSURANCE COMPANIES

ERM for insurance companies - Adding the investor's point of view. Hitchcox, A N; Klumpes, P J M; McGaughey, K W; Smith, A D; Taverner, N H (2010). 2010. [RKN: 72028]
Shelved at: ifp 01/10 (Strg box SI Ref 5) ifp 01/10 (Lon) Shelved at: JOU/INS
BAJ (2011) **16(2)** : 385-404.
A major outcome of ERM activities in insurance companies has been the bringing together of all of the key risks in the company, to be managed together in a holistic fashion. The authors of this paper believe that an ERM framework also needs to look beyond the company, and have regard to the risk management needs of investors, from the point of view of the contribution of the insurance company to the overall risk and reward of their total investment portfolios. To meet these needs, the ERM framework needs to provide sufficient information on topics such as systematic risk, potential correlations of earnings from future new business with macroeconomic trends, other risks to franchise value, and sources of model risk within the company. The paper does not provide solutions for the issues described above; but limits itself to describing and discussing the direction for some important new initiatives in ERM activities. Keywords: Risk Management; Enterprise Risk Management (ERM); Systematic Risk; Franchise Value; Buffer Capital; Cost of Capital; Replicating Portfolio; Parameter Risk; Model Risk; Agency Risk; Risk Governance; Risk Disclosure.
http://www.actuaries.org.uk/research-and-resources/documents/erm-insurance-companies-adding-investors-point-view

Reputational signals and capital acquisition when insurance companies go public. Carter, Richard B; Power, Mark L [RKN: 43635]
Shelved at: Per: Geneva
Geneva Papers on Risk and Insurance (2012) **37(3)** : 485-508.
Available online via Athens
We analyse reputational signals and decisions surrounding capital acquisition by examining 76 insurance firms going public from 1996 to 2006. We first explore the relationship between proxies for insurance firm reputation and initial public offering (IPO) underwriter reputation. In general, we find that more reputable underwriters market IPOs of more reputable insurers—insurers that are less risky, more likely to be life insurers and that have higher franchise value. These results suggest that underwriter and insurer reputations are aligned and send consistent signals. Second, we show that the market requires a higher return from riskier/less reputable insurers when they go public. When we compare the performance of our insurance company sample to a matched sample of non-insurance firms, we find that the greater reputational transparency of insurers allows the market to do a better job of determining future performance. Last, we conclude by showing empirically that franchise value and the reputational posture of the insurance firms are positively related. These results contribute to the growing body of knowledge on reputational risk management and should enhance capital acquisition strategies of insurance company managers.
http://www.openathens.net/

Who benefits from building insurance groups? A welfare analysis of optimal group capital management. Schlütter, Sebastian; Gründl, Helmut [RKN: 43638]
Shelved at: Per: Geneva
Geneva Papers on Risk and Insurance (2012) **37(3)** : 571-593.
Available online via Athens
This paper compares the shareholder-value-maximising capital structure and pricing policy of insurance groups against that of

stand-alone insurers. Groups can utilise intra-group risk diversification by means of capital and risk transfer instruments. We show that using these instruments enables the group to offer insurance with less default risk and at lower premiums than is optimal for stand-alone insurers. We also take into account that shareholders of groups could find it more difficult to prevent inefficient overinvestment or cross-subsidisation, which we model by higher dead-weight costs of carrying capital. The trade-off between risk diversification on the one hand and higher dead-weight costs on the other can result in group-building being beneficial for shareholders but detrimental for policyholders.
http://www.openathens.net/

INSURANCE INDUSTRY

Insurance, systemic risk and the financial crisis. Baluch, Faisal; Mutenga, Stanley; Parsons, Chris Palgrave Macmillan, [RKN: 39984]
Shelved at: Per: Geneva (Oxf)
Geneva Papers on Risk and Insurance (2011) **36(1)** : 126-163.
Available online via Athens
In this paper we assess the impact of the financial crisis on insurance markets and the role of the insurance industry in the crisis itself. We examine some previous “insurance crises” and consider the effect of the crisis on insurance risk—the liabilities arising from contracts that insurers underwrite. We then analyse the effects of the crisis on the performance of insurers in different markets and assess the extent of systemic risk in insurance. We conclude that, while systemic risk remains lower in insurance than in the banking sector, it is not negligible and has grown in recent years, partly as a consequence of insurers’ increasing links with banks and their recent focus on non-(traditional) insurance activities, including structured finance. We conclude by considering the structural changes in the insurance industry that are likely to result from the crisis, including possible effects on “bancassurance” activity, and offer some thoughts on changes in the regulation of insurance markets that might ensue.
http://www.openathens.net

Investigating risk disclosure practices in the European insurance industry. Höring, Dirk; Gründl, Helmut Palgrave Macmillan, [RKN: 44915]
Shelved at: Per: Geneva (Oxf)
Geneva Papers on Risk and Insurance (2011) **36(3)** : 380-413.
Available online via Athens
In light of the upcoming Solvency II Pillar 3 disclosure regulation for the insurance industry, this paper explores the risk disclosure practices in annual reports of European primary insurers in the Dow Jones Stoxx 600 Insurance Index between 2005 and 2009. On the basis of a self-constructed risk disclosure index, the study examines the relation between the extent of risk disclosure and insurance companies' characteristics such as size, risk, profitability, ownership dispersion, cross-listing, home country and type of insurance sold, to draw inferences regarding motives for enhanced risk disclosure based on positive accounting theory.
http://www.openathens.net

INTEREST RATES

Application de techniques stochastiques pour l’analyse prospective de l’impact comptable du risque de taux: exemple sur les frais financiers d’une dette obligataire complexe. Bonnin, François; Planchet, Frederic; Juillard, Marc [RKN: 43237]
Shelved at: online only
Bulletin Français d'Actuariat (2011) **11 (no.21)** : 131-152.
Cet article présente une approche opérationnelle pour l’analyse du risque de taux dans une optique de moyen terme et dans une dimension économique et comptable. Cette approche est développée en plusieurs étapes : tout d’abord nous présentons le modèle et les variables stochastiques retenues, ensuite nous présentons le calibrage et les techniques de simulation, et enfin les résultats obtenus. Ce qui fait l’originalité de l’approche est le point de départ qui consiste à laisser de côté délibérément les modèles de simulation risque neutre pour concentrer les choix sur l’objectif recherché : le réalisme des courbes de taux simulées. Le fait de retenir les paramètres de forme de la représentation de Nelson-Siegel comme variables stochastiques et des processus à sauts pour le paramètre de taux courts, rendrait complexe une approche en probabilité risque-neutre, mais facilite au contraire la modélisation sous probabilité réelle.
http://www.institutdesactuaires.com/bfa/

Impacts of jumps and stochastic interest rates on the fair costs of guaranteed minimum death benefit contracts. Quittard-Pinon, François; Randrianarivony, Rivo [RKN: 45275]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (1)** : 51-73.
The authors offer a new perspective to the field of guaranteed minimum death benefit contracts, especially for simple return premium and rising floor guarantees. A particular feature of these contracts is a guaranteed capital upon the insured's death. A complete methodology based on the generalized Fourier transform is proposed to investigate the impacts of jumps and stochastic interest rates. This paper thus extends Milevsky and Posner (2001). If jumps alone are considered, similar results are obtained, but, when stochastic interest rates are introduced, the fair costs of the guarantee feature are found to be substantially higher in this more general economy.

Interest rate risk: dimension reduction in the Swiss Solvency Test. Ambrus, Marcel; Crugnola-Humbert, Jérôme; Schmid, Martin [RKN: 44831]
Shelved at: online only
European Actuarial Journal (2011) **1(2) November** : 159-172.
Available online via Athens -- Published online, 22 December 2011
Many risk models suffer from the incorporation of too many risk dimensions, which at best only increase computational costs. However, in many cases such models suffer in addition from a poor predictive power, as either the numerous underlying

parameters are not understood fully and in order to remain computable the models may be over-simplistic and therefore neglect the more subtle interactions between the main risk drivers. In this paper, we analyze the interest rate risk module of the Swiss Solvency Test Standard Model, where interest rate risk is modeled with 13 risk-factors per currency. We apply the principal component analysis to reduce the dimension of this module. The economic interpretation of the remaining risk-factors becomes obvious, improving the understanding of the model. Further, we suggest to calculate the risk-factor sensitivities at the quantile corresponding to the expected shortfall of the corresponding normally distributed risk-factor. This way the inherent non-linearities are sufficiently allowed for and a complex second order Delta–Gamma approximation could be omitted. A sample calculation based on the SST 2011 for Basler Leben AG is provided to illustrate the validity of our approach with a real world case study.
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INVESTMENT

Liability-driven investing for life insurers. van Bragt, David; Kort, Dirk-Jan Palgrave Macmillan, [RKN: 39975]
Shelved at: Per: Geneva (Oxf)
Geneva Papers on Risk and Insurance (2011) **36(1)** : 30-49.

Available online via Athens
Liability-driven investing (LDI) has recently emerged as a powerful paradigm in financial risk management. The basic idea behind LDI is to split the company's balance sheet into two separate balance sheets: one for the liabilities and the matching assets and one for the other (return) assets and the surplus. We show that constructing a proper liability-hedging portfolio (LHP) is very attractive for life insurers because the liability-driven risks can be suppressed without a negative impact on overall return. When these risks are covered by the LHP, the return assets can be optimised using well-known (Markowitz) optimisation techniques or (equity) h399756edge strategies. The LDI approach thus stimulates insurers to address all risks embedded in the insurance liabilities and facilitates the subsequent optimisation of the return assets.
http://www.openathens.net

On the valuation of investment guarantees in unit-linked life insurance: a customer perspective. Gatzert, Nadine; Huber, Carin; Schmeiser, Hato Palgrave Macmillan, [RKN: 39974]
Shelved at: Per: Geneva (Oxf)
Geneva Papers on Risk and Insurance (2011) **36(1)** : 3-29.

Available online via Athens
Interest rate guarantees in unit-linked life insurance products ensure that at contract maturity, at least a minimum guaranteed amount is paid, even if the mutual fund falls below the guaranteed level. Strongly depending on the riskiness of the underlying mutual fund, these guarantees can be of substantial value. However, while insurer pricing is based on the replication of cash flows, customers are more likely to base their decisions on individual preferences. The aim of this paper is to contrast reservation prices for guarantees in unit-linked life insurance policies based on customers' subjective willingness to pay with a financial pricing approach, an investigation that has not been undertaken to date. To do so, we use an online questionnaire survey and calculate reservation prices using option pricing theory. Our findings reveal that even though the majority of the participants in the online questionnaire are employed in the field of insurance, subjective prices are difficult to derive and are significantly lower on average than the prices obtained using a financial pricing model. However, a considerable portion of participants is still willing to pay a substantially higher price. http://www.openathens.net

Optimisation of limit systems for investment risks in accordance with Solvency II. Dotterweich, Alexander; Köstner, Stefan [RKN: 44822]
Shelved at: online only
European Actuarial Journal (2011) **1(1) Supplement 2** : 283-302.

Available online via Athens -- Selected paper presented during the 19th International Actuarial Association AFIR Colloquium in Munich, Germany, 2009
In order to satisfy the requirements of Solvency II (e.g. Framework directive on the EU Solvency II Project on Safety Measures and its implementation according to § 64a German Insurance Law)—insurance companies should implement an overall risk limit system. The starting point for developing this system is the entity's risk strategy and risk bearing capital approach based on economic principles. For life insurance companies, the dominant risk category is investment risk. Therefore, the limit system should focus on such risks. In practice there are multiple interactions between the core life insurance business and the asset side. Because of these interactions, a limit system for investment risks cannot be separated from life business risks. There is a particular need to integrate the entity's asset liability management approach into the risk limit system. The regulatory requirements call for consistent integration of a top-down view with a bottom-up risk management perspective in the investment department. In creating an adequate system, the first step is to categorise the individual types of risk and the corresponding risk management approaches. It is most important to get clear definitions of the bottom-up and the top-down views in the context of life insurance investment risks, and to integrate these into the entity's overall solvency control regime. The current financial crisis has revealed problems of valuation and an enormous and unprecedented increase in volatility in the capital markets. It is clear that an ongoing and effective analysis of these market developments and their impact on asset allocation and portfolio optimisation is necessary. The crisis also implies the need to think in detail about how to manage model risk implications. In this paper we propose an integrated view of these issues as the basis for optimal design of the company's risk limit system.
http://www.openathens.net

Weather risk hedging in the European markets and international investment diversification. Yang, Charles C; Li, Linda Shihong; Wen, Min-Ming [RKN: 45276]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (1)** : 74-94.

This article analyses weather risk hedging efficiency in three European countries using weather derivatives traded at Chicago Mercantile Exchange (CME) and explores the potential of weather derivatives as a new investment asset to further diversify investors' portfolios. The results document that the CME European weather contracts are generally effective in hedging the temperature risk in the three European countries. However, for a specific country, weather risk hedging using other countries' weather indexes is generally not effective. Zero or little correlation among international weather indexes and stock market indexes indicates that weather derivatives should be an efficient investment diversifier. This research provides important insights to both weather risk hedgers and investors.

INVESTMENT TRUST COMPANIES

Corporate governance failures : The role of institutional investors in the global financial crisis. Hawley, James; Kamath, Shyam; Williams, Andrew (2011). - Philadelphia: University of Pennsylvania Press, 2011. - 344 pages. [RKN: 73678]
Shelved at: 330.9

Corporate governance, the internal policies and leadership that guide the actions of corporations, played a major part in the recent global financial crisis. While much blame has been targeted at compensation arrangements that rewarded extreme risk-taking but did not punish failure, the performance of large, supposedly sophisticated institutional investors in this crisis has gone for the most part unexamined. Shareholding organizations, such as pension funds and mutual funds, hold considerable sway over the financial industry from Wall Street to the City of London. Corporate Governance Failures: The Role of Institutional Investors in the Global Financial Crisis exposes the misdeeds and lapses of these institutional investors leading up to the recent economic meltdown.

ITALY

Tax incentives and household investment in complementary pension insurance : Some recent evidence from the Italian experience. Marino, Immacolata; Pericoli, Filippo; Ventura, Luigi - 17 pages. [RKN: 74764]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (2)** : 247-263.

We show by a simple difference-in-difference methodology that, contrary to prior research, robustly raising the deductibility limit associated to pension fund holdings in Italy did not succeed in boosting households' contributions to this form of savings. Some other empirical findings also suggest that this policy measure may have not even increased the average amount of first-time contributors to such funds. In view of the specific features of the Italian market for complementary insurance (relatively young and less developed), these empirical results might be of interest to policymakers acting in countries with similar features (for instance, some of the more recent EU members).
http://www.openathens.net

JAPAN

Foreign ownership and non-life insurer efficiency in the Japanese marketplace. Huang, Li-Ying; Ma, Yu-Luen; Pope, Nat - 32 pages. [RKN: 73821]
Shelved at: JOU
Risk Management and Insurance Review (2012) **15 (1)** : 57-88.

Traditional shareholding patterns in Japan have experienced significant change beginning in the early 1990s. Since that time, foreign institutional shareholding has increased significantly largely at the expense of domestic financial institution ownership. This article examines whether these changes in ownership patterns share a relationship with insurer performance in the non-life insurance market. Using data from 1992 to 2005, we assess performance in terms of efficiency measures using data envelopment analyses (DEA) techniques. Our results show that higher levels of domestic financial institution ownership in Japan are associated with insurer inefficiency. Relative to that relationship, the foreign ownership–insurer efficiency relationship is found to be positive. Additionally, we find that the disparity between those relationships has become more acute since 2001 when the Japanese non-life insurance market experienced significant consolidation.
http://www.openathens.net

JUMP DIFFUSION

Impacts of jumps and stochastic interest rates on the fair costs of guaranteed minimum death benefit contracts. Quittard-Pinon, François; Randrianarivony, Rivo [RKN: 45275]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (1)** : 51-73.

The authors offer a new perspective to the field of guaranteed minimum death benefit contracts, especially for simple return premium and rising floor guarantees. A particular feature of these contracts is a guaranteed capital upon the insured's death. A complete methodology based on the generalized Fourier transform is proposed to investigate the impacts of jumps and stochastic interest rates. This paper thus extends Milevsky and Posner (2001). If jumps alone are considered, similar results are obtained, but, when stochastic interest rates are introduced, the fair costs of the guarantee feature are found to be substantially higher in this more general economy.

LEARNING

Failing to learn from experience about catastrophes : The case of hurricane preparedness. Meyer, Robert J Springer, [RKN: 45854]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **45 (1)** : 25-50.

This paper explores the question of whether there are inherent limits to our ability to learn from experience about the value of

protection against low-probability, high-consequence, events. Findings are reported from two controlled experiments in which participants have a monetary incentive to learn from experience making investments to protect against hurricane risks. A central finding is that investments display a short-term forgetting effect consistent with the use of reinforcement learning rules, where a significant driver of investments in a given period is whether storm losses were incurred in the precious period. Given the relative rarity of such losses, this reinforcement process produces a mean investment level below that which would be optimal for most storm threats. Investments are also found to be insensitive to the censoring effect of protection itself, implying that the size of experienced losses—rather than losses that are avoided—is the primary driver of investment decisions.
http://www.openathens.net

LIABILITIES

Innovation and information acquisition under time inconsistency and uncertainty. Chemarin, Sophie; Orset, Caroline - 42 pages. [RKN: 74787]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (2)** : 132-173.
When an agent invests in new industrial activities, he has a limited initial knowledge of his project's returns. Acquiring information allows him both to reduce the uncertainty on the dangerousness of this project and to limit potential damages that it might cause on people's health and on the environment. In this paper, we study whether there exist situations in which the agent does not acquire information. We find that an agent with time-consistent preferences, as well as an agent with hyperbolic ones, will acquire information unless its cost exceeds the direct benefit they could get with this information. Nevertheless, a hyperbolic agent may remain strategically ignorant and, when he does acquire information, he will acquire less information than a time-consistent type. Moreover, a hyperbolic-discounting type who behaves as a time-consistent agent in the future is more inclined to stay ignorant. We then emphasize that this strategic ignorance depends on the degree of precision of the information. Finally, we analyse the role that existing liability rules could play as an incentive to acquire information under uncertainty and with regard to the form of the agent's preferences.

Liability-driven investing for life insurers. van Bragt, David; Kort, Dirk-Jan Palgrave Macmillan, [RKN: 39975]
Shelved at: Per: Geneva (Oxf)
Geneva Papers on Risk and Insurance (2011) **36(1)** : 30-49.
Available online via Athens
Liability-driven investing (LDI) has recently emerged as a powerful paradigm in financial risk management. The basic idea behind LDI is to split the company's balance sheet into two separate balance sheets: one for the liabilities and the matching assets and one for the other (return) assets and the surplus. We show that constructing a proper liability-hedging portfolio (LHP) is very attractive for life insurers because the liability-driven risks can be suppressed without a negative impact on overall return. When these risks are covered by the LHP, the return assets can be optimised using well-known (Markowitz) optimisation techniques or (equity) h399756edge strategies. The LDI approach thus stimulates insurers to address all risks embedded in the insurance liabilities and facilitates the subsequent optimisation of the return assets.
http://www.openathens.net

Market-consistent valuation of insurance liabilities by cost of capital. Mohr, Christoph - 27 pages. [RKN: 74738]
Shelved at: Per: Astin Bull (Oxf) Shelved at: JOU
ASTIN Bulletin (2011) **41 (2)** : 315-341.
online access via International Actuarial Association:
http://www.actuaries.org/index.cfm?lang=EN&DSP=PUBLICATIONS&ACT=ASTIN BULLETIN
This paper investigates market-consistent valuation of insurance liabilities in the context of Solvency II among others and to some extent IFRS 4. We propose an explicit and consistent framework for the valuation of insurance liabilities which incorporates the Solvency II approach as a special case. The proposed framework is based on replication over multiple (one-year) time periods by a periodically updated portfolio of assets with reliable market prices, allowing for 'limited liability' in the sense that the replication can in general not always be continued. The asset portfolio consists of two parts: (1) assets whose market price defines the value of the insurance liabilities, and (2) capital funds used to cover risk which cannot be replicated. The capital funds give rise to capital costs; the main exogenous input in the framework is the condition on when the investment of the capital funds is acceptable. We investigate existence of the value and show that the exact calculation of the value has to be done recursively backwards in time, starting at the end of the lifetime of the insurance liabilities. We derive upper bounds on the value and, for the special case of replication by risk-free one-year zero-coupon bonds, explicit recursive formulas for calculating the value. In the paper, we only partially consider the question of the uniqueness of the value. Valuation in Solvency II and IFRS 4 is based on representing the value as a sum of a 'best estimate' and a 'risk margin'. In our framework, it turns out that this split is not natural. Nonetheless, we show that a split can be constructed as a simplification, and that it provides an upper bound on the value under suitable conditions. We illustrate the general results by explicitly calculating the value for a simple example.
http://www.actuaries.org/index.cfm?lang=EN&DSP=PUBLICATIONS&ACT=ASTIN BULLETIN

LIABILITY

Roads to ruin: a study of major risk events: their origins, impact and implications. Atkins, Derek; Fitzsimmons, Anthony; Parsons, Chris; Punter, Alan (2012). - London: Airmic, 2012. - [3], 183, [1] pages. [RKN: 43527]
Shelved at: AZA/BYF/BYG/EEQ (Lon)
'A report by Cass Business School on behalf of Airmic sponsored by Crawford and Lockton' - t.p.

Surety bonds with fair and unfair pricing. Wambach, Achim; Engel, Andreas R. [RKN: 45274]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (1)** : 36-50.
Surety bonds are instruments used in public and private procurement to avoid the problem of contractor bankruptcy. A surety

company issuing such a bond guarantees to either finish the project itself or pay the bond to the procurement agency in case of contractor's bankruptcy. This situation is analysed under the assumption that the bond is either priced fairly, or a risk loading that is proportional to the money at risk is imposed. If the surety is priced fairly, full insurance (or even overinsurance) is optimal. If the surety is priced unfairly, more solvent contractors are more likely to win, thus the problem of abnormally low tenders is alleviated.

LIABILITY INSURANCE

Conversion and efficiency performance changes: evidence from the U.S. property-liability insurance industry. Chen, Lih-Ru; Lai, Gene C; Wang, Jennifer L [RKN: 45273]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (1)** : 1-35.
This study investigates whether the conversion of U.S. property-liability insurers improves their efficiency performance before and after the conversion. We estimate relative efficiency of converting insurers and control insurers using data envelopment analysis. The Malmquist analysis is also used to measure changes in efficiency pre- and post-conversion. The evidence shows that converting insurers experience larger gains in cost efficiency and total productivity change than mutual control insurers before conversion. In addition, the empirical results indicate that converting insurers improve efficiency after conversion. These results are robust with respect to both the value-added and the financial intermediary approaches. The overall results support the efficiency hypothesis proposed by Mayers and Smith (1986).

LIFE ASSURANCE

Current topics within the life insurance industry. Elliot, Martin; Hare, David (2011). - Edinburgh: Faculty of Actuaries Students' Society, 2011. - 29 pages. [RKN: 43567]
Shelved at: FASS
http://www.fass-online.org/index.php?option=com content&view=article&id=146&Itemid=190

Did anyone learn anything from the Equitable Life? Lessons and learning from financial crises. Roberts, Richard (2012). - London: Kings College London, 2012. [RKN: 43542]
Shelved at: Online only
http://www.equitable.co.uk/media/32351/king's%20final%20report07092012final.pdf

Mixed dynamic and static risk-minimization with an application to survivor swaps. Dahl, Mikkel; Glar, Sverkel; Møller, Thomas [RKN: 44820]
Shelved at: online only
European Actuarial Journal (2011) **1(1) Supplement 2** : 233-260.
Available online via Athens -- Selected paper presented during the 19th International Actuarial Association AFIR Colloquium in Munich, Germany, 2009
In the traditional setup, the financial market consists of liquid and dynamically traded financial assets. Here, we extend this setup to include an illiquid asset, which may be traded at fixed, discrete times only. Within this setting of mixed dynamic and static hedging, we adopt the criterion of risk-minimization and minimize the so-called risk process at the fixed trading times for the illiquid asset. The optimal mixed dynamic and static risk-minimizing strategies are compared with the optimal dynamic strategies, and certain correction terms that arise, when trading is restricted to discrete time for the illiquid asset, are identified. We apply the technique for a life insurance company whose liabilities are described by a general insurance payment process. Here, the traditional financial market contains a savings account and a zero coupon bond, which may be traded continuously, and an illiquid mortality derivative, traded at fixed times. We provide numerical illustrations with survivor swaps and compare the minimum obtainable risk with the risk for the optimal dynamic strategies.
http://www.openathens.net

Revised version of: Solvency requirement for a long-term guarantee: risk measures versus probability of ruin. Devolder, Pierre [RKN: 44833]
Shelved at: online only
European Actuarial Journal (2011) **1(2) November** : 199-214.
Available online via Athens -- Published online, 22 December 2011
Solvency requirements are based on the idea that risk can be accepted if enough capital is present. The determination of this minimum level of capital depends on how we consider and measure the underlying risk. Apart from the kind of risk measure used, an important factor is how time is integrated in the process. This topic is particularly important for long-term liabilities such as life insurance or pension benefits. In this paper we study the market risk of a life insurer offering a fixed guaranteed rate on a certain time horizon and investing the premium in a risky fund. We develop and compare various risk measurements based either on a single point analysis or on a continuous-time test. Dynamic risk measures are also considered.
http://www.openathens.net

Risk classification in life insurance: methodology and case study. Gschlössl, Susanne; Schoenmaekers, Pascal; Denuit, Michel [RKN: 44803]
Shelved at: online only
European Actuarial Journal (2011) **1(1) July** : 23-41.
Available online via Athens
In this paper, we describe how Poisson regression analysis can be efficiently used to perform graduation of mortality rates in presence of exogenous information supporting an efficient underwriting process in life insurance business. After having justified the relevance of a Poisson likelihood for mortality data, we explain how categorical and continuous covariates can be included in the model. A case study based on a German insurance portfolio is proposed to illustrate the usefulness of the approach described in this paper.
http://www.openathens.net

Understanding, modelling and managing longevity risk: key issues and main challenges. Barrieu, Pauline; Bensusan, Harry; El Karoui, Nicole; Hillairet Caroline; Loisel, Stéphane; Ravanelli, Claudia; Salhi, Yahia [RKN: 44885]
Shelved at: Per: SAJ Shelved at: SCA/ACT
Scandinavian Actuarial Journal (2012) **3** : 203-231.

Available via Athens access

This article investigates the latest developments in longevity-risk modelling, and explores the key risk management challenges for both the financial and insurance industries. The article discusses key definitions that are crucial for the enhancement of the way longevity risk is understood, providing a global view of the practical issues for longevity-linked insurance and pension products that have evolved concurrently with the steady increase in life expectancy since s. In addition, the article frames the recent and forthcoming developments that are expected to action industry-wide changes as more effective regulation, designed to better assess and efficiently manage inherited risks, is adopted. Simultaneously, the evolution of longevity is intensifying the need for capital markets to be used to manage and transfer the risk through what are known as Insurance-Linked Securities (ILS). Thus, the article will examine the emerging scenarios, and will finally highlight some important potential developments for longevity-risk management from a financial perspective with reference to the most relevant modelling and pricing practices in the banking industry.

http://www.openathens.net/

LIFE CONTINGENCIES

Models for quantifying risk. Cunningham, Robin J; Herzog, Thomas N; London, Richard L (2011). - 4th ed. Actex, 2011. - 474 pages. [RKN: 74932]
Shelved at: 368.01

This textbook presents a variety of stochastic models for the actuary to use in undertaking the analysis of risk. It is designed to be appropriate for use in a two- or three-semester university course in basic actuarial science. It was also written with the SOA Exam MLC in mind. It covers all of the life contingencies 2012 exam topics in a single reference.

Models are evaluated in a generic form with life contingencies included as one of many applications of the science. Students will find this book to be a valuable reference due to its easy-to-understand explanations and the end-of-chapter exercises. It also introduces students to the practical use of the science via the Appendices.

The Fourth edition has been updated to support the new Learning Objectives for SOA Exam MLC beginning in 2012. Material has been added to address the notion of interest rate risk and new applications for the concept of reserves. Additional emphasis has been placed on representing various actuarial models as multi-state models, using the mathematics of discrete-time and/or continuous-time Markov Chains, as well as the use of simulation techniques.

LIFE INSURANCE

Corporate, product and distribution strategies in the European life insurance industry. Klumpes, Paul J M; Schuermann, Stefan Palgrave Macmillan, [RKN: 39976]
Shelved at: Per: Geneva (Oxf)
Geneva Papers on Risk and Insurance (2011) **36(1)** : 50-75.

Available online via Athens

This paper examines corporate, marketing and product distribution strategies in the cost and revenue efficiency across a sample of life insurers that operate in European markets with the highest insurance concentration and density. We predict that these strategies are also affected by segmentation and cross-country differences in regulatory type (“alpine” vs. “atlantic”), which facilitate managerial opportunistic behaviour in choice of distribution strategy. This contrasts with the standard market efficiency hypothesis, which predicts that firms that adopt one of three generic strategies (cost, customer focus and product differentiation) are more efficient than rivals that fail to adopt one of these strategies. Our results support the prediction of the market imperfection hypothesis that firms with non-exclusive distribution systems are less costly and profit-efficient. We also find that firms surviving the recent financial crisis rely on exclusive distribution channels, product differentiation and experience the highest degree of change in cost efficiency over time of increasing deregulation. These findings imply that imperfections in these markets are driven by a combination of tax incentives, regulatory arbitrage and technology transfer of larger firms that exploit their size and dominance to use multiple distribution systems, which are more costly and profit-efficient.

http://www.openathens.net

Impacts of jumps and stochastic interest rates on the fair costs of guaranteed minimum death benefit contracts. Quittard-Pinon, François; Randrianarivony, Rivo [RKN: 45275]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (1)** : 51-73.

The authors offer a new perspective to the field of guaranteed minimum death benefit contracts, especially for simple return premium and rising floor guarantees. A particular feature of these contracts is a guaranteed capital upon the insured's death. A complete methodology based on the generalized Fourier transform is proposed to investigate the impacts of jumps and stochastic interest rates. This paper thus extends Milevsky and Posner (2001). If jumps alone are considered, similar results are obtained, but, when stochastic interest rates are introduced, the fair costs of the guarantee feature are found to be substantially higher in this more general economy.

Liability-driven investing for life insurers. van Bragt, David; Kort, Dirk-Jan Palgrave Macmillan, [RKN: 39975]
Shelved at: Per: Geneva (Oxf)
Geneva Papers on Risk and Insurance (2011) **36(1)** : 30-49.

Available online via Athens

Liability-driven investing (LDI) has recently emerged as a powerful paradigm in financial risk management. The basic idea behind LDI is to split the company's balance sheet into two separate balance sheets: one for the liabilities and the matching assets and one for the other (return) assets and the surplus. We show that constructing a proper liability-hedging portfolio (LHP) is very attractive for life insurers because the liability-driven risks can be suppressed without a negative impact on overall return. When these risks are covered by the LHP, the return assets can be optimised using well-known (Markowitz) optimisation techniques or (equity) h399756edge strategies. The LDI approach thus stimulates insurers to address all risks embedded in the insurance liabilities and facilitates the subsequent optimisation of the return assets.
http://www.openathens.net

Life insurance risk management essentials. Koller, Michael (2011). - Berlin: Springer-Verlag, 2011. - xxi, 334 p. pages. [RKN: 45278]
Shelved at: BV/BXP (Lon)
The aim of the book is to provide an overview of risk management in life insurance companies. The focus is twofold: (1) to provide a broad view of the different topics needed for risk management and (2) to provide the necessary tools and techniques to concretely apply them in practice.

On the valuation of investment guarantees in unit-linked life insurance: a customer perspective. Gatzert, Nadine; Huber, Carin; Schmeiser, Hato Palgrave Macmillan, [RKN: 39974]
Shelved at: Per: Geneva (Oxf)
Geneva Papers on Risk and Insurance (2011) **36(1)** : 3-29.
Available online via Athens
Interest rate guarantees in unit-linked life insurance products ensure that at contract maturity, at least a minimum guaranteed amount is paid, even if the mutual fund falls below the guaranteed level. Strongly depending on the riskiness of the underlying mutual fund, these guarantees can be of substantial value. However, while insurer pricing is based on the replication of cash flows, customers are more likely to base their decisions on individual preferences. The aim of this paper is to contrast reservation prices for guarantees in unit-linked life insurance policies based on customers' subjective willingness to pay with a financial pricing approach, an investigation that has not been undertaken to date. To do so, we use an online questionnaire survey and calculate reservation prices using option pricing theory. Our findings reveal that even though the majority of the participants in the online questionnaire are employed in the field of insurance, subjective prices are difficult to derive and are significantly lower on average than the prices obtained using a financial pricing model. However, a considerable portion of participants is still willing to pay a substantially higher price.
http://www.openathens.net

LLOYDS

Solvency II: A change of view. Saini, Harjit; Haslip, Gareth Staple Inn Actuarial Society, [RKN: 73707]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **November** : 33-35.
Harjit Saini and Gareth Haslip describe how capital management at Lloyd's is changing in response to the requirements of Solvency II
http://www.theactuary.com/

LONGEVITY

Parallels with the past. Sagoo, Pretty; Mosher, Jessica Staple Inn Actuarial Society, [RKN: 45471]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **October** : 22-23.
Pretty Sagoo and Jessica Mosher look at ways of categorising and measuring basis risk _in longevity hedges.
http://www.theactuary.com/

LONGEVITY RISK

Book review : Longevity Risk, edited by Emma McWilliam. Edwards, Matthew Staple Inn Actuarial Society, [RKN: 45481]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **October** : 39.
http://www.theactuary.com/

Developments in the management of annuity business. Telford, P G; Browne, B A; Collinge, E J; Fulcher, P; Johnson, B E; Little, W; Lu, J L C; Nurse, J M; Smith, D W; Zhang, F (2011). 2011. [RKN: 72306]
Shelved at: Online only Shelved at: JOU/INS
BAJ (2011) **16(3)** : 471-551.
The focus of the paper is non-profit lifetime annuities in the UK. Annuity insurers have been faced with, or have initiated, an unprecedented amount of change during the last decade, and rapid change is still continuing. We draw out implications for the actuarial management of the business, arising from the evolution of: longevity risk assessment and management, investment strategy and operations, financial reporting, and enterprise risk management. We discuss Solvency II in some technical depth, analysing the proposed rules for technical provisions and solvency capital requirement.
Keywords: Annuities; Retirement Income; Longevity; Mortality Improvement; Reinsurance; Underwriting; Collateral; Investment; Asset-Liability Management; Financial Reporting; IFRS; Pillar I; Individual Capital Assessment; Enterprise Risk Management; Solvency II; Illiquidity Premium; Economic Capital
http://www.actuaries.org.uk/research-and-resources/documents/developments-management-annuity-business

Developments in the management of annuity business. Telford, P G; Browne, B A; Collinge, E J; Fulcher, P; Johnson, B E; Little, W; Lu, J L C; Nurse, J M; Smith, D W; Zhang, F - 81 pages. [RKN: 73860]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (3)** : 471-551.

The focus of the paper is non-profit lifetime annuities in the UK. Annuity insurers have been faced with, or have initiated, an unprecedented amount of change during the last decade, and rapid change is still continuing. We draw out implications for the actuarial management of the business, arising from the evolution of: longevity risk assessment and management, investment strategy and operations, financial reporting, and enterprise risk management. We discuss Solvency II in some technical depth, analysing the proposed rules for technical provisions and solvency capital requirement.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Developments in the management of annuity business : Abstract of the Edinburgh discussion. Telford, Peter - 24 pages. [RKN: 73861]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (3)** : 553-576.

This abstract relates to the following paper:

P.G. Telford, B.A. Browne, E.J. Collinge, P. Fulcher, B.E. Johnson, W. Little, J.L.C. Lu, J.M. Nurse, D.W. Smith & F. Zhang Developments in the Management of Annuity Business. British Actuarial Journal, 16 (3).
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Developments in the management of annuity business : Abstract of the London discussion. Telford, Peter - 23 pages. [RKN: 73862]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (3)** : 577-599.

This abstract relates to the following paper:

P.G. Telford, B.A. Browne, E.J. Collinge, P. Fulcher, B.E. Johnson, W. Little, J.L.C. Lu, J.M. Nurse, D.W. Smith & F. Zhang Developments in the Management of Annuity Business. British Actuarial Journal, 16 (3).
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Developments in the management of annuity business : Abstract of the London discussion-ADDENDUM. Telford, Peter - 2 pages. [RKN: 73960]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (1)** : 256-257.

Institute of Actuaries, 22 March 2010.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Longevity risk. McWilliam, Emma (2011). - London: Risk Books, 2011. - xxiv, 355 p. pages. [RKN: 45091]
Shelved at: EEQ Shelved at: 368.01

books@incisivemedia.com
Around the world, a structural shift in demographics is taking place: people are living longer. While an increasing number of people look forward to retirement the implication for firms, funds and governments with hundreds of billions of dollars in defined benefit pension scheme liabilities is clear: a heightened risk of larger payouts. This is longevity risk. This book presents methods to price and measure longevity risk and ways to hedge/de-risk through a range of traditional insurance, reinsurance and innovative capital market solutions.

Longevity risk management in Singapore's national pension system. Fong, Joelle H Y; Mitchell, Olivia S; Koh, Benedict S K - 22 pages. [RKN: 74879]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2011) **78 (4)** : 961–982.

Available online via Athens
Although annuities are a theoretically appealing way to manage longevity risk, in the real world relatively few consumers purchase them at retirement. To counteract the possibility of retirees outliving their assets, Singapore's Central Provident Fund, a national defined contribution pension scheme, has recently mandated annuitization of workers' retirement assets. More significantly, the government has entered the insurance market as a public-sector provider for such annuities. This article evaluates the money's worth of life annuities and discusses the impact of the government mandate and its role as an annuity provider on the insurance market.
http://www.openathens.net

Mixed dynamic and static risk-minimization with an application to survivor swaps. Dahl, Mikkel; Glar, Sverkel; Møller, Thomas [RKN: 44820]
Shelved at: online only
European Actuarial Journal (2011) **1(1) Supplement 2** : 233-260.

Available online via Athens -- Selected paper presented during the 19th International Actuarial Association AFIR Colloquium in Munich, Germany, 2009
In the traditional setup, the financial market consists of liquid and dynamically traded financial assets. Here, we extend this setup to include an illiquid asset, which may be traded at fixed, discrete times only. Within this setting of mixed dynamic and static hedging, we adopt the criterion of risk-minimization and minimize the so-called risk process at the fixed trading times for the illiquid asset. The optimal mixed dynamic and static risk-minimizing strategies are compared with the optimal dynamic strategies, and certain correction terms that arise, when trading is restricted to discrete time for the illiquid asset, are identified. We apply the technique for a life insurance company whose liabilities are described by a general insurance payment process. Here, the traditional financial market contains a savings account and a zero coupon bond, which may be traded continuously, and an illiquid mortality derivative, traded at fixed times. We provide numerical illustrations with survivor swaps and compare the minimum obtainable risk with the risk for the optimal dynamic strategies.
http://www.openathens.net

Securitization of longevity risk using percentile tranching (pages). Changki Kim and; Yangho Choi - 22 pages. [RKN: 74876]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2011) **78 (4)** : 885–906.
Available online via Athens
Securitizations that transfer risk to the financial markets are a potential solution to longevity risk in the annuity business. The classical Lee–Carter model is applied to generate the future stochastic survival distribution. A method to design inverse survivor bonds using percentile tranches and to calculate the security prices is presented. The percentile tranche method is a simple and practical way for the issuer to design and price the security. This method can serve to identify the risk–yield relationship, which can provide investors with clear insight regarding the appropriate choice of tranches.
http://www.openathens.net

Understanding, modelling and managing longevity risk: key issues and main challenges. Barrieu, Pauline; Bensusan, Harry; El Karoui, Nicole; Hillairet Caroline; Loisel, Stéphane; Ravanelli, Claudia; Salhi, Yahia [RKN: 44885]
Shelved at: Per: SAJ Shelved at: SCA/ACT
Scandinavian Actuarial Journal (2012) **3** : 203-231.
Available via Athens access
This article investigates the latest developments in longevity-risk modelling, and explores the key risk management challenges for both the financial and insurance industries. The article discusses key definitions that are crucial for the enhancement of the way longevity risk is understood, providing a global view of the practical issues for longevity-linked insurance and pension products that have evolved concurrently with the steady increase in life expectancy since s. In addition, the article frames the recent and forthcoming developments that are expected to action industry-wide changes as more effective regulation, designed to better assess and efficiently manage inherited risks, is adopted. Simultaneously, the evolution of longevity is intensifying the need for capital markets to be used to manage and transfer the risk through what are known as Insurance-Linked Securities (ILS). Thus, the article will examine the emerging scenarios, and will finally highlight some important potential developments for longevity-risk management from a financial perspective with reference to the most relevant modelling and pricing practices in the banking industry.
http://www.openathens.net/

LOSS

Calculating and communicating tail association and the risk of extreme loss: a discussion paper. Sweeting, Paul; Fotiou, Fotis (2011). - London: Institute and Faculty of Actuaries, 2011. - 66 pages. [RKN: 45483]
Shelved at: EEQ pam (Lon) Shelved at: JOU
This paper examines two aspects of extreme events; their calculation and their communication. In relation to calculation, two types of extreme event are considered: the extent to which extreme events in two or more variables occur together, and the combinations of losses from a series of risks that together result in total losses exceeding a particular level. The communication of extreme events is discussed not only in terms of numbers but explores graphical methods that can be used to aggregate information on a range of risk combinations. This involves communicating not just the level of risk but also the importance of the risk considered.
http://www.actuaries.org.uk/sites/all/files/event brochures/110724erm report clean.pdf

MANAGEMENT

Dupes or incompetents? An examination of management's impact on firm distress. Leverty, J Tyler; Grace, Martin F - 33 pages. [RKN: 70415]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2012) **79 (3)** : 751-783.
Available online via Athens
This article examines whether managers impact firm performance. We conservatively define managerial ability as the manager's capacity to deploy the firm's resources. We verify the validity of our metric using a manager–firm matched panel data set that allows us to track managers (CEOs) across different firms over time. We find managerial ability is inversely related to the amount of time a firm spends in distress, the likelihood of a firm's failure, and the cost of failure. These results suggest that the managers of failed firms are less skilled than their counterparts. But even within failed firms there is heterogeneity in the talents of managers.
http://www.openathens.net

What do we know about market discipline in insurance?. Eling, Martin - 39 pages. [RKN: 70637]
Shelved at: JOU
Risk Management and Insurance Review (2012) **15 (2)** : 185-223.
Available online via Athens: Wiley Online Library
The aim of this article is to summarize the knowledge on market discipline in insurance and other financial service sectors. Market discipline can be defined as the ability of customers, investors, intermediaries (agents, brokers), and evaluators (analysts, auditors, rating agencies) to monitor and influence a company's management. Looking at banking is especially interesting, since market discipline in this field has been studied extensively. Based on existing knowledge, we develop a framework for researching market discipline in insurance that includes its most important drivers and impediments. The results highlight a significant need for continuing research. The findings are of relevance not only for European insurers and regulators, but for institutions outside Europe.
http://www.openathens.net

MANAGEMENT ORGANISATION STRUCTURE

Separation of ownership and management: implications for risk-taking behavior. Cole, Cassandra R; He, Enya; McCullough, Kathleen A; Sommer, David W - 23 pages. [RKN: 74769]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (1)** : 49-71.

Issues associated with the relation between the separation of ownership and management and risk-taking behavior have been considered in an array of studies, with varying results. Due to the wide variety of ownership structures present, the property–casualty insurance industry provides an excellent setting to test the conflicting hypotheses related to separation of ownership from management and risk taking behavior. Employing a large sample of property–liability insurance companies over the period of 1996–2004, we empirically test the alternative hypotheses regarding the implications of separation of ownership from management for firms' risk taking behavior. The empirical tests include the ownership structures specified in prior research as well as a more detailed classification scheme. We find that each ownership structure is significantly different from every other ownership structure in terms of risk.
http://www.openathens.net

MARKET DISCIPLINE

Is there market discipline in the European insurance industry? : An analysis of the German insurance market. Eling, Martin; Schmit, Joan T - 28 pages. [RKN: 70262]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (2)** : 180-207.

Economists often argue in favour of market discipline as a means to distribute resources effectively and efficiently. These same arguments likely influence decision-makers as they incorporate market discipline as the third pillar of Solvency II, the European insurance regulatory scheme currently being implemented. Success for Solvency II, then, is dependent in part on the strength of influence found in market discipline. Our research indicates that the German insurance market demonstrates the existence of such discipline, although the actual effect appears smaller than previously found in the U.S. insurance market. Solvency II, therefore, seems to be following an appropriate path, although further research is needed to evaluate whether or not enhancements to market discipline within the European market are warranted.

What do we know about market discipline in insurance?. Eling, Martin - 39 pages. [RKN: 70637]
Shelved at: JOU
Risk Management and Insurance Review (2012) **15 (2)** : 185-223.

Available online via Athens: Wiley Online Library
The aim of this article is to summarize the knowledge on market discipline in insurance and other financial service sectors. Market discipline can be defined as the ability of customers, investors, intermediaries (agents, brokers), and evaluators (analysts, auditors, rating agencies) to monitor and influence a company's management. Looking at banking is especially interesting, since market discipline in this field has been studied extensively. Based on existing knowledge, we develop a framework for researching market discipline in insurance that includes its most important drivers and impediments. The results highlight a significant need for continuing research. The findings are of relevance not only for European insurers and regulators, but for institutions outside Europe.
http://www.openathens.net

MARKOV PROCESSES

Threshold dividend strategies for a Markov-additive risk model. Breuer, Lothar [RKN: 44835]
Shelved at: online only
European Actuarial Journal (2011) **1(2) November** : 237-258.

Available online via Athens -- Published online, 22 December 2011
We consider the following risk reserve model. The premium income is a level dependent Markov-modulated Brownian motion. Claim sizes are iid with a phase-type distribution. The claim arrival process is a Markov-modulated Poisson process. For this model the payment of dividends under a threshold dividend strategy and the time until ruin will be analysed.
http://www.openathens.net

MASS TORTS

The next big thing. Ball, Matthew; Jing, Yi; Sullivan, Landon Staple Inn Actuarial Society, - 3 pages. [RKN: 70768]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **July** : 30-32.

Matthew Ball, Yi Jing and Landon Sullivan examine why quantifying risks from mass torts has lagged behind natural catastrophe modelling and how recent advances make it possible to prepare for the 'next asbestos'.
http://www.theactuary.com/

MATHEMATICAL MODELS

Risk modelling in general insurance: from principles to practice. Gray, Roger J; Pitts, Susan M (2012). - Cambridge: Cambridge University Press for the Institute of Actuaries and the Faculty of Actuaries, 2012. - xiv, 393 pages. [RKN: 45763]
Shelved at: BX/UHG (Lon) Shelved at: 368.01

Final publication following proof copy.

Knowledge of risk models and the assessment of risk is a fundamental part of the training of actuaries and all who are involved in financial, pensions and insurance mathematics. This book provides students and others with a firm foundation in a wide range of statistical and probabilistic methods for the modelling of risk, including short term risk modelling, model based pricing, risk sharing, ruin theory and credibility.

MATHEMATICS

Ambiguity aversion, higher-order risk attitude and optimal effort. Huang, Rachel J [RKN: 45637]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **50 (3)** : 338-345.

In this paper, we examine whether a more ambiguity-averse individual will invest in more effort to shift her initial starting wealth distribution toward a better target distribution. We assume that the individual has ambiguous beliefs regarding two target (starting) distributions and that one distribution is preferred to the other. We find that an increase in ambiguity aversion will decrease (increase) the optimal effort when the cost of effort is non-monetary. When the cost of effort is monetary, the effect depends on whether the individual would make more effort when the target (starting) distribution is the preferred distribution than the target (starting) distributions, the inferior one. We further characterize the individual's higher-order risk preferences to examine the sufficient conditions.

http://www.openathens.net/

Are quantile risk measures suitable for risk-transfer decisions?. Guerra, Manuel; Centeno, M L [RKN: 45648]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **50 (3)** : 446-461.

Although controversial from the theoretical point of view, quantile risk measures are widely used by institutions and regulators. In this paper, we use a unified approach to find the optimal treaties for an agent who seeks to minimize one of these measures, assuming premium calculation principles of various types. We show that the use of measures like Value at Risk or Conditional Tail Expectation as optimization criteria for insurance or reinsurance leads to treaties that are not enforceable and/or are clearly bad for the cedent. We argue that this is one further argument against the use of quantile risk measures, at least for the purpose of risk-transfer decisions.

http://www.openathens.net/

Characterization of left-monotone risk aversion in the RDEU model. Mao, Tiantian; Hu, Taizhong [RKN: 45644]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **50 (3)** : 413-422.

We extend the characterization of the left-monotone risk aversion developed by Ryan (2006) to the case of unbounded random variables. The notion of weak convergence is insufficient for such an extension. It requires the solution of a host of delicate convergence problems. To this end, some further intrinsic properties of the location independent risk order are investigated. The characterization of the right-monotone risk aversion for unbounded random variables is also mentioned. Moreover, we remove the gap in the proof of the main result in Ryan (2006).

http://www.openathens.net/

The joint distribution of the time to ruin and the number of claims until ruin in the classical risk model. Dickson, David C M [RKN: 45636]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **50 (3)** : 334-337.

We use probabilistic arguments to derive an expression for the joint density of the time to ruin and the number of claims until ruin in the classical risk model. From this we obtain a general expression for the probability function of the number of claims until ruin. We also consider the moments of the number of claims until ruin and illustrate our results in the case of exponentially distributed individual claims. Finally, we briefly discuss joint distributions involving the surplus prior to ruin and deficit at ruin.

http://www.openathens.net/

MECHANISM DESIGN

Risk-sharing contracts with asymmetric information. Bourles, Renaud; Henriet, Dominique - 30 pages. [RKN: 74941]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (1)** : 27-56.

We examine how risk-sharing is impacted by asymmetric information on the probability distribution of wealth. We define the optimal incentive compatible agreements in a two-agent model with two levels of wealth. When there is complete information on the probability of the different outcomes, the resulting allocation satisfies the mutuality principle (which states that everyone's final wealth depends only upon the aggregate wealth of the economy). This is no longer true when agents have private information regarding their probability distribution of wealth. Asymmetry of information (i) makes ex-post equal sharing unsustainable between two low-risk agents, and (ii) induces exchanges when agents have the same realization of wealth.

MEDICAL MALPRACTICE

Losers and losers: Some demographics of medical malpractice tort reforms. Friedson, Andrew I; Kniesner, Thomas J Springer, [RKN: 45873]
Shelved at: Per: JRU (Oxf)
Journal of Risk and Uncertainty (2012) **45(2)**

Our research examines how recent reforms have affected a key aspect of patients' implicit insurance present in medical malpractice torts. Specifically, we estimate how non-economic damages caps affected pre-trial settlement speed and settlement amounts. Maximum entropy (most likely) quantile regressions emphasize that the post-reform settlement effects most informative for policy evaluation differ greatly from OLS (mean) estimates and clarify the conclusion emerging. In particualr, the effect of the tort reform here can best be thought of as a 25% tax on the asset value of settlements that exempts settlements involving infants. The social welfare effects of tort reform are less clear than the asset reduction effects due to likely health state dependent utility.

MODELLING

Extreme measures. Cox, Andy; Reid, Scott Staple Inn Actuarial Society, [RKN: 45475]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **October** : 28-30.

Andy Cox and Scott Reid consider the intricacies of modelling terrorism risk.
http://www.theactuary.com/

Risk measures in ordered normed linear spaces with non-empty cone-interior. Konstantinides, Dimitrios G; Kountzakis, Christos E [RKN: 39934]
Shelved at: Per: IME (Oxf)
Insurance: Mathematics & Economics (2011) **48 (1)** : 111-122.

In this paper, we use tools from the theory of partially ordered normed linear spaces, especially the bases of cones. This work extends the well-known results for convex and coherent risk measures. Its linchpin consists in the replacement of the riskless bond by some interior point in the cone of the space of risks, which stands as the alternative numeraire.
http://www.openathens.net

Risk modelling in general insurance: from principles to practice. Gray, Roger J; Pitts, Susan M (2012). - Cambridge: Cambridge University Press for the Institute of Actuaries and the Faculty of Actuaries, 2012. - xiv, 393 pages. [RKN: 45763]
Shelved at: BX/UHG (Lon) Shelved at: 368.01

Final publication following proof copy.
Knowledge of risk models and the assessment of risk is a fundamental part of the training of actuaries and all who are involved in financial, pensions and insurance mathematics. This book provides students and others with a firm foundation in a wide range of statistical and probabilistic methods for the modelling of risk, including short term risk modelling, model based pricing, risk sharing, ruin theory and credibility.

Solvency II: Boxing clever. Cox, Andrew Staple Inn Actuarial Society, [RKN: 73705]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **November** : 30-31.

Andrew Cox models an implementation of the one-year test using two approaches
http://www.theactuary.com/

The strictest common relaxation of a family of risk measures. Roorda, Berend; Schumacher, J M [RKN: 13027]
Shelved at: Per: IME (Oxf)
Insurance: Mathematics & Economics (2011) **48 (1)** : 29-34.

Operations which form new risk measures from a collection of given (often simpler) risk measures have been used extensively in the literature. Examples include convex combination, convolution, and the worst-case operator. Here we study the risk measure that is constructed from a family of given risk measures by the best-case operator; that is, the newly constructed risk measure is defined as the one that is as restrictive as possible under the condition that it accepts all positions that are accepted under any of the risk measures from the family. In fact we define this operation for conditional risk measures, to allow a multiperiod setting. We show that the well-known VaR risk measure can be constructed from a family of conditional expectations by a combination that involves both worst-case and best-case operations. We provide an explicit description of the acceptance set of the conditional risk measure that is obtained as the strictest common relaxation of two given conditional risk measures.
http://www.openathens.net

MODELS

The joint distribution of the time to ruin and the number of claims until ruin in the classical risk model. Dickson, David C M [RKN: 45636]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **50 (3)** : 334-337.

We use probabilistic arguments to derive an expression for the joint density of the time to ruin and the number of claims until ruin in the classical risk model. From this we obtain a general expression for the probability function of the number of claims until ruin. We also consider the moments of the number of claims until ruin and illustrate our results in the case of exponentially distributed individual claims. Finally, we briefly discuss joint distributions involving the surplus prior to ruin and deficit at ruin.
http://www.openathens.net/

Models for quantifying risk. Cunningham, Robin J; Herzog, Thomas N; London, Richard L (2011). - 4th ed. Actex, 2011. - 474 pages. [RKN: 74932]
Shelved at: 368.01

This textbook presents a variety of stochastic models for the actuary to use in undertaking the analysis of risk. It is designed to be appropriate for use in a two- or three-semester university course in basic actuarial science. It was also written with the SOA Exam MLC in mind. It covers all of the life contingencies 2012 exam topics in a single reference.

Models are evaluated in a generic form with life contingencies included as one of many applications of the science. Students will find this book to be a valuable reference due to its easy-to-understand explanations and the end-of-chapter exercises. It also introduces students to the practical use of the science via the Appendices.

The Fourth edition has been updated to support the new Learning Objectives for SOA Exam MLC beginning in 2012. Material has been added to address the notion of interest rate risk and new applications for the concept of reserves. Additional emphasis has been placed on representing various actuarial models as multi-state models, using the mathematics of discrete-time and/or continuous-time Markov Chains, as well as the use of simulation techniques.

Quality measures of scoring models. Siarka, Pawel [RKN: 45850]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(4)** : 432-446.

One of the basic stages of constructing credit-scoring models is the assessment of their quality understood as the ability to separate reliable and unreliable borrower population. This paper focuses on methods enabling the assessment of discrimination quality, and presents the results of researches on the basis of empirical data. Apart from establishing the measure of discrimination quality, this paper refers to the issue of the assessment of the stability of results obtained by setting a confidence interval for the quality measure of the scoring model.
http://www.openathens.net

The Solvency II square-root formula for systematic biometric risk. Christiansen, Marcus C; Denuit, Michel M; Lazar, Dorina [RKN: 45599]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **50 (2)** : 257-265.

In this paper, we develop a model supporting the so-called square-root formula used in Solvency II to aggregate the modular life SCR. Describing the insurance policy by a Markov jump process, we can obtain expressions similar to the square-root formula in Solvency II by means of limited expansions around the best estimate. Numerical illustrations are given, based on German population data. Even if the square-root formula can be supported by theoretical considerations, it is shown that the QIS correlation matrix is highly questionable.
http://www.openathens.net/

MONETARY SYSTEM

Is the build-up of TARGET2 balances a question of self-contained risk?. Ulbrich, Jens; Lipponer, Alexander [RKN: 45847]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(4)** : 390-397.

This paper argues that imbalances in the TARGET2 payment system are a symptom of the current financial crisis and not subject to self-contained risk. Any risk for the Eurosystem ultimately arises from liquidity provision and not from the redistribution of pre-existing liquidity. If the risk element is to be reduced, the extraordinary monetary policy measures of the Eurosystem will have to be addressed and reversed as soon as possible. Especially in a monetary union of sovereign member states it cannot be the task of an independent monetary policy to reallocate solvency risks among taxpayers across the currency area. Therefore, the role of the Eurosystem in tackling the current crisis should not be overstretched. At the end of the day, it is up to the member countries and not the central banks to resolve the crisis.
http://www.openathens.net

MONEY

The effects and risks of quantitative easing. Mortimer-Lee, Paul [RKN: 45846]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(4)** : 372-389.

Quantitative easing (QE) comes in many forms, each tailored to the specific needs of the region in question. What they all have in common, though, is that they are the result of the failure of conventional policy to deliver the outcomes policymakers want. There are many risks associated with unconventional tools such as QE and a number of drawbacks. But central banks around the world have taken risks with the future in a bid to avoid adverse consequences today or tomorrow. They hope that by the time QE draws to an end, they, the markets, the financial system and the wider economy will be able to manage those risks effectively. Whether they can remains to be seen.
http://www.openathens.net

MORTALITY

Iterative adjustment of survival functions by composed probability distortion. Bienvenue, Alexis; Rullière, Didier - 24 pages. [RKN: 70261]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (2)** : 156-179.

We introduce a parametric class of composite probability distortions that can be combined to converge to a target survival function. These distortions respect analytic invertibility and stability, which are shown to be relevant in many actuarial fields. We study the asymptotic impact of such distortions on hazard rates. The paper provides an estimation methodology, including hints for initialisation. Some applications to survival data bring results for catastrophic event impact modelling. We also obtain accurate parametric representations of the mortality trend over years. Finally, we suggest a prospective mortality simulation model that comes naturally from the above analysis.

A local likelihood approach to univariate graduation of mortality. Tomas, Julien [RKN: 43466]
Shelved at: online only
Bulletin Français d'Actuariat (2011) **11 (no.22)** : 105-153.

The present article extends the theory of graduation by non-parametric methods to include situations where the response variable is not assumed to be approximatively Gaussian. We investigate the extension of the non-parametric regression technique of local polynomials to localized generalized linear models and local likelihood contexts. Local likelihood is introduced as a method of smoothing by local polynomials in non-Gaussian regression models. Two examples will be used. The applications cover the graduation of both the probability of death, and the force of mortality over the entire age range. We provide an unified method for constructing pointwise confidence intervals. Graphical tests are used to compare the graduated series obtained by local likelihood with those obtained by the Whittaker-Henderson model.
http://www.institutdesactuaires.com/bfa/

Playing the long game. Plat, Richard Staple Inn Actuarial Society, [RKN: 45110]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **March** : 26-27.

Richard Plat describes a stochastic mortality model suitable for calculating capital on a one-year Value-at-Risk measure.
http://www.theactuary.com/archive

MORTALITY PROJECTIONS

Impacts of jumps and stochastic interest rates on the fair costs of guaranteed minimum death benefit contracts. Quittard-Pinon, François; Randrianarivony, Rivo [RKN: 45275]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (1)** : 51-73.

The authors offer a new perspective to the field of guaranteed minimum death benefit contracts, especially for simple return premium and rising floor guarantees. A particular feature of these contracts is a guaranteed capital upon the insured's death. A complete methodology based on the generalized Fourier transform is proposed to investigate the impacts of jumps and stochastic interest rates. This paper thus extends Milevsky and Posner (2001). If jumps alone are considered, similar results are obtained, but, when stochastic interest rates are introduced, the fair costs of the guarantee feature are found to be substantially higher in this more general economy.

MORTGAGES

Salary linked home finance: reducing interest rate, inflation and idiosyncratic salary risks. Asher, Anthony [RKN: 43244]
Australian Actuarial Journal (2011) **17(1)** : 117-148.

This paper provides some results of a recently completed PhD thesis undertaken by the author. Initial results were presented at the Institute of Actuaries [of Australia] Biennial Convention.
It is possible to develop an alternative housing finance instrument that matches the cash flow, and reduces the risks faced, by homeowners and pension funds. The instrument would also reduce the liquidity constraints faced by new and existing homeowners, and eliminate the cash flow tilt imposed by high inflation. Moral hazard and anti-selection risks are likely to restrict the market to employees of large institutions, but such an instrument would encourage greater flows of funds from superannuation into housing. Other obstacles to its introduction can be overcome.
http://www.actuaries.asn.au/TechnicalResources/ActuaryJournals.aspx

MULTIVARIATE ANALYSIS

Calculation of Bayes premium for conditional elliptical risks. Kume, Alfred; Hashorva, Enkelejd [RKN: 43681]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **51(3)** : 632-635.

In this paper the authors discuss the calculation of the Bayes premium for conditionally elliptical multivariate risks. In our framework the prior distribution is allowed to be very general requiring only that its probability density function satisfies some smoothness conditions. Based on the previous results of Landsman and Nešlehová (2008) [Z. Landsman, J. Nešlehová (2008), Stein's lemma for elliptical random vectors, Journal of Multivariate Analysis, 99, 912-927] and Hamada and Valdez (2008) [M. Hamada, E.A. Valdez (2008), CAPM and option pricing with elliptically contoured distributions, Journal of Risk & Insurance, 75,

387-409], the authors show in this paper that for conditionally multivariate elliptical risks the calculation of the Bayes premium is closely related to the Brown identity and the celebrated Stein's lemma.
http://www.openathens.net/

NETTING EFFECTS

Fallacy of moving the OTC derivatives market to CCPs : Comment. Singh, Manmohan [RKN: 45713]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 314-318.
Recent regulatory efforts, especially in the USA and Europe, are aimed at reducing moral hazard so that the next financial crisis is not bailed out by tax payers. This paper suggests that the regulatory proposals may not remove systemic risk from over-the-counter (OTC) derivatives but rather shift it from banks to central counterparties (CCPs). Furthermore, another taxpayer bailout cannot be ruled out. This paper also suggests that a tax on the derivative liabilities of large banks would address the source of the problem (ie under-collateralisation), and make the OTC derivatives market safer. We also show that, as a by-product, this suggestion would lower CDS spreads in distressed sovereigns.

NHS

Enterprise risk management for health insurance from an actuarial perspective. Orros, G C; Smith, J - 56 pages. [RKN: 70180]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (2)** : 259-314.
This paper focuses on Enterprise Risk Management (ERM) and strategic business management for health insurance companies in our world of 'unknown unknowns' and the emergence of unexpected risks over time. It illustrates how Chief Risk Officers (CROs) can focus on 'risk and opportunity management' through an ERM framework, and thereby balance risks against opportunities, whilst being resilient against 'unknown unknowns' and their emergence over time as 'known unknowns' and 'known knowns'. The paper has been designed to meet the broad requirements of health insurers that would like to implement an ERM framework for the effective risk management of their health insurance lines of business. Risk management for health insurers in the context of Solvency II and broader European Commission regulatory requirements is also discussed. The authors discuss how insurers can develop and apply risk management to build resilience in the face of the storms and shocks that may lie ahead.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Enterprise risk management for health insurance from an actuarial perspective : Abstract of the London discussion. Orros, G C - 16 pages. [RKN: 70181]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (2)** : 315-330.
London discussion, 18 January 2011.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

OCCUPATIONAL HEALTH

Loss reduction through worker satisfaction : The case of worker's compensation. Butler, Richard J; Johnson, William G - 26 pages. [RKN: 74767]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (1)** : 1-26.
A prospective study of occupational low back pain (LBP) indicates loss reduction efforts in workers' compensation that improve workers satisfaction with the treatment of their claim significantly improves levels of recovery (reduces losses) and lowers workers' compensation insurance costs. The improved outcomes associated with greater worker satisfaction with the firm's treatment of their injury claim, as well as with the treatment from their health care provider, are robust to five alternative measures of back problems, including leg pain and back pain scales, measures of functional limitation, and quality of life scales. Satisfaction with effectiveness of the health care is more important in recovery than satisfaction with the provider's bedside manner. While satisfaction with health care provider significantly improves back pain and functionality at 6 months, satisfaction with the employer's treatment of the claim is equally important at 6 months and grows in quantitative importance at 1 year. Overall, higher satisfaction with claim treatment reduces the likelihood that an injury becomes an indemnity claim and results in almost a 30 percent reduction in claim costs.
http://www.openathens.net

OPTIMAL REINSURANCE

Enhancing insurer value using reinsurance and value-at-risk criterion. Tan, Ken Seng; Weng, Chengguo - 32 pages. [RKN: 74944]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (1)** : 109-140.
The quest for optimal reinsurance design has remained an interesting problem among insurers, reinsurers, and academicians. An appropriate use of reinsurance could reduce the underwriting risk of an insurer and thereby enhance its value. This paper complements the existing research on optimal reinsurance by proposing another model for the determination of the optimal reinsurance design. The problem is formulated as a constrained optimization problem with the objective of minimizing the value-at-risk of the net risk of the insurer while subjecting to a profitability constraint. The proposed optimal reinsurance model,

therefore, has the advantage of exploiting the classical tradeoff between risk and reward. Under the additional assumptions that the reinsurance premium is determined by the expectation premium principle and the ceded loss function is confined to a class of increasing and convex functions, explicit solutions are derived. Depending on the risk measure's level of confidence, the safety loading for the reinsurance premium, and the expected profit guaranteed for the insurer, we establish conditions for the existence of reinsurance. When it is optimal to cede the insurer's risk, the optimal reinsurance design could be in the form of pure stop-loss reinsurance, quota-share reinsurance, or a combination of stop-loss and quota-share reinsurance.

Optimal insurance under multiple sources of risk with positive dependence. Lu, ZhiYi; Liu, LePing; Meng, LiLi [RKN: 44866]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **51(2)** : 462-471.

In this paper we try to derive an optimal insurance treaty when the insured faces multiple sources of risk. We show that the deductible insurance is optimal when the insurable and uninsurable risks are positively dependent or independent within the expected utility framework. A necessary condition of optimal deductible is given under some mild conditions. We compare our model with the classical one without background risk. Furthermore, the shifts of optimal deductible and expected utility by modifications of the dependence structure and the marginal are analyzed.
http://www.openathens.net/

OPTION PRICING

Computing bounds on the expected payoff of Alternative Risk Transfer products. Villegas, Andrés M; Medaglia, Andrés L; Zuluaga, Luis F [RKN: 44786]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **51(2)** : 271-281.

The demand for integrated risk management solutions and the need for new sources of capital have led to the development of innovative risk management products that mix the characteristics of traditional insurance and financial products. Such products, usually referred as Alternative Risk Transfer (ART) products include: (re)insurance contracts that bundle several risks under a single policy; multi-trigger products where the payment of benefits depends upon the occurrence of several events; and insurance linked securities that place insurance risks in the capital market. Pricing of these complex products usually requires tailor-made complex valuation methods that combine derivative pricing and actuarial science techniques for each product, as well as strong distributional assumptions on the ART's underlying risk factors. We present here an alternative methodology to compute bounds on the price of ART products when there is limited information on the distribution of the underlying risk factors. In particular, we develop a general optimization-based method that computes upper and lower price bounds for different ART products using market data and possibly expert information about the underlying risk factors. These bounds are useful when the structure of the product is too complex to develop analytical or simulation valuation methods, or when the scarcity of data makes it difficult to make strong distributional assumptions on the risk factors. We illustrate our results by computing bounds on the price of a floating retention insurance contract, and a catastrophe equity put (CatEPut) option.
http://www.openathens.net/

ORGANISATION AND METHODS

Risk management in organizations: An integrated case study approach. Woods, Margaret (2011). - Abingdon: Routledge, 2011. - 176 pages. [RKN: 73675]
Shelved at: 658.15

In this accessible textbook the author sets the world of risk management in the context of the broader corporate governance agenda, as well as explaining the core elements of a risk management system. Material on the differences between risk management and internal auditing is supplemented by a section on the professionalization of risk – a relatively contemporary evolution. Enterprise risk management is also fully covered.

With a detailed array of risk management cases – including Tesco, RBS and the UK government – lecturers will find this a uniquely well researched resource, supplemented by materials that enable the cases to be easily integrated into the classroom. Risk managers will be delighted with the case materials made available for the first time with the publication of this book.

PAYMENT SYSTEMS

Is the build-up of TARGET2 balances a question of self-contained risk?. Ulbrich, Jens; Lipponer, Alexander [RKN: 45847]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(4)** : 390-397.

This paper argues that imbalances in the TARGET2 payment system are a symptom of the current financial crisis and not subject to self-contained risk. Any risk for the Eurosystem ultimately arises from liquidity provision and not from the redistribution of pre-existing liquidity. If the risk element is to be reduced, the extraordinary monetary policy measures of the Eurosystem will have to be addressed and reversed as soon as possible. Especially in a monetary union of sovereign member states it cannot be the task of an independent monetary policy to reallocate solvency risks among taxpayers across the currency area. Therefore, the role of the Eurosystem in tackling the current crisis should not be overstretched. At the end of the day, it is up to the member countries and not the central banks to resolve the crisis.
http://www.openathens.net

PENSION FUNDS

Entity-wide risk management for pension funds. Kemp, Malcolm H D; Patel, C C (2011). - London: Institute and Faculty of Actuaries, 2011. - 74 pages. [RKN: 73665]
Shelved at: JOU

Presented to the Institute and Faculty of Actuaries on 21 February 2011 (Edinburgh) and 28 February 2011 (London).
This paper explores the application of ERM-style techniques to pension funds. It used the term 'entity-wide risk management' rather than 'enterprise risk management', even though both have the same acronym ('ERM'), because many pension funds do not view themselves as business 'enterprises' as such. Some of the techniques that business enterprises have for managing risk (e.g. raising new capital from shareholders or branching into new business areas if existing ones have unattractive risk-reward characterisitics) may not be open to many pension fund. The paper argues that the holistic approach to risk management (and governance) that is a hallmark of ERM is as appropriate to pension funds as it is to any other type of entity. This is the case whether the fund is defined benefit or defined contribution in nature, or a hybrid. It is also the case whether the 'entity' is deemed to be the fund itself, the
sponsor or the two combined. Indeed, there are aspects of pension arrangements, such as the
relationship between the fund and its sponsor, that lend added impetus to the use of ERM-style
techniques in practical pension fund management.
http://www.actuaries.org.uk/research-and-resources/documents/entity-wide-risk-management-pension-funds

Salary linked home finance: reducing interest rate, inflation and idiosyncratic salary risks. Asher, Anthony [RKN: 43244]
Australian Actuarial Journal (2011) **17(1)** : 117-148.

This paper provides some results of a recently completed PhD thesis undertaken by the author. Initial results were presented at the Institute of Actuaries [of Australia] Biennial Convention.
It is possible to develop an alternative housing finance instrument that matches the cash flow, and reduces the risks faced, by homeowners and pension funds. The instrument would also reduce the liquidity constraints faced by new and existing homeowners, and eliminate the cash flow tilt imposed by high inflation. Moral hazard and anti-selection risks are likely to restrict the market to employees of large institutions, but such an instrument would encourage greater flows of funds from superannuation into housing. Other obstacles to its introduction can be overcome.
http://www.actuaries.asn.au/TechnicalResources/ActuaryJournals.aspx

PENSIONS

An empirical analysis of the effect of financial education on graduating business students' perceptions of their retirement planning familiarity, motivation, and preparedness. Power, Mark L; Hobbs, Jonathan M; Ober, Ashley - 17 pages. [RKN: 74771]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (1)** : 89-105.

Today's multifaceted and dynamic financial environment requires a high level of individual financial literacy to ensure that sound financial behaviors are the norm. Unfortunately, many individuals have limited knowledge regarding financial issues and are ill prepared to make sound financial choices. The purpose of this article was to benchmark and then determine if graduating business students' perception of their retirement planning familiarity, motivation, and preparedness improved after taking a semester-long course in Personal Risk Management and Insurance (PRMI). We discovered that business students were more financially literate than nonbusiness students and that business students' familiarity with retirement plans and personal level of readiness to make retirement planning decisions improved significantly after taking the principles class. Specifically, we showed that only 15.8 percent and 42.3 percent of the nonbusiness and business control students, respectively, felt adequately prepared to make retirement decisions, while 82 percent of the business students who completed the PRMI class felt prepared. Ex post, graduating seniors who were exposed to coursework covering life-cycle risks and options to treat those risks perceived that they are leaving college with a better ability to meet the financial challenges that await them. Last, we showed that significant differences existed in retirement plan and investment familiarity based on gender. Our findings provide support for including financial literacy as a general education requirement at colleges and universities.
http://www.openathens.net

Entity-wide risk management for pension funds
. Kemp, M H D; Patel, C C - 64 pages. [RKN: 70185]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (2)** : 331-394.

This paper explores the application of ERM-style techniques to pension funds. It uses the term 'entity-wide risk management' rather than 'enterprise risk management', even though both have the same acronym ('ERM'), because many pension funds do not view themselves as business 'enterprises' as such. Some of the techniques that business enterprises have for managing risk (e.g. raising new capital from shareholders or branching into new business areas if existing ones have unattractive risk-reward characteristics) may not be open to many pension funds. The paper argues that the holistic approach to risk management (and governance) that is a hallmark of ERM is as appropriate to pension funds as it is to any other type of entity. This is the case whether the fund is defined benefit or defined contribution in nature, or a hybrid. It is also the case whether the 'entity' is deemed to be the fund itself, the sponsor or the two combined. Indeed, there are aspects of pension arrangements, such as the relationship between the fund and its sponsor, that lend added impetus to the use of ERM-style techniques in practical pension fund management.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Entity-wide risk management for pension funds : Abstract of the Edinburgh discussion. Kemp, M H D - 18 pages. [RKN: 70186]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (2)** : 395-412.

Edinburgh discussion, 21 February 2011
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Entity-wide risk management for pension funds : Abstract of the London discussion. Kemp, M H D - 22 pages. [RKN: 70195]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (2)** : 413-434.
London discussion, 28 February 2011
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Longevity risk management in Singapore's national pension system. Fong, Joelle H Y; Mitchell, Olivia S; Koh, Benedict S K - 22 pages. [RKN: 74879]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2011) **78 (4)** : 961–982.
Available online via Athens
Although annuities are a theoretically appealing way to manage longevity risk, in the real world relatively few consumers purchase them at retirement. To counteract the possibility of retirees outliving their assets, Singapore's Central Provident Fund, a national defined contribution pension scheme, has recently mandated annuitization of workers' retirement assets. More significantly, the government has entered the insurance market as a public-sector provider for such annuities. This article evaluates the money's worth of life annuities and discusses the impact of the government mandate and its role as an annuity provider on the insurance market.
http://www.openathens.net

Revised version of: Solvency requirement for a long-term guarantee: risk measures versus probability of ruin. Devolder, Pierre [RKN: 44833]
Shelved at: online only
European Actuarial Journal (2011) **1(2) November** : 199-214.
Available online via Athens -- Published online, 22 December 2011
Solvency requirements are based on the idea that risk can be accepted if enough capital is present. The determination of this minimum level of capital depends on how we consider and measure the underlying risk. Apart from the kind of risk measure used, an important factor is how time is integrated in the process. This topic is particularly important for long-term liabilities such as life insurance or pension benefits. In this paper we study the market risk of a life insurer offering a fixed guaranteed rate on a certain time horizon and investing the premium in a risky fund. We develop and compare various risk measurements based either on a single point analysis or on a continuous-time test. Dynamic risk measures are also considered.
http://www.openathens.net

Tax incentives and household investment in complementary pension insurance : Some recent evidence from the Italian experience. Marino, Immacolata; Pericoli, Filippo; Ventura, Luigi - 17 pages. [RKN: 74764]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (2)** : 247-263.
We show by a simple difference-in-difference methodology that, contrary to prior research, robustly raising the deductibility limit associated to pension fund holdings in Italy did not succeed in boosting households' contributions to this form of savings. Some other empirical findings also suggest that this policy measure may have not even increased the average amount of first-time contributors to such funds. In view of the specific features of the Italian market for complementary insurance (relatively young and less developed), these empirical results might be of interest to policymakers acting in countries with similar features (for instance, some of the more recent EU members).
http://www.openathens.net

PERFORMANCE

Dupes or incompetents? An examination of management's impact on firm distress. Leverty, J Tyler; Grace, Martin F - 33 pages. [RKN: 70415]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2012) **79 (3)** : 751-783.
Available online via Athens
This article examines whether managers impact firm performance. We conservatively define managerial ability as the manager's capacity to deploy the firm's resources. We verify the validity of our metric using a manager–firm matched panel data set that allows us to track managers (CEOs) across different firms over time. We find managerial ability is inversely related to the amount of time a firm spends in distress, the likelihood of a firm's failure, and the cost of failure. These results suggest that the managers of failed firms are less skilled than their counterparts. But even within failed firms there is heterogeneity in the talents of managers.
http://www.openathens.net

POLICIES

Do administrators have the same priorities for risk reductions as the general public?. Carlsson, Fredrik; Daruvala, Dinky; Jaldell, Henrik Springer, [RKN: 45856]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **45 (1)** : 79-95.
A stated preference survey was used to investigate the potential discrepancy between the priorities of public administrators and the general public regarding risk reductions. Both groups of respondents were asked to assume the role of a public policy-maker and choose between different public safety projects. We investigate differences in three areas: (i) large vs. small accidents, (ii) actual vs. subjective risk, and (iii) the trade-off between avoiding fatalities and serious injuries for different age groups and accidents. We find only minor differences between the responses of administrators and the general public, the most important of which is the difference in priorities between reducing the risk of many small or one large accident. In this area the most common

response from the general public is that they prefer avoiding many small accidents rather than one large accident while among the administrators there is almost an equal split between the two options.
http://www.openathens.net

The effects and risks of quantitative easing. Mortimer-Lee, Paul [RKN: 45846]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(4)** : 372-389.
Quantitative easing (QE) comes in many forms, each tailored to the specific needs of the region in question. What they all have in common, though, is that they are the result of the failure of conventional policy to deliver the outcomes policymakers want. There are many risks associated with unconventional tools such as QE and a number of drawbacks. But central banks around the world have taken risks with the future in a bid to avoid adverse consequences today or tomorrow. They hope that by the time QE draws to an end, they, the markets, the financial system and the wider economy will be able to manage those risks effectively. Whether they can remains to be seen.
http://www.openathens.net

Is the build-up of TARGET2 balances a question of self-contained risk?. Ulbrich, Jens; Lipponer, Alexander [RKN: 45847]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(4)** : 390-397.
This paper argues that imbalances in the TARGET2 payment system are a symptom of the current financial crisis and not subject to self-contained risk. Any risk for the Eurosystem ultimately arises from liquidity provision and not from the redistribution of pre-existing liquidity. If the risk element is to be reduced, the extraordinary monetary policy measures of the Eurosystem will have to be addressed and reversed as soon as possible. Especially in a monetary union of sovereign member states it cannot be the task of an independent monetary policy to reallocate solvency risks among taxpayers across the currency area. Therefore, the role of the Eurosystem in tackling the current crisis should not be overstretched. At the end of the day, it is up to the member countries and not the central banks to resolve the crisis.
http://www.openathens.net

Single-year and multi-year insurance policies in a competitive market. Kleindorfer, Paul R; Kunreuther, Howard; Ou-Yang, Chieh Springer, [RKN: 45855]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **45 (1)** : 51-78.
This paper examines the demand and supply of annual and multi-year insurance contracts with respect to protection against a catastrophic risk in a competitive market. Insurers who offer annual policies can cancel policies at the end of each year and change the premium in the following year. Multi-year insurance has a fixed annual price for each year and no cancellations are permitted at the end of any given year. Homeowners are identical with respect to their exposure to the hazard. Each homeowner determines whether or not to purchase an annual or multi-year contract so as to maximize her expected utility. The competitive equilibrium consists of a set of prices where homeowners who are not very risk averse decide to be uninsured. Other individuals demand either single-year or multi-year policies depending on their degree of risk aversion and the premiums charged by insurers for each type of policy.
http://www.openathens.net

PORTFOLIO MANAGEMENT

Risk-reward optimisation for long-run investors: an empirical analysis. Gilli, Manfred; Schumann, Enrico [RKN: 44823]
Shelved at: online only
European Actuarial Journal (2011) **1(1) Supplement 2** : 303-327.
Available online via Athens -- Selected paper presented during the 19th International Actuarial Association AFIR Colloquium in Munich, Germany, 2009
A common approach in portfolio selection is to characterise a portfolio of assets by a desired property, the reward, and something undesirable, the risk. These properties are often identified with mean and variance of returns, respectively, even though, given the non-Gaussian nature of financial time series, alternative specifications like partial and conditional moments, quantiles, and drawdowns seem theoretically more appropriate. We analyse the empirical performance of portfolios selected by optimising risk–reward ratios constructed from such alternative functions. We find that in many cases these portfolios outperform our benchmark (minimum-variance), in particular when long-run returns are concerned. We also find, however, that all the strategies tested (including minimum-variance) are sensitive to relatively small changes in the data. The main theme throughout our analysis is that minimising risk, as opposed to maximising reward, leads to good out-of-sample performance. Adding a reward-function to the selection criterion usually improves a given strategy only marginally.
http://www.openathens.net

PPOS

Living legacy. Carswell, Wilson Staple Inn Actuarial Society, - 2 pages. [RKN: 70765]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **July** : 24-25.
Dr Wilson Carswell looks at the causal link between the untimely death of Lawrence of Arabia and Periodic Payment Orders (PPOs).
http://www.theactuary.com/

PREMIUM RESERVES

Risk processes with dependence and premium adjusted to solvency targets. Constantinescu, Corina; Maume-Deschamps, Véronique; Norberg, Ragnar [RKN: 44838]
Shelved at: online only
European Actuarial Journal (2012) **2(1) July** : 1-20.
Available online via Athens -- Published online, July 2012
This paper considers risk processes with various forms of dependence between waiting times and claim amounts. The standing assumption is that the increments of the claims process possess exponential moments so that variations of the Lundberg upper bound for the probability of ruin are in reach. The traditional point of view in ruin theory is reversed: rather than studying the probability of ruin as a function of the initial reserve under fixed premium, the problem is to adjust the premium dynamically so as to obtain a given ruin probability (solvency requirement) for a fixed initial reserve (the financial capacity of the insurer). This programme is carried through in various models for the claims process, ranging from Cox processes with i.i.d. claim amounts, to conditional renewal (Sparre Andersen) processes.
http://www.openathens.net

Threshold dividend strategies for a Markov-additive risk model. Breuer, Lothar [RKN: 44835]
Shelved at: online only
European Actuarial Journal (2011) **1(2) November** : 237-258.
Available online via Athens -- Published online, 22 December 2011
We consider the following risk reserve model. The premium income is a level dependent Markov-modulated Brownian motion. Claim sizes are iid with a phase-type distribution. The claim arrival process is a Markov-modulated Poisson process. For this model the payment of dividends under a threshold dividend strategy and the time until ruin will be analysed.
http://www.openathens.net

PRESIDENT'S COMMENT

A weather eye on risk strategy. Scott, Philip Staple Inn Actuarial Society, - 1 pages. [RKN: 70683]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **September** : 7.
Climate change's influence on actuarial disciplines can help us to understand risk, suggests Philip Scott
http://www.theactuary.com/

PRICE COMPETITION

Raising capital in an insurance oligopoly market. Hardelin, Julien; Lemoyne de Forges, Sabine - 26 pages. [RKN: 74943]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (1)** : 83-108.
We consider an oligopoly market where firms offer insurance coverage against a risk characterised by aggregate uncertainty. Firms behave as if they were risk averse for a standard reason of costly external finance. The model consists in a two-stage game where firms choose their internal capital level at stage one and compete on price at stage two. We characterise the subgame perfect Nash equilibria of this game and focus attention on the strategic impact of insurers capital choice. We discuss the model with regard to the insurance industry specificities and regulation.

PRICING

Canonical valuation of mortality-linked securities. Li, Johnny Siu-Hang; Ng, Andrew Cheuk-Yin - 32 pages. [RKN: 74875]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2011) **78 (4)** : 853–884.
Available online via Athens
A fundamental question in the study of mortality-linked securities is how to place a value on them. This is still an open question, partly because there is a lack of liquidly traded longevity indexes or securities from which we can infer the market price of risk. This article develops a framework for pricing mortality-linked securities on the basis of canonical valuation. This framework is largely nonparametric, helping us avoid parameter and model risk, which may be significant in other pricing methods. The framework is then applied to a mortality-linked security, and the results are compared against those derived from other methods.
http://www.openathens.net

An insurance pricing game. Haley, Joseph D - 12 pages. [RKN: 73824]
Shelved at: JOU
Risk Management and Insurance Review (2012) **15 (1)** : 117-128.
Understanding data and statistical distributions is a fundamental part of an undergraduate business student's education. The insurance pricing game presented here gives the students a unique way to apply statistical analysis in the classroom. The game requires decision making about risk with limited information. Specifically, the students must decide what “premium” to charge the members of a hypothetical risk pool. The game provides teachers with a discussion platform for numerous aspects of insurer risk pooling.
http://www.openathens.net

On the valuation of investment guarantees in unit-linked life insurance: a customer perspective. Gatzert, Nadine; Huber, Carin; Schmeiser, Hato Palgrave Macmillan, [RKN: 39974]
Shelved at: Per: Geneva (Oxf)
Geneva Papers on Risk and Insurance (2011) **36(1)** : 3-29.

Available online via Athens

Interest rate guarantees in unit-linked life insurance products ensure that at contract maturity, at least a minimum guaranteed amount is paid, even if the mutual fund falls below the guaranteed level. Strongly depending on the riskiness of the underlying mutual fund, these guarantees can be of substantial value. However, while insurer pricing is based on the replication of cash flows, customers are more likely to base their decisions on individual preferences. The aim of this paper is to contrast reservation prices for guarantees in unit-linked life insurance policies based on customers' subjective willingness to pay with a financial pricing approach, an investigation that has not been undertaken to date. To do so, we use an online questionnaire survey and calculate reservation prices using option pricing theory. Our findings reveal that even though the majority of the participants in the online questionnaire are employed in the field of insurance, subjective prices are difficult to derive and are significantly lower on average than the prices obtained using a financial pricing model. However, a considerable portion of participants is still willing to pay a substantially higher price.

http://www.openathens.net

PROBABILITY

Ambiguity aversion and familiarity bias : Evidence from behavioral and gene association studies. Chew, Soo Hong; Ebstein, Richard P; Zhong, Songfa Springer, [RKN: 45591]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **44 (1)** : 1-18.

It is increasingly recognized that decision making under uncertainty depends not only on probabilities, but also on psychological factors such as ambiguity and familiarity. Using 325 Beijing subjects, we conduct a neurogenetic study of ambiguity aversion and familiarity bias in an incentivized laboratory setting. For ambiguity aversion, 49.4% of the subjects choose to bet on the 50–50 deck despite the unknown deck paying 20% more. For familiarity bias, 39.6% choose the bet on Beijing's temperature rather than the corresponding bet with Tokyo even though the latter pays 20% more. We genotype subjects for anxiety-related candidate genes and find a serotonin transporter polymorphism being associated with familiarity bias, but not ambiguity aversion, while the dopamine D5 receptor gene and estrogen receptor beta gene are associated with ambiguity aversion only among female subjects. Our findings contribute to understanding of decision making under uncertainty beyond revealed preference.

Viewing the future through a warped lens: Why uncertainty generates hyperbolic discounting. Epper, Thomas; Fehr-Duda, Helga; Bruhin, Adrian Springer, [RKN: 45528]
Journal of Risk and Uncertainty (2011) **43 (3)** : 169-203.

A large body of experimental research has demonstrated that, on average, people violate the axioms of expected utility theory as well as of discounted utility theory. In particular, aggregate behavior is best characterized by probability distortions and hyperbolic discounting. But is it the same people who are prone to these behaviors? Based on an experiment with salient monetary incentives we demonstrate that there is a strong and significant relationship between greater departures from linear probability weighting and the degree of decreasing discount rates at the level of individual behavior. We argue that this relationship can be rationalized by the uncertainty inherent in any future event, linking discounting behavior directly to risk preferences. Consequently, decreasing discount rates may be generated by people's proneness to probability distortions.

PROBABILITY DISTORTION

Iterative adjustment of survival functions by composed probability distortion. Bienvenue, Alexis; Rullière, Didier - 24 pages. [RKN: 70261]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (2)** : 156-179.

We introduce a parametric class of composite probability distortions that can be combined to converge to a target survival function. These distortions respect analytic invertibility and stability, which are shown to be relevant in many actuarial fields. We study the asymptotic impact of such distortions on hazard rates. The paper provides an estimation methodology, including hints for initialisation. Some applications to survival data bring results for catastrophic event impact modelling. We also obtain accurate parametric representations of the mortality trend over years. Finally, we suggest a prospective mortality simulation model that comes naturally from the above analysis.

PROPERTY INSURANCE

An analysis of contingent commission use by property-liability insurers. Colquitt, L Lee; McCullough, Kathleen A; Sommer, David W - 15 pages. [RKN: 74760]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (2)** : 157-171.

The payment of contingent commissions in the property–liability insurance industry has long been commonplace, but recent events have made the practice highly controversial. Even prior to these events, wide variation existed among insurers in their use of contingent commissions. In this article, we examine the determinants of whether or not an insurer chooses to pay contingent commissions at all, as well as the determinants of the extent of their use for those insurers that pay them. We find a number of variables that have a significant relation to the use and extent of use of contingent commissions.

http://www.openathens.net

Are territorial rating models outdated in residential property insurance markets? : Evidence from the Florida property insurance market. Nyce, Charles; Maroney, Patrick - 32 pages. [RKN: 74762]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (2)** : 201-232.

The fundamental shift in rating methodology from historical loss costs to catastrophe modeling for windstorm coverage calls into question the accuracy of rates developed using rating territories. Using premiums and modeled average annual loss (AAL) estimates from Citizens Property Insurance Corporation (Citizens) in Florida, this article analyzes the use of distance to coast (DtC) as a rating variable in providing coverage for the windstorm peril in homeowners insurance. Catastrophe models used to generate AAL costs do not rely on the same application of the law of large numbers as using historical loss costs and thus allows for more granular pricing of the windstorm peril. The results show that DtC, a rating variable that is property specific, more closely aligns premiums and AALs than territorial rating, and allows more granular pricing of the windstorm peril. More granular risk based pricing provides better incentives for homeowners regarding location and mitigation choices and may help reduce aggregate exposure to windstorm damages in the long run.
http://www.openathens.net

Conversion and efficiency performance changes: evidence from the U.S. property-liability insurance industry. Chen, Lih-Ru; Lai, Gene C; Wang, Jennifer L [RKN: 45273]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (1)** : 1-35.

This study investigates whether the conversion of U.S. property-liability insurers improves their efficiency performance before and after the conversion. We estimate relative efficiency of converting insurers and control insurers using data envelopment analysis. The Malmquist analysis is also used to measure changes in efficiency pre- and post-conversion. The evidence shows that converting insurers experience larger gains in cost efficiency and total productivity change than mutual control insurers before conversion. In addition, the empirical results indicate that converting insurers improve efficiency after conversion. These results are robust with respect to both the value-added and the financial intermediary approaches. The overall results support the efficiency hypothesis proposed by Mayers and Smith (1986).

Risk valuation of property-casualty insurers. Major, John A [RKN: 43603]
Shelved at: Per: Variance
Variance (2011) **5(2)** : 124-140.

Risk valuation is the process of assigning a monetary value to a transformation of risk. Risk transformation can come about through changes in the operation of a business, explicit risk transfer mechanisms, financial changes, etc. This paper reviews the application of valuation techniques to address the question: “Does this risk transformation create or destroy shareholder value?” Four broad classes of valuation models are compared: actuarial appraisal/valuation, economic capital, firm life annuity, and optimal dividends. Their key differences are seen to lie in their treatment of the firm’s mortality and the circumstances under which recapitalization can occur.
http://www.variancejournal.org/issues

PROSPECT THEORY

Corporate management of highly dynamic risks: : Evidence from the demand for terrorism insurance in Germany. Thomann, Christian; Pascalau, Razvan; von der Schulenburg, J Mattias Graf - 26 pages. [RKN: 74942]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (1)** : 57-82.

This paper investigates a corporation's risk management response to highly dynamic risks. Using a unique data set on the German terrorist insurance market, the paper tests whether corporate risk managers have a clear understanding of the probability distribution of highly dynamic risks or if risk managers learn from severe losses and base their decisions upon day-to-day experience. The paper further investigates whether risk managers become more confident in their risk management decisions over time. For this purpose, we apply Viscusi's prospective reference theory to a corporate context. We find that firms learn from single events when making their risk management decisions, and that risk managers become more confident with their risk management decisions over time.

A genuine foundation for prospect theory. Schmidt, Ulrich; Zank, Horst Springer, - 17 pages. [RKN: 70232]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **45 (2)** : 97-113.

In most models of (cumulative) prospect theory, reference dependence of preferences is imposed beforehand and the location of the reference point is determined exogenously. This paper presents principles that provide critical tests and foundations for prospect theory preferences without assuming reference-dependent preferences a priori. Instead, reference dependence is derived from behavior and the reference point arises endogenously.
http://www.openathens.net

PRUDENCE

Beyond risk aversion: Why, how and what's next? : EGRIE Keynote Address. Eeckhoudt, Louis - 15 pages. [RKN: 70260]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (2)** : 141-155.

Risk attitudes other than risk aversion (e.g. prudence and temperance) are becoming important both in theoretical and empirical work. While the literature has mainly focused its attention on the intensity of such risk attitudes (e.g. the concepts of absolute prudence and absolute temperance), I consider here an alternative approach related to the direction of these attitudes (i.e. the sign of the successive derivatives of the utility function).

PSYCHOLOGY

Ambiguity aversion and familiarity bias : Evidence from behavioral and gene association studies. Chew, Soo Hong; Ebstein, Richard P; Zhong, Songfa Springer, [RKN: 45591]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **44 (1)** : 1-18.

It is increasingly recognized that decision making under uncertainty depends not only on probabilities, but also on psychological factors such as ambiguity and familiarity. Using 325 Beijing subjects, we conduct a neurogenetic study of ambiguity aversion and familiarity bias in an incentivized laboratory setting. For ambiguity aversion, 49.4% of the subjects choose to bet on the 50–50 deck despite the unknown deck paying 20% more. For familiarity bias, 39.6% choose the bet on Beijing's temperature rather than the corresponding bet with Tokyo even though the latter pays 20% more. We genotype subjects for anxiety-related candidate genes and find a serotonin transporter polymorphism being associated with familiarity bias, but not ambiguity aversion, while the dopamine D5 receptor gene and estrogen receptor beta gene are associated with ambiguity aversion only among female subjects. Our findings contribute to understanding of decision making under uncertainty beyond revealed preference.

QUANTITATIVE METHODS

The effects and risks of quantitative easing. Mortimer-Lee, Paul [RKN: 45846]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(4)** : 372-389.

Quantitative easing (QE) comes in many forms, each tailored to the specific needs of the region in question. What they all have in common, though, is that they are the result of the failure of conventional policy to deliver the outcomes policymakers want. There are many risks associated with unconventional tools such as QE and a number of drawbacks. But central banks around the world have taken risks with the future in a bid to avoid adverse consequences today or tomorrow. They hope that by the time QE draws to an end, they, the markets, the financial system and the wider economy will be able to manage those risks effectively. Whether they can remains to be seen.
http://www.openathens.net

RANDOM WALK MODEL

Second order asymptotics for ruin probabilities in a renewal risk model with heavy-tailed claims. Lin, Jianxi [RKN: 44861]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **51(2)** : 422-429.

In this paper, we establish the second order asymptotics of ruin probabilities of a renewal risk model under the condition that the equilibrium distribution of claim sizes belongs to a rather general heavy-tailed distribution subclass—the class of second order subexponential distributions with finite mean. What is more, this requirement is proved to be necessary. Furthermore, a rather general sufficient condition on the claim size distribution itself is presented. Moreover, an extension to the case of random walk is also included.
http://www.openathens.net/

REAL ESTATE

Commercial real estate stress testing in community banks: The low stress kind. Jones, Brian W [RKN: 45849]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(4)** : 421-431.

Stress testing has been identified as the most effective method currently available for analysing concentrations in banking portfolios. For community banks, stress testing does not need to be overly complex or involved. In today's constantly evolving regulatory environment, community banks must understand the increasing risk inherent in their lending portfolio. Whether commercial real estate (CRE) stress testing is performed on an internal basis or by a vendor it remains an important tool in evaluating risk. The process itself brings important benefits in structuring of loan data and quantifying the portfolio's risks. This article will present a framework for understanding and performing CRE stress testing in community banks that is gradative in practice and, in some respects, goes beyond the standards adopted by regulators.
http://www.openathens.net

REGULATION

The Basel III and beyond. Cannata, Francesco; Quagliariello, Mario (2011). Risk Books, 2011. - 510 pages. [RKN: 74705]
Shelved at: 519.287

Around the world, central bankers, regulators and governments have responded to the financial crisis with new regulation and legislation. The cornerstone of this global initiative to contain risk is Basel III – sweeping new regulatory standards for banks on capital adequacy and liquidity.

These new standards will define markets and their practices for decades to come. Already, they are reshaping institutions, business models and balance sheets.

Understanding Basel III and the thinking behind it is essential for market participants and for those charged with implementing the standards. In Basel III and Beyond, the first book-length treatment of Basel III, editors Mario Quagliariello of the European Banking Authority and Francesco Cannata of the Bank of Italy have assembled contributors from regulators and central banks involved in preparing the standards including a foreword from Mario Draghi, President of the European Central Bank.

Key chapters describe and analyse the new elements of Basel III, as well as detailing important revisions to the 2004 accord. Written by the regulators themselves, Basel III and Beyond is the essential guide to the new global banking standards.

Comparison of stakeholder perspectives on current regulatory and reporting reforms. Wagner, Joël; Zemp, Alexandra - 30 pages. [RKN: 70640]
Shelved at: JOU
Risk Management and Insurance Review (2012) **15 (2)** : 225-254.

Available online via Athens: Wiley Online Library

In the European insurance industry, regulatory and reporting frameworks are currently subject to far-reaching reforms. We focus on four of these frameworks, namely the Solvency II framework, insurance guaranty systems, the proposed IFRS 4 Phase II international accounting standards, and Market Consistent Embedded Value reporting. We present these frameworks, analyze them from the insurance company's management, investors, and policyholder perspectives, and compare them. Our analysis implies that the four frameworks need to be considered jointly, due to various interrelations and interactions. We argue that a coordinated introduction will be necessary to ensure that the regulatory burden is reduced and synergies can be utilized in the event of all four frameworks being implemented as planned. Furthermore, we analyze the challenges of a holistic, comprehensive approach to insurance reporting and regulation and its implementation in order to achieve the goals set by the frameworks.
http://www.openathens.net

Evaluation of the Basel VaR-based market risk charge and proposals for a needed adjustment. Fricke, Jens; Pauly, Ralf [RKN: 45848]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(4)** : 398-420.

This analysis shows that in high risk situations the Basel II guidelines fail in the attempt to cushion against large losses by higher capital requirements. One of the factors causing this problem is that the built-in positive incentive of the penalty factor resulting from the Basel backtesting is set too weak. Therefore, this paper proposes a new procedure for market risk regulation and it demonstrates how this works with real time series. A comparison study shows that contrary to the existing Basel regulation the proposition presented here has the intended quality as a built-in incentive for choosing a reliable forecasting model. By including the expected shortfall as a further measure of risk this paper's concept yields a steeper increase of the penalty factor and as a consequence a stronger effect of risk underestimation on the capital requirement. The recent proposal of the Basel Committee on Banking Supervision may have the same weakness as the Basel II regulation because it is constructed in an analogous manner.
http://www.openathens.net

Exposure to risk : Letter to the editor. Pepper, Anthony Staple Inn Actuarial Society, - 1 pages. [RKN: 73902]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2011) **August** : 6.

Contends that the Financial Ombudsman service is not properly demonstrating the level of cases that might be considered exposed to risk in its reporting.
http://www.theactuary.com/

A free lunch...from the EU?. Cook, Paul; Rajoo, Meera Staple Inn Actuarial Society, - 2 pages. [RKN: 74929]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **January/February** : 30-31.

Solvency II offers a real incentive for diversifying risk, but is it quite the bonus it appears to be? Paul Cook and Meera Rajoo investigate
http://www.theactuary.com/

Legal and regulatory update : Global identification standards for counterparties and other financial market participants. Grody, Allan D; Hughes, Peter J; Reininger, Daniel [RKN: 45711]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 288-304.

Financial regulators are focused on observing systemic risk across enormously complex interconnected global financial institutions. It is understood that without an ability to view the underlying positions and cash flows, valued in standard ways and aggregated by counterparty through common identifiers, neither risk triggers nor risk exposures can be observed nor can systemic threats be detected. It has been accepted by regulators that the very first pillar of global financial reform is a standard for identifying the same financial market participant to each regulator in the same way. Getting agreement on a globally unique and standardised legal entity identifier (the LEI) is the first step. This paper reports on past and current efforts to develop a global identification system for such a purpose. The authors argue for a government/industry partnership in which governance is shared and operating elements of the global identification system are compartmentalised for control, security and confidentiality purposes. The paper demonstrates a proposed global identification system that satisfies all known elements of regulators' requirements for the LEI and also lays the foundation for accommodating other attributes, such as business ownership hierarchical structures and contract and instrument identification.

OTC central counterparty clearing : Myths and reality. Milne, Alistair [RKN: 45715]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 335-346.

This paper discusses the costs and benefits of introducing central counterparty clearing (CCP) in ‘over-the-counter’ (OTC) derivative markets. It argues: (i) that the costs are not so large as some commentary has suggested, at least provided that mandatory clearing is applied only to widely traded standardised contracts; (ii) that the key economic benefits of having CCP clearing do not come from reduction of counterparty credit risk (firms are perfectly capable of doing this on their own) — it is instead improved oversight of market participants and the coordinated management of open positions following the failure of a systemically important financial institution, ie the management of default in a systemic crisis; (iii) because these benefits are public goods some policy intervention is appropriate to encourage a suitable level of adoption of CCP clearing; and finally (iv) that the ‘rule based’ approach to CCP clearing of OTC contracts required by Dodd–Frank has become diverted into an inappropriate focus on the precise requirements for mandatory clearing. Instead a more flexible approach can achieve an appropriate balance between reduced systemic financial risk and the compliance burden on firms.

Systemic risk in financial services. Besar, D; Booth, P; Chan, K K; Milne, A K L; Pickles, J - 106 pages. [RKN: 74795]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 195-300.

The current banking crisis has reminded us of how risks materialising in one part of the financial system can have a widespread impact, affecting other financial markets and institutions and the broader economy. This paper, prepared on behalf of the Actuarial Profession, examines how such events have an impact on the entire financial system and explores whether such disturbances may arise within the insurance and pensions sectors as well as within banking. The paper seeks to provide an overview of a number of banking and other financial crises which have occurred in the past, illustrated by four case studies. It discusses what constitutes a systemic event and what distinguishes it from a large aggregate system wide shock. Finally, it discusses how policy-makers can respond to the risk of such systemic financial failures.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Systemic risk in financial services : Abstract of the London discussion on the preceding. Milne, A K L - 19 pages. [RKN: 74796]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 301-319.

This discussion relates to the following paper:
D. Besar, P. Booth, K.K. Chan, A.K.L. Milne & J. Pickles Systemic risk in financial services. British Actuarial Journal Vol 16 No 2
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Systemic risk in financial services : Abstract of the Edinburgh discussion on the preceding. Milne, A K L - 20 pages. [RKN: 74797]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 321-340.

This discussion relates to the following paper:
D. Besar, P. Booth, K.K. Chan, A.K.L. Milne & J. Pickles Systemic risk in financial services. British Actuarial Journal Vol 16 No 2
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

REINSURANCE

Computing bounds on the expected payoff of Alternative Risk Transfer products. Villegas, Andrés M; Medaglia, Andrés L; Zuluaga, Luis F [RKN: 44786]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **51(2)** : 271-281.

The demand for integrated risk management solutions and the need for new sources of capital have led to the development of innovative risk management products that mix the characteristics of traditional insurance and financial products. Such products, usually referred as Alternative Risk Transfer (ART) products include: (re)insurance contracts that bundle several risks under a single policy; multi-trigger products where the payment of benefits depends upon the occurrence of several events; and insurance linked securities that place insurance risks in the capital market. Pricing of these complex products usually requires tailor-made complex valuation methods that combine derivative pricing and actuarial science techniques for each product, as well as strong distributional assumptions on the ART's underlying risk factors. We present here an alternative methodology to compute bounds on the price of ART products when there is limited information on the distribution of the underlying risk factors. In particular, we develop a general optimization-based method that computes upper and lower price bounds for different ART products using market data and possibly expert information about the underlying risk factors. These bounds are useful when the structure of the product is too complex to develop analytical or simulation valuation methods, or when the scarcity of data makes it difficult to make strong distributional assumptions on the risk factors. We illustrate our results by computing bounds on the price of a floating retention insurance contract, and a catastrophe equity put (CatEPut) option.
http://www.openathens.net/

Effects of risk management on cost efficiency and cost function of the U.S. Property and liability insurers. Lin, Hong-Jen; Wen, Min-Ming; Yang, Charles C Society of Actuaries, - 12 pages. [RKN: 74918]
Shelved at: Per: NAAJ (Oxf) Per NAAJ (Lon) Shelved at: JOU
North American Actuarial Journal (2011) **15 (4)** : 487-498.

This paper adopts the one-step stochastic frontier approach to investigate the impact of risk management tools of derivatives and reinsurance on cost efficiency of U.S. property-liability insurance companies. The stochastic frontier approach considers both the mean and variance of cost efficiency. The sample includes both stock and mutual insurers. Among the findings, the cost function of the entire sample carries the concavity feature, and insurers tend to use financial derivatives for firm value creation. The results also show that for the entire sample the use of derivatives enhances the mean of cost efficiency but accompanied with larger efficiency volatility. Nevertheless, the utilization of financial derivatives mitigates efficiency volatility for mutual insurers. This research provides important insights for the practice of risk management in the property-liability insurance industry.
http://www.soa.org/news-and-publications/publications/journals/naaj/naaj-detail.aspx

L'analyse de la rentabilité vue par la formule standard. Derien, Anthony; Le Floc'h, Emmanuel [RKN: 43465]
Shelved at: online only
Bulletin Français d'Actuariat (2011) **11 (no.22)** : 83-104.

The standard formula is mainly viewed as a basic formula to evaluate the regulatory capital, the internal model being commonly considered as a more powerful tool to adopt a proactive approach as defined in the ``Use Test'' (capital allocation, reinsurance, ...). The main arguments of the standard formula are the rigidity and the lack of flexibility to fit the risk profile of the insurance company. This research aims to demonstrate that the standard formula can have a more important contribution in the enterprise risk management with the production of keys indicator.
http://www.institutdesactuaires.com/bfa/

Living legacy. Carswell, Wilson Staple Inn Actuarial Society, - 2 pages. [RKN: 70765]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **July** : 24-25.

Dr Wilson Carswell looks at the causal link between the untimely death of Lawrence of Arabia and Periodic Payment Orders (PPOs).

http://www.theactuary.com/

Opportunity knocks. Cairns, Martin Staple Inn Actuarial Society, [RKN: 45434]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **September** : 34-35.

Martin Cairns looks at the options for insurers to benefit from improved quantification of reinsurance counterparty risk.

http://www.theactuary.com/

Risk valuation of property-casualty insurers. Major, John A [RKN: 43603]
Shelved at: Per: Variance
Variance (2011) **5(2)** : 124-140.

Risk valuation is the process of assigning a monetary value to a transformation of risk. Risk transformation can come about through changes in the operation of a business, explicit risk transfer mechanisms, financial changes, etc. This paper reviews the application of valuation techniques to address the question: “Does this risk transformation create or destroy shareholder value?” Four broad classes of valuation models are compared: actuarial appraisal/valuation, economic capital, firm life annuity, and optimal dividends. Their key differences are seen to lie in their treatment of the firm’s mortality and the circumstances under which recapitalization can occur.

http://www.variancejournal.org/issues

RENEWAL THEORY

Second order asymptotics for ruin probabilities in a renewal risk model with heavy-tailed claims. Lin, Jianxi [RKN: 44861]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **51(2)** : 422-429.

In this paper, we establish the second order asymptotics of ruin probabilities of a renewal risk model under the condition that the equilibrium distribution of claim sizes belongs to a rather general heavy-tailed distribution subclass—the class of second order subexponential distributions with finite mean. What is more, this requirement is proved to be necessary. Furthermore, a rather general sufficient condition on the claim size distribution itself is presented. Moreover, an extension to the case of random walk is also included.

http://www.openathens.net/

REPUTATION RISK

Reputational signals and capital acquisition when insurance companies go public. Carter, Richard B; Power, Mark L [RKN: 43635]
Shelved at: Per: Geneva
Geneva Papers on Risk and Insurance (2012) **37(3)** : 485-508.

Available online via Athens

We analyse reputational signals and decisions surrounding capital acquisition by examining 76 insurance firms going public from 1996 to 2006. We first explore the relationship between proxies for insurance firm reputation and initial public offering (IPO) underwriter reputation. In general, we find that more reputable underwriters market IPOs of more reputable insurers—insurers that are less risky, more likely to be life insurers and that have higher franchise value. These results suggest that underwriter and insurer reputations are aligned and send consistent signals. Second, we show that the market requires a higher return from riskier/less reputable insurers when they go public. When we compare the performance of our insurance company sample to a matched sample of non-insurance firms, we find that the greater reputational transparency of insurers allows the market to do a better job of determining future performance. Last, we conclude by showing empirically that franchise value and the reputational posture of the insurance firms are positively related. These results contribute to the growing body of knowledge on reputational risk management and should enhance capital acquisition strategies of insurance company managers.

http://www.openathens.net/

RESEARCH

Unravelling the complexity of risk. Cantle, Neil Staple Inn Actuarial Society, [RKN: 45113]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **March** : 33.

Neil Cantle provides an update on the progress so far and expected future outputs of one of the Profession's ERM research projects.

http://www.theactuary.com/archive

RETIREMENT

An empirical analysis of the effect of financial education on graduating business students' perceptions of their retirement planning familiarity, motivation, and preparedness. Power, Mark L; Hobbs, Jonathan M; Ober, Ashley - 17 pages. [RKN: 74771]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (1)** : 89-105.

Today's multifaceted and dynamic financial environment requires a high level of individual financial literacy to ensure that sound financial behaviors are the norm. Unfortunately, many individuals have limited knowledge regarding financial issues and are ill prepared to make sound financial choices. The purpose of this article was to benchmark and then determine if graduating business students' perception of their retirement planning familiarity, motivation, and preparedness improved after taking a semester-long course in Personal Risk Management and Insurance (PRMI). We discovered that business students were more financially literate than nonbusiness students and that business students' familiarity with retirement plans and personal level of readiness to make retirement planning decisions improved significantly after taking the principles class. Specifically, we showed that only 15.8 percent and 42.3 percent of the nonbusiness and business control students, respectively, felt adequately prepared to make retirement decisions, while 82 percent of the business students who completed the PRMI class felt prepared. Ex post, graduating seniors who were exposed to coursework covering life-cycle risks and options to treat those risks perceived that they are leaving college with a better ability to meet the financial challenges that await them. Last, we showed that significant differences existed in retirement plan and investment familiarity based on gender. Our findings provide support for including financial literacy as a general education requirement at colleges and universities.

http://www.openathens.net

RETURNS

Risk parity in US futures markets : Invited editorial. Scherer, Bernd Palgrave Macmillan, [RKN: 45745]
Shelved at: Per: J.Asset Man (Oxf)
Journal of Asset Management (2012) **13 (3)** : 155-161.

Risk parity allocates identical percentage contribution to risk to each individual asset. In the absence of established theoretical foundations, investors and product suppliers attribute the strong historical performance of risk parity portfolios to better diversification. This is an ill-founded belief. For US futures data I show that risk parity is not about diversification, but about higher return expectations for leveraged low-risk bonds. Although this is consistent with leverage aversion, it is incompatible with consumption-based asset pricing. In contrast to past work, I use futures data instead of diversified equity and bond indices. This allows concerns raised earlier about the availability of historic implementation costs or the historic price of leverage to be sidestepped.

REVIEWS

Book review : Longevity Risk, edited by Emma McWilliam. Edwards, Matthew Staple Inn Actuarial Society, [RKN: 45481]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **October** : 39.

http://www.theactuary.com/

RISK

Allocating assets in climates of extreme risk : A new paradigm for stress testing portfolios. Cuffe, Stacy L; Goldberg, Lisa R [RKN: 45655]
Shelved at: Per: FAJ
Financial Analysts Journal (2012) **68(2)** : 85-107.

The authors extended the standard paradigm for portfolio stress testing in two ways. First, they introduced a toolkit that enables investors to envision and administer extreme scenarios. The risk model is integral to the stress test. They demonstrated the substantial impact of using historical and hypothetical covariance matrices in scenario construction. Second, they used a scenario-constrained optimization to incorporate the output of a portfolio stress test directly into an investment decision.

Ambiguity aversion, higher-order risk attitude and optimal effort. Huang, Rachel J [RKN: 45637]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **50 (3)** : 338-345.

In this paper, we examine whether a more ambiguity-averse individual will invest in more effort to shift her initial starting wealth distribution toward a better target distribution. We assume that the individual has ambiguous beliefs regarding two target (starting) distributions and that one distribution is preferred to the other. We find that an increase in ambiguity aversion will decrease (increase) the optimal effort when the cost of effort is non-monetary. When the cost of effort is monetary, the effect depends on whether the individual would make more effort when the target (starting) distribution is the preferred distribution than the target (starting) distributions, the inferior one. We further characterize the individual's higher-order risk preferences to examine the sufficient conditions.

http://www.openathens.net/

Comparing risk preferences over financial and environmental lotteries. Riddel, Mary Springer, [RKN: 45874]
Shelved at: Per: JRU (Oxf)
Journal of Risk and Uncertainty (2012) **45(2)** : 135-157.

This paper investigates whether preferences over environmental risks are best modeled using probability-weighted utility functions or can be reasonably approximated by expected utility (EU) or subjective EU models as is typically assumed. I elicit risk attitudes in the financial and environmental domains using multiple-price list experiment. I examine how subjects' behavioral, attitudinal, and demographic characteristics affect their probability weighting functions first for financial risks, then for oil-spill risks. I find that most subjects tend to overweight extreme positive outcomes relative to expected utility in both the environmental and financial domains. Subjects are more likely to overemphasize low probability, extreme environmental outcomes than low probability extreme financial outcomes, leading subjects to offer more support for mitigating environmental gambles than financial gambles with the same odds and equivalent outcomes. I conclude that EU models are likely to underestimate subjects' willingness to pay for environmental cleanup programs or policies with uncertain outcomes.

Data quality in banking : Regulatory requirements and best practices. Bonollo, Michele; Neri, Massimiliano [RKN: 45693]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 146-161.

Since the beginning of the financial crisis in 2007, the quality of risk data has become a subject of concern for risk managers in banks and other financial institutions. In order to tackle this subject a four-step analysis is proposed. First, the issues associated with risk data quality in the banking sector are examined, the main one being the silo organisation of risk data. Secondly, the paper reviews the existing data quality regulations in the financial sector, summarising briefly the requirements in Basel II and in Solvency II (the first regulation that provided formal requirements for data quality). Thirdly, a best practice proposal is made for banks in a centralised approach to risk data, involving the integration of risk and finance data. Finally, the centralised data approach is combined with a sensitivity technique in order to obtain more effective data quality strategies and indicators.
http://www.openathens.net

Do administrators have the same priorities for risk reductions as the general public?. Carlsson, Fredrik; Daruvala, Dinky; Jaldell, Henrik Springer, [RKN: 45856]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **45 (1)** : 79-95.

A stated preference survey was used to investigate the potential discrepancy between the priorities of public administrators and the general public regarding risk reductions. Both groups of respondents were asked to assume the role of a public policy-maker and choose between different public safety projects. We investigate differences in three areas: (i) large vs. small accidents, (ii) actual vs. subjective risk, and (iii) the trade-off between avoiding fatalities and serious injuries for different age groups and accidents. We find only minor differences between the responses of administrators and the general public, the most important of which is the difference in priorities between reducing the risk of many small or one large accident. In this area the most common response from the general public is that they prefer avoiding many small accidents rather than one large accident while among the administrators there is almost an equal split between the two options.
http://www.openathens.net

The effects and risks of quantitative easing. Mortimer-Lee, Paul [RKN: 45846]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(4)** : 372-389.

Quantitative easing (QE) comes in many forms, each tailored to the specific needs of the region in question. What they all have in common, though, is that they are the result of the failure of conventional policy to deliver the outcomes policymakers want. There are many risks associated with unconventional tools such as QE and a number of drawbacks. But central banks around the world have taken risks with the future in a bid to avoid adverse consequences today or tomorrow. They hope that by the time QE draws to an end, they, the markets, the financial system and the wider economy will be able to manage those risks effectively. Whether they can remains to be seen.
http://www.openathens.net

Evaluation of the Basel VaR-based market risk charge and proposals for a needed adjustment. Fricke, Jens; Pauly, Ralf [RKN: 45848]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(4)** : 398-420.

This analysis shows that in high risk situations the Basel II guidelines fail in the attempt to cushion against large losses by higher capital requirements. One of the factors causing this problem is that the built-in positive incentive of the penalty factor resulting from the Basel backtesting is set too weak. Therefore, this paper proposes a new procedure for market risk regulation and it demonstrates how this works with real time series. A comparison study shows that contrary to the existing Basel regulation the proposition presented here has the intended quality as a built-in incentive for choosing a reliable forecasting model. By including the expected shortfall as a further measure of risk this paper's concept yields a steeper increase of the penalty factor and as a consequence a stronger effect of risk underestimation on the capital requirement. The recent proposal of the Basel Committee on Banking Supervision may have the same weakness as the Basel II regulation because it is constructed in an analogous manner.
http://www.openathens.net

Extreme measures. Cox, Andy; Reid, Scott Staple Inn Actuarial Society, [RKN: 45475]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **October** : 28-30.

Andy Cox and Scott Reid consider the intricacies of modelling terrorism risk.
http://www.theactuary.com/

Failing to learn from experience about catastrophes : The case of hurricane preparedness. Meyer, Robert J Springer, [RKN: 45854]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **45 (1)** : 25-50.

This paper explores the question of whether there are inherent limits to our ability to learn from experience about the value of protection against low-probability, high-consequence, events. Findings are reported from two controlled experiments in which participants have a monetary incentive to learn from experience making investments to protect against hurricane risks. A central finding is that investments display a short-term forgetting effect consistent with the use of reinforcement learning rules, where a significant driver of investments in a given period is whether storm losses were incurred in the precious period. Given the relative rarity of such losses, this reinforcement process produces a mean investment level below that which would be optimal for most storm threats. Investments are also found to be insensitive to the censoring effect of protection itself, implying that the size of experienced losses—rather than losses that are avoided—is the primary driver of investment decisions.
http://www.openathens.net

The governance of value(s). Koenig, David R [RKN: 45696]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 194-210.

Based on excerpts from Governance Reimagined: Organizational Design, Risk and Value Creation, to be published by John Wiley & Sons, May 2012, the author explores the relationship between value and the pursuit of values with a specific focus on the role that resiliency plays in our ability to be successful in creating value. Psychological influences such as loss avoidance are greatly underappreciated and forms of corporate governance like network governance can play an important role in minimising the impact of these factors, along with enhancing the ability of organisations to create value.

Insurance, systemic risk and the financial crisis. Baluch, Faisal; Mutenga, Stanley; Parsons, Chris Palgrave Macmillan, [RKN: 39984]
Shelved at: Per: Geneva (Oxf)
Geneva Papers on Risk and Insurance (2011) **36(1)** : 126-163.

Available online via Athens
In this paper we assess the impact of the financial crisis on insurance markets and the role of the insurance industry in the crisis itself. We examine some previous “insurance crises” and consider the effect of the crisis on insurance risk—the liabilities arising from contracts that insurers underwrite. We then analyse the effects of the crisis on the performance of insurers in different markets and assess the extent of systemic risk in insurance. We conclude that, while systemic risk remains lower in insurance than in the banking sector, it is not negligible and has grown in recent years, partly as a consequence of insurers’ increasing links with banks and their recent focus on non-(traditional) insurance activities, including structured finance. We conclude by considering the structural changes in the insurance industry that are likely to result from the crisis, including possible effects on “bancassurance” activity, and offer some thoughts on changes in the regulation of insurance markets that might ensue.
http://www.openathens.net

Is the build-up of TARGET2 balances a question of self-contained risk?. Ulbrich, Jens; Lipponer, Alexander [RKN: 45847]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(4)** : 390-397.

This paper argues that imbalances in the TARGET2 payment system are a symptom of the current financial crisis and not subject to self-contained risk. Any risk for the Eurosystem ultimately arises from liquidity provision and not from the redistribution of pre-existing liquidity. If the risk element is to be reduced, the extraordinary monetary policy measures of the Eurosystem will have to be addressed and reversed as soon as possible. Especially in a monetary union of sovereign member states it cannot be the task of an independent monetary policy to reallocate solvency risks among taxpayers across the currency area. Therefore, the role of the Eurosystem in tackling the current crisis should not be overstretched. At the end of the day, it is up to the member countries and not the central banks to resolve the crisis.
http://www.openathens.net

The joint distribution of the time to ruin and the number of claims until ruin in the classical risk model. Dickson, David C M [RKN: 45636]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **50 (3)** : 334-337.

We use probabilistic arguments to derive an expression for the joint density of the time to ruin and the number of claims until ruin in the classical risk model. From this we obtain a general expression for the probability function of the number of claims until ruin. We also consider the moments of the number of claims until ruin and illustrate our results in the case of exponentially distributed individual claims. Finally, we briefly discuss joint distributions involving the surplus prior to ruin and deficit at ruin.
http://www.openathens.net/

Reference-dependent valuations of risk: Why willingness-to-accept exceeds willingness-to-pay. Viscusi, W Kip; Huber, Joel Springer, [RKN: 45592]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **44 (1)** : 19-44.

The gap between willingness-to-pay (WTP) and willingness-to-accept (WTA) benefit values typifies situations in which reference points—and direction of movement from reference points—are consequential. Why WTA-WTP discrepancies arise is not well understood. We generalize models of reference dependence to identify separate reference dependence effects for increases and decreases in environmental health risk probabilities, for increases and decreases in costs, and reference dependence effects embodying the interaction of two changes. We estimate separate reference dependence effects for the four possible cost and health risk change combinations using data from our choice-based experiment for a nationally representative sample of 4,745 households. The WTA-WTP gap is due largely to the reference dependence effects related to costs. Standard models of reference dependence are not consistent with the results, as there is an interactive effect. Estimated income effects are under a penny and thus cannot account for higher values of WTA relative to WTP.

Risk and precaution. Randall, Alan (2011). - 1st ed. - Cambridge: Cambridge University Press, 2011. - xvii, 260 p. pages. [RKN: 45567]
Shelved at: BXP

The precautionary principle has been labeled simplistic and the rational approach to decision-making under risk was modeled on well-specified games of chance. How then are we to manage the risks, uncertainties, and 'unknown unknowns' of the real world? In this book, Alan Randall unravels the key controversies surrounding the precautionary principle and develops a new framework

that can be taken seriously in policy and management circles. Respecting the complexity of the real world, he defines a justifiable role for the precautionary principle in a risk management framework that integrates precaution with elements of the standard risk management model. This is explained using examples from medicine, pharmacy, synthetic chemicals, nanotechnology, the environment and natural resources conservation. This carefully reasoned but highly accessible book will appeal to readers from a broad range of disciplines, including environmental policy, risk management and cost-benefit analysis.

Risk and the shareholder. Monks, Robert A G [RKN: 45689]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 112-114.

The modern meaning of shareholder has morphed from an engaged owner to a passive provider of capital. Should rights afforded to such passive capitalists be equal to those whose ownership engagement with a corporation is personal and direct? Without the involvement of active and engaged shareholders, the entire corporate system lacks its energising foundation and a very significant risk arises from the relative absence of the effective monitoring and supervising energy that those with 'ownership' interests are more likely to provide.

Risk attitudes in a social context. Rohde, Ingrid M T; Rohde, Kirsten I M Springer, [RKN: 45529]
Journal of Risk and Uncertainty (2011) **43 (3)** : 205-225.

Many experiments have demonstrated that when evaluating payoffs, people take not only their own payoffs into account, but also the payoffs of others in their social environment. Most of this evidence is found in settings where payoffs are riskless. It is plausible that if people care about the payoffs of others, they do so not only in a riskless context, but also in a risky one. This suggests that an individual's decision making under risk depends on the risks others in his or her environment face. This paper is the first to test whether individuals' risk attitudes are affected by the risks others face. The results show that risk attitudes appear to be less affected by others' risks than expected, even though the same subjects do show concerns for inequality in a riskless setting. Interestingly, we find that people prefer risks to be independent across individuals in society rather than correlated.

Risk parity in US futures markets : Invited editorial. Scherer, Bernd Palgrave Macmillan, [RKN: 45745]
Shelved at: Per: J.Asset Man (Oxf)
Journal of Asset Management (2012) **13 (3)** : 155-161.

Risk parity allocates identical percentage contribution to risk to each individual asset. In the absence of established theoretical foundations, investors and product suppliers attribute the strong historical performance of risk parity portfolios to better diversification. This is an ill-founded belief. For US futures data I show that risk parity is not about diversification, but about higher return expectations for leveraged low-risk bonds. Although this is consistent with leverage aversion, it is incompatible with consumption-based asset pricing. In contrast to past work, I use futures data instead of diversified equity and bond indices. This allows concerns raised earlier about the availability of historic implementation costs or the historic price of leverage to be sidestepped.

A role for actuaries. Maneval, David Staple Inn Actuarial Society, [RKN: 45107]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **March** : 20-21.

David Maneval looks at the need to routinely monitor emerging risks to identify potential hazards.
http://www.theactuary.com/archive

Single-year and multi-year insurance policies in a competitive market. Kleindorfer, Paul R; Kunreuther, Howard; Ou-Yang, Chieh Springer, [RKN: 45855]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **45 (1)** : 51-78.

This paper examines the demand and supply of annual and multi-year insurance contracts with respect to protection against a catastrophic risk in a competitive market. Insurers who offer annual policies can cancel policies at the end of each year and change the premium in the following year. Multi-year insurance has a fixed annual price for each year and no cancellations are permitted at the end of any given year. Homeowners are identical with respect to their exposure to the hazard. Each homeowner determines whether or not to purchase an annual or multi-year contract so as to maximize her expected utility. The competitive equilibrium consists of a set of prices where homeowners who are not very risk averse decide to be uninsured. Other individuals demand either single-year or multi-year policies depending on their degree of risk aversion and the premiums charged by insurers for each type of policy. http://www.openathens.net

Social comparison and risky choices. Linde, Jona; Sonnemans, Joep Springer, [RKN: 45593]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **44 (1)** : 45-72.

Theories (and experiments) on decision making under risk typically ignore (and exclude) a social context. We explore whether this omission is detrimental. To do so we experimentally investigate the simplest possible situation with both social comparison and risk: participants choose between two lotteries while a referent faces a fixed payoff. Participants are more risk averse when they can earn at most as much as their referent (loss situation) than when they are ensured they will earn at least as much as their referent (gain situation). Prospect theory with a social reference point would predict the exact opposite behavior. These results show that straightforward extensions of existing theories to allow for social comparison do not provide accurate predictions.

Weather risk hedging in the European markets and international investment diversification. Yang, Charles C; Li, Linda Shihong; Wen, Min-Ming [RKN: 45276]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (1)** : 74-94.

This article analyses weather risk hedging efficiency in three European countries using weather derivatives traded at Chicago Mercantile Exchange (CME) and explores the potential of weather derivatives as a new investment asset to further diversify investors' portfolios. The results document that the CME European weather contracts are generally effective in hedging the temperature risk in the three European countries. However, for a specific country, weather risk hedging using other countries' weather indexes is generally not effective. Zero or little correlation among international weather indexes and stock market indexes indicates that weather derivatives should be an efficient investment diversifier. This research provides important insights to both weather risk hedgers and investors.

When black swans turn to grey. Mohammed, Armoghan Staple Inn Actuarial Society, - 1 pages. [RKN: 73829]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **April** : 20.

Armoghan Mohammed asks whether the reoccurrence of high-risk events signals a need to review risk planning
http://www.theactuary.com/

RISK ANALYSIS

Calculation of Bayes premium for conditional elliptical risks. Kume, Alfred; Hashorva, Enkelejd [RKN: 43681]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **51(3)** : 632-635.

In this paper the authors discuss the calculation of the Bayes premium for conditionally elliptical multivariate risks. In our framework the prior distribution is allowed to be very general requiring only that its probability density function satisfies some smoothness conditions. Based on the previous results of Landsman and Nešlehová (2008) [Z. Landsman, J. Nešlehová (2008), Stein's lemma for elliptical random vectors, Journal of Multivariate Analysis, 99, 912-927] and Hamada and Valdez (2008) [M. Hamada, E.A. Valdez (2008), CAPM and option pricing with elliptically contoured distributions, Journal of Risk & Insurance, 75, 387-409], the authors show in this paper that for conditionally multivariate elliptical risks the calculation of the Bayes premium is closely related to the Brown identity and the celebrated Stein's lemma.
http://www.openathens.net/

Capital allocation in the property-liability insurance industry. D'Arcy, Stephen P [RKN: 43604]
Shelved at: Per: Variance
Variance (2011) **5(2)** : 141-157.

Capital allocation is a theoretical exercise, since all of a firm's capital could be depleted to cover a significant loss arising from any one segment. However, firms do need to allocate capital for pricing, risk management, and performance evaluation. One versatile allocation method, the Ruhm-Mango-Kreps algorithm, has several key advantages: additivity, simplicity, and flexibility. However, the approach is so flexible that it can be used to produce many different values instead of a single answer. In this paper, the cost of capital in financial markets is incorporated into the Ruhm-Mango-Kreps algorithm to yield one allocation that reflects the true cost of capital an insurer would face.
http://www.variancejournal.org/issues

Corporate value of enterprise risk management: the next step in business management. Segal, Sim (2011). - Hoboken, NJ: Wiley, 2011. - xiii, 404 pages. [RKN: 74706]
Shelved at: UHG/AA (Lon) Shelved at: 658.15

Counting the cost of enterprise risk management. Klumpes, Paul Staple Inn Actuarial Society, - 2 pages. [RKN: 74939]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **March** : 30-31.

Paul Klumpes looks at the accountant's perspective of managing risk
http://www.theactuary.com/

Enterprise Risk Management through strategic allocation of capital. Ai, Jing; Brockett, Patrick L; Cooper, William W; Golden, Linda L - 28 pages. [RKN: 73846]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2012) **79 (1)** : 29-56.

Available online via Athens
This article presents a conceptual framework for operationalizing strategic enterprise risk management (ERM) in a general firm. We employ a risk-constrained optimization approach to study the capital allocation decisions under ERM. Given the decision maker's risk appetite, the problem of holistically managing enterprise-wide hazard, financial, operational, and real project risks is treated by maximizing the expected total return on capital, while trading off risks simultaneously in Value-at-Risk type of constraints. This approach explicitly quantifies the concepts of risk appetite and risk prioritization in light of the firm's default and financial distress avoidance reflected in its target credit rating. Our framework also allows the firm to consider a multiperiod planning horizon so that changing business environments can be accounted for. We illustrate the implementation of the framework through a numerical example. As an initial conceptual advancement, our formulation is capable of facilitating more general ERM modeling within a consistent strategic framework, where idiosyncratic variations of firms and different modeling assumptions can be accommodated. Managerial implications are also discussed.
http://www.openathens.net

Fast remote but not extreme quantiles with multiple factors: applications to Solvency II and Enterprise Risk Management. Chauvigny, Matthieu; Devineau, Laurent; Loisel, Stéphane; Maume-Deschamps, Véronique [RKN: 44809]
Shelved at: online only
European Actuarial Journal (2011) **1(1) July** : 131-157.

Available online via Athens
For operational purposes, in Enterprise Risk Management or in insurance for example, it may be important to estimate remote (but not extreme) quantiles of some function f of some random vector. The call to f may be time- and resource-consuming so that one aims at reducing as much as possible the number of calls to f. In this paper, we propose some ways to address this problem of general interest. We then numerically analyze the performance of the method on insurance and Enterprise Risk Management real-world case studies.
http://www.openathens.net

The governance of risk : Guest editorial. Koenig, David R [RKN: 45688]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 108-111.

Risk valuation of property-casualty insurers. Major, John A [RKN: 43603]
Shelved at: Per: Variance
Variance (2011) **5(2)** : 124-140.

Risk valuation is the process of assigning a monetary value to a transformation of risk. Risk transformation can come about through changes in the operation of a business, explicit risk transfer mechanisms, financial changes, etc. This paper reviews the application of valuation techniques to address the question: "Does this risk transformation create or destroy shareholder value?" Four broad classes of valuation models are compared: actuarial appraisal/valuation, economic capital, firm life annuity, and optimal dividends. Their key differences are seen to lie in their treatment of the firm's mortality and the circumstances under which recapitalization can occur.
http://www.variancejournal.org/issues

RISK APPETITE

Enterprise risk management for health insurance from an actuarial perspective. Orros, G C; Smith, J - 56 pages. [RKN: 70180]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (2)** : 259-314.

This paper focuses on Enterprise Risk Management (ERM) and strategic business management for health insurance companies in our world of 'unknown unknowns' and the emergence of unexpected risks over time. It illustrates how Chief Risk Officers (CROs) can focus on 'risk and opportunity management' through an ERM framework, and thereby balance risks against opportunities, whilst being resilient against 'unknown unknowns' and their emergence over time as 'known unknowns' and 'known knowns'. The paper has been designed to meet the broad requirements of health insurers that would like to implement an ERM framework for the effective risk management of their health insurance lines of business. Risk management for health insurers in the context of Solvency II and broader European Commission regulatory requirements is also discussed. The authors discuss how insurers can develop and apply risk management to build resilience in the face of the storms and shocks that may lie ahead.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Enterprise risk management for health insurance from an actuarial perspective : Abstract of the London discussion. Orros, G C - 16 pages. [RKN: 70181]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (2)** : 315-330.

London discussion, 18 January 2011.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

RISK ASSESSMENT

Calculating and communicating tail association and the risk of extreme loss: a discussion paper. Sweeting, Paul; Fotiou, Fotis (2011). - London: Institute and Faculty of Actuaries, 2011. - 66 pages. [RKN: 45483]
Shelved at: EEQ pam (Lon) Shelved at: JOU

This paper examines two aspects of extreme events; their calculation and their communication. In relation to calculation, two types of extreme event are considered: the extent to which extreme events in two or more variables occur together, and the combinations of losses from a series of risks that together result in total losses exceeding a particular level. The communication of extreme events is discussed not only in terms of numbers but explores graphical methods that can be used to aggregate information on a range of risk combinations. This involves communicating not just the level of risk but also the importance of the risk considered.
http://www.actuaries.org.uk/sites/all/files/event brochures/110724erm report clean.pdf

The governance of risk : Guest editorial. Koenig, David R [RKN: 45688]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 108-111.

RISK AVERSION

Beyond risk aversion: Why, how and what's next? : EGRIE Keynote Address. Eeckhoudt, Louis - 15 pages. [RKN: 70260]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (2)** : 141-155.

Risk attitudes other than risk aversion (e.g. prudence and temperance) are becoming important both in theoretical and empirical work. While the literature has mainly focused its attention on the intensity of such risk attitudes (e.g. the concepts of absolute prudence and absolute temperance), I consider here an alternative approach related to the direction of these attitudes (i.e. the sign of the successive derivatives of the utility function).

Characterization of left-monotone risk aversion in the RDEU model. Mao, Tiantian; Hu, Taizhong [RKN: 45644]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **50 (3)** : 413-422.

We extend the characterization of the left-monotone risk aversion developed by Ryan (2006) to the case of unbounded random

variables. The notion of weak convergence is insufficient for such an extension. It requires the solution of a host of delicate convergence problems. To this end, some further intrinsic properties of the location independent risk order are investigated. The characterization of the right-monotone risk aversion for unbounded random variables is also mentioned. Moreover, we remove the gap in the proof of the main result in Ryan (2006).
http://www.openathens.net/

Experts in experiments. How selection matters for estimated distributions of risk preferences. von Gaudecker, Hans-Martin; van Soest, Arthur; Wengström, Erik Springer, [RKN: 45875]
Shelved at: Per: JRU (Oxf)
Journal of Risk and Uncertainty (2012) **45(2)** : 159-190.
An ever-increasing number of experiments attempts to elicit risk preferences of a population of interest with the aim of calibrating parameters used in economic models. We are concerned with two types of selection effects, which may affect the external validity of standard experiments: Sampling from a narrowly defined population of students ("experimenter-induced selection") and self-selection due to non-response or incomplete response of participants in a random sample from a broad population. We find that both types of selection lead to a sample of experts: Participants perform significantly better than the general population, in the sense of fewer violations of revealed preference conditions. Self-selection within a broad population does not seem to matter for average preferences. In contrast, sampling from a student population leads to lower estimates of average risk aversion and loss aversion parameters. Furthermore, it dramatically reduces the amount of heterogeneity in all parameters.

Raising capital in an insurance oligopoly market. Hardelin, Julien; Lemoyne de Forges, Sabine - 26 pages. [RKN: 74943]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (1)** : 83-108.
We consider an oligopoly market where firms offer insurance coverage against a risk characterised by aggregate uncertainty. Firms behave as if they were risk averse for a standard reason of costly external finance. The model consists in a two-stage game where firms choose their internal capital level at stage one and compete on price at stage two. We characterise the subgame perfect Nash equilibria of this game and focus attention on the strategic impact of insurers capital choice. We discuss the model with regard to the insurance industry specificities and regulation.

Risk aversion, downside risk aversion and paying for stochastic improvements. Chiu, W Henry - 27 pages. [RKN: 74940]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (1)** : 1-26.
This paper considers the relationship between risk preferences and the willingness to pay for stochastic improvements. We show that if the stochastic improvement satisfies a double-crossing condition, then a decision maker with utility v is willing to pay more than a decision maker with utility u, if v is both more risk averse and less downside risk averse than u. As the condition always holds in the case of self-protection, the result implies novel characterizations of individuals' willingness to pay to reduce the probability of loss. By establishing a general result on the correspondence between an individual's willingness to pay, and his optimal purchase of stochastic improvement when there is a given relationship between stochastic improvements and the amount paid for them, we further show that all results on the willingness to pay can be applied directly to characterize the conditions under which a more risk averse individual will optimally choose to buy more stochastic improvement. Generalizations of existing results on optimal choice of self-protection can be obtained as corollaries.

Separation of ownership and management: implications for risk-taking behavior. Cole, Cassandra R; He, Enya; McCullough, Kathleen A; Sommer, David W - 23 pages. [RKN: 74769]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (1)** : 49-71.
Issues associated with the relation between the separation of ownership and management and risk-taking behavior have been considered in an array of studies, with varying results. Due to the wide variety of ownership structures present, the property–casualty insurance industry provides an excellent setting to test the conflicting hypotheses related to separation of ownership from management and risk taking behavior. Employing a large sample of property–liability insurance companies over the period of 1996–2004, we empirically test the alternative hypotheses regarding the implications of separation of ownership from management for firms' risk taking behavior. The empirical tests include the ownership structures specified in prior research as well as a more detailed classification scheme. We find that each ownership structure is significantly different from every other ownership structure in terms of risk.
http://www.openathens.net

Single-year and multi-year insurance policies in a competitive market. Kleindorfer, Paul R; Kunreuther, Howard; Ou-Yang, Chieh Springer, [RKN: 45855]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **45 (1)** : 51-78.
This paper examines the demand and supply of annual and multi-year insurance contracts with respect to protection against a catastrophic risk in a competitive market. Insurers who offer annual policies can cancel policies at the end of each year and change the premium in the following year. Multi-year insurance has a fixed annual price for each year and no cancellations are permitted at the end of any given year. Homeowners are identical with respect to their exposure to the hazard. Each homeowner determines whether or not to purchase an annual or multi-year contract so as to maximize her expected utility. The competitive equilibrium consists of a set of prices where homeowners who are not very risk averse decide to be uninsured. Other individuals demand either single-year or multi-year policies depending on their degree of risk aversion and the premiums charged by insurers for each type of policy.
http://www.openathens.net

To boldly and safely go : Biostatistics in space. Ploutz-Snyder, Robert [RKN: 45584]
Shelved at: Per
Significance (2012) **9(1)** : 4-7.
How can humans live and work in space? Ask one of NASA's biostatisticians. With the International Space Station, the prospect of a return to the moon and – who knows?– perhaps a manned voyage to Mars, ever-longer space missions must be planned for. Robert Ploutz-Snyder describes some of NASA's work to reduce the risk to astronauts.
http://www.openathens.net/

RISK-BASED CAPITAL

Excess based allocation of risk capital. van Gulick, Gerwald; de Waegenaere, Anja; Norde, Henk [RKN: 44987]
Shelved at: Per: IME (Oxf)
Insurance: Mathematics & Economics (2012) **50 (1)** : 26-42.

Available online via Athens

In this paper we propose a new rule to allocate risk capital to portfolios or divisions within a firm. Specifically, we determine the capital allocation that minimizes the excesses of sets of portfolios in a lexicographical sense. The excess of a set of portfolios is defined as the expected loss of that set of portfolios in excess of the amount of risk capital allocated to them. The underlying idea is that large excesses are undesirable, and therefore the goal is to determine the allocation for which the largest excess is as small as possible. We show that this allocation rule yields a unique allocation, and that it satisfies some desirable properties. We also show that the allocation can be determined by solving a series of linear programming problems.

http://www.openathens.net/

Insurance risk capital for the Sparre Andersen model with geometric Lévy stochastic returns. Hürlimann, Werner [RKN: 44834]
Shelved at: online only
European Actuarial Journal (2011) **1(2) November** : 215-235.

Available online via Athens -- Published online, 22 December 2011

Some multi-period insurance risk economic capital models that include the effects of heavy-tail claims and random returns are considered. They are based on the Sparre Andersen risk model with geometric Lévy stochastic returns. The random accumulated surplus over an arbitrary finite time horizon is decomposed into insurance risk, market risk and future profit components. A protection against the solvency risk of the policyholders is obtained by applying the VaR (CVaR) measure to the insurance risk component and defines a multi-period insurance risk VaR (CVaR) economic capital. A classical asymptotic result by Resnick and Willekens [Ref. 28: Resnick SI, Willekens E (1991) Moving averages with random coefficients and random coefficient autoregressive models. Comm. Statist. Stochastic Models 7(4):511–525] on the tail probability of moving averages with random coefficients is applied to the accumulated aggregate claims random variable for claim size distributions with regularly varying tail to derive asymptotic formulas for these multi-period insurance risk economic capitals. Numerical examples with a Pareto claim size distribution reveal interesting features and differences between these two solvency rules. Since the preceding results exclude the log-normal and the heavy-tailed Weibull claim size distributions, we consider also an extension to sub-exponential claim sizes for the compound Poisson model with constant force of interest, which is based on Hao and Tang [Ref. 12: Hao X, Tang Q (2008) A uniform asymptotic estimate for discounted aggregate claims with subexponential tails. Insurance Math. Econom. 43(1):116–120]. The obtained results are compared with the standard Solvency II specification of the non-life insurance risk.

http://www.openathens.net

The role of RBC, hurricane exposure, bond portfolio duration, and macroeconomic and industry-wide factors in property–liability insolvency prediction. Cheng, Jiang; Weiss, Mary A - 28 pages. [RKN: 70414]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2012) **79 (3)** : 723-750.

Available online via Athens

This research analyzes the performance of the risk-based capital (RBC) ratio and other variables in predicting insolvencies in the property–liability insurance industry during the period 1994–2008. The results indicate that the accuracy of the RBC ratio in predicting insolvencies is inconsistent over time and that some previously tested financial ratios that are part of the FAST system do not always reliably predict insurer insolvency. In addition, the insolvency propensity is found to be significantly related to an insurer's hurricane prone area exposure, changes in interest rates, the industry-wide combined ratio, and the industry-wide Herfindahl index of premiums written.

http://www.openathens.net

RISK CLASSIFICATION

A common risk classification system for the actuarial profession : a discussion paper. Kelliher, P O J; Wimot, D; Klumpes, P J M (2011). - London: Institute and Faculty of Actuaries, 2011. - 38 pages. [RKN: 45486]
Shelved at: Strg box SI Ref 5 ifp 10/11 Shelved at: JOU

This draft paper sets out a classification system developed by the risk classification working party for the profession that can be used as a common reference point for discussing risk.

http://www.actuaries.org.uk/research-and-resources/documents/discussion-paper-common-risk-classification-system-actuarial-profes

Models for quantifying risk. Cunningham, Robin J; Herzog, Thomas N; London, Richard L (2011). - 4th ed. Actex, 2011. - 474 pages. [RKN: 74932]
Shelved at: 368.01

This textbook presents a variety of stochastic models for the actuary to use in undertaking the analysis of risk. It is designed to be appropriate for use in a two- or three-semester university course in basic actuarial science. It was also written with the SOA Exam MLC in mind. It covers all of the life contingencies 2012 exam topics in a single reference.

Models are evaluated in a generic form with life contingencies included as one of many applications of the science. Students will find this book to be a valuable reference due to its easy-to-understand explanations and the end-of-chapter exercises. It also introduces students to the practical use of the science via the Appendices.

The Fourth edition has been updated to support the new Learning Objectives for SOA Exam MLC beginning in 2012. Material has been added to address the notion of interest rate risk and new applications for the concept of reserves. Additional emphasis has been placed on representing various actuarial models as multi-state models, using the mathematics of discrete-time and/or continuous-time Markov Chains, as well as the use of simulation techniques.

Parallels with the past. Sagoo, Pretty; Mosher, Jessica Staple Inn Actuarial Society, [RKN: 45471]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **October** : 22-23.
Pretty Sagoo and Jessica Mosher look at ways of categorising and measuring basis risk _in longevity hedges.
http://www.theactuary.com/

A review of the use of complex systems applied to risk appetite and emerging risks in ERM practice. Allan, Neil; Cantle, Neil J; Godfrey, P; Yin, Y (2011). - London: Institute and Faculty of Actuaries, 2011. - 74 pages. [RKN: 44920]
Shelved at: ifp 11/11 (Lon) Shelved at: JOU
http://www.actuaries.org.uk/research-and-resources/documents/review-use-complex-systems-applied-risk-appetite-and-emerging-risks

Risk classification in life insurance: methodology and case study. Gschlössl, Susanne; Schoenmaekers, Pascal; Denuit, Michel [RKN: 44803]
Shelved at: online only
European Actuarial Journal (2011) **1(1) July** : 23-41.
Available online via Athens
In this paper, we describe how Poisson regression analysis can be efficiently used to perform graduation of mortality rates in presence of exogenous information supporting an efficient underwriting process in life insurance business. After having justified the relevance of a Poisson likelihood for mortality data, we explain how categorical and continuous covariates can be included in the model. A case study based on a German insurance portfolio is proposed to illustrate the usefulness of the approach described in this paper.
http://www.openathens.net

Speaking the language. Kelliher, Patrick Staple Inn Actuarial Society, [RKN: 45263]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **June** : 28-30.
Patrick Kelliher outlines the professions's guidelines for a common risk 'language'.
http://www.theactuary.com/

RISK (INSURANCE)

Optimal insurance under multiple sources of risk with positive dependence. Lu, ZhiYi; Liu, LePing; Meng, LiLi [RKN: 44866]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **51(2)** : 462-471.
In this paper we try to derive an optimal insurance treaty when the insured faces multiple sources of risk. We show that the deductible insurance is optimal when the insurable and uninsurable risks are positively dependent or independent within the expected utility framework. A necessary condition of optimal deductible is given under some mild conditions. We compare our model with the classical one without background risk. Furthermore, the shifts of optimal deductible and expected utility by modifications of the dependence structure and the marginal are analyzed.
http://www.openathens.net/

Risk modelling in general insurance: from principles to practice. Gray, Roger J; Pitts, Susan M (2012). - Cambridge: Cambridge University Press for the Institute of Actuaries and the Faculty of Actuaries, 2012. - xiv, 393 pages. [RKN: 45763]
Shelved at: BX/UHG (Lon) Shelved at: 368.01
Final publication following proof copy.
Knowledge of risk models and the assessment of risk is a fundamental part of the training of actuaries and all who are involved in financial, pensions and insurance mathematics. This book provides students and others with a firm foundation in a wide range of statistical and probabilistic methods for the modelling of risk, including short term risk modelling, model based pricing, risk sharing, ruin theory and credibility.

Risk processes with dependence and premium adjusted to solvency targets. Constantinescu, Corina; Maume-Deschamps, Véronique; Norberg, Ragnar [RKN: 44838]
Shelved at: online only
European Actuarial Journal (2012) **2(1) July** : 1-20.
Available online via Athens -- Published online, July 2012
This paper considers risk processes with various forms of dependence between waiting times and claim amounts. The standing assumption is that the increments of the claims process possess exponential moments so that variations of the Lundberg upper bound for the probability of ruin are in reach. The traditional point of view in ruin theory is reversed: rather than studying the probability of ruin as a function of the initial reserve under fixed premium, the problem is to adjust the premium dynamically so as to obtain a given ruin probability (solvency requirement) for a fixed initial reserve (the financial capacity of the insurer). This programme is carried through in various models for the claims process, ranging from Cox processes with i.i.d. claim amounts, to conditional renewal (Sparre Andersen) processes.
http://www.openathens.net

RISK MANAGEMENT

Actuaries as CROs?. O'Brien, Chris Staple Inn Actuarial Society, - 1 pages. [RKN: 74927]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **January/February** : 26.
Chris O'Brien considers how the chief risk officer's remit varies and what role actuaries have in risk management
http://www.theactuary.com/

Alert to black swan soapbox : Letter of the month. Anonymous Staple Inn Actuarial Society, - 1 pages. [RKN: 70916]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **October** : 6.
Queries the meaning of the use of the term 'black swan' events in the article published in the September Actuary Magazine.
http://www.theactuary.com/

Alert to black swan-song?. Ellis, Philip; McMurrough, Eamonn Staple Inn Actuarial Society, - 1 pages. [RKN: 70673]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **September** : 8.
Philip Ellis and Eamonn McMurrough say it is time for the industry to wake up to the frequency of catastrophe risk
http://www.theactuary.com/

Are quantile risk measures suitable for risk-transfer decisions?. Guerra, Manuel; Centeno, M L [RKN: 45648]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **50 (3)** : 446-461.
Although controversial from the theoretical point of view, quantile risk measures are widely used by institutions and regulators. In this paper, we use a unified approach to find the optimal treaties for an agent who seeks to minimize one of these measures, assuming premium calculation principles of various types. We show that the use of measures like Value at Risk or Conditional Tail Expectation as optimization criteria for insurance or reinsurance leads to treaties that are not enforceable and/or are clearly bad for the cedent. We argue that this is one further argument against the use of quantile risk measures, at least for the purpose of risk-transfer decisions.
http://www.openathens.net/

The Basel III and beyond. Cannata, Francesco; Quagliariello, Mario (2011). Risk Books, 2011. - 510 pages. [RKN: 74705]
Shelved at: 519.287
Around the world, central bankers, regulators and governments have responded to the financial crisis with new regulation and legislation. The cornerstone of this global initiative to contain risk is Basel III – sweeping new regulatory standards for banks on capital adequacy and liquidity.
These new standards will define markets and their practices for decades to come. Already, they are reshaping institutions, business models and balance sheets.
Understanding Basel III and the thinking behind it is essential for market participants and for those charged with implementing the standards. In Basel III and Beyond, the first book-length treatment of Basel III, editors Mario Quagliariello of the European Banking Authority and Francesco Cannata of the Bank of Italy have assembled contributors from regulators and central banks involved in preparing the standards including a foreword from Mario Draghi, President of the European Central Bank.
Key chapters describe and analyse the new elements of Basel III, as well as detailing important revisions to the 2004 accord. Written by the regulators themselves, Basel III and Beyond is the essential guide to the new global banking standards.

Book Review : Systems of frequency curves. Smith, Andrew Staple Inn Actuarial Society, - 1 pages. [RKN: 74924]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **January/February** : 36.
Andrew Smith reviews Systems of frequency curves by WP Elderton and NL Johnson
http://www.theactuary.com/

Canonical valuation of mortality-linked securities. Li, Johnny Siu-Hang; Ng, Andrew Cheuk-Yin - 32 pages. [RKN: 74875]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2011) **78 (4)** : 853–884.
Available online via Athens
A fundamental question in the study of mortality-linked securities is how to place a value on them. This is still an open question, partly because there is a lack of liquidly traded longevity indexes or securities from which we can infer the market price of risk. This article develops a framework for pricing mortality-linked securities on the basis of canonical valuation. This framework is largely nonparametric, helping us avoid parameter and model risk, which may be significant in other pricing methods. The framework is then applied to a mortality-linked security, and the results are compared against those derived from other methods.
http://www.openathens.net

Chain reaction. Patrick, Bart Staple Inn Actuarial Society, [RKN: 45476]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **October** : 31.
Bart Patrick looks at how the new Financial Services Authority regulations will _regenerate risk management.
http://www.theactuary.com/

"Chance is the negation of cause" - response to I. Thomas, June 2011 : Letter of the month. Clarkson, Robert Staple Inn Actuarial Society, - 1 pages. [RKN: 73900]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2011) **July** : 6.

Encourages readers to consider the works of David Hume and Adam Smith in the area of randomness, chance and irrational behaviour.
http://www.theactuary.com/

The characteristics of firms that hire Chief Risk Officers. Pagach, Donald; Warr, Richard - 27 pages. [RKN: 74850]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2011) **78 (1)** : 185-211.
Available online via Athens
We examine the characteristics of firms that adopt enterprise risk management (ERM) and find support for the hypothesis that firms adopt ERM for direct economic benefit rather than to merely comply with regulatory pressure. Using chief risk officer (CRO) hires as a proxy for ERM adoption we find that firms that are larger, more volatile, and have greater institutional ownership are more likely to adopt ERM. In addition, when the CEO has incentives to take risk, the firm is also more likely to hire a CRO. Finally, banks with lower levels of Tier 1 capital are also more likely to hire a CRO.
http://www.openathens.net

Comparison of stakeholder perspectives on current regulatory and reporting reforms. Wagner, Joël; Zemp, Alexandra - 30 pages. [RKN: 70640]
Shelved at: JOU
Risk Management and Insurance Review (2012) **15 (2)** : 225-254.
Available online via Athens: Wiley Online Library
In the European insurance industry, regulatory and reporting frameworks are currently subject to far-reaching reforms. We focus on four of these frameworks, namely the Solvency II framework, insurance guaranty systems, the proposed IFRS 4 Phase II international accounting standards, and Market Consistent Embedded Value reporting. We present these frameworks, analyze them from the insurance company's management, investors, and policyholder perspectives, and compare them. Our analysis implies that the four frameworks need to be considered jointly, due to various interrelations and interactions. We argue that a coordinated introduction will be necessary to ensure that the regulatory burden is reduced and synergies can be utilized in the event of all four frameworks being implemented as planned. Furthermore, we analyze the challenges of a holistic, comprehensive approach to insurance reporting and regulation and its implementation in order to achieve the goals set by the frameworks.
http://www.openathens.net

Corporate governance failures : The role of institutional investors in the global financial crisis. Hawley, James; Kamath, Shyam; Williams, Andrew (2011). - Philadelphia: University of Pennsylvania Press, 2011. - 344 pages. [RKN: 73678]
Shelved at: 330.9
Corporate governance, the internal policies and leadership that guide the actions of corporations, played a major part in the recent global financial crisis. While much blame has been targeted at compensation arrangements that rewarded extreme risk-taking but did not punish failure, the performance of large, supposedly sophisticated institutional investors in this crisis has gone for the most part unexamined. Shareholding organizations, such as pension funds and mutual funds, hold considerable sway over the financial industry from Wall Street to the City of London. Corporate Governance Failures: The Role of Institutional Investors in the GIobal Financial Crisis exposes the misdeeds and lapses of these institutional investors leading up to the recent economic meltdown.

Corporate management of highly dynamic risks: : Evidence from the demand for terrorism insurance in Germany. Thomann, Christian; Pascalau, Razvan; von der Schulenburg, J Mattias Graf - 26 pages. [RKN: 74942]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (1)** : 57-82.
This paper investigates a corporation's risk management response to highly dynamic risks. Using a unique data set on the German terrorist insurance market, the paper tests whether corporate risk managers have a clear understanding of the probability distribution of highly dynamic risks or if risk managers learn from severe losses and base their decisions upon day-to-day experience. The paper further investigates whether risk managers become more confident in their risk management decisions over time. For this purpose, we apply Viscusi's prospective reference theory to a corporate context. We find that firms learn from single events when making their risk management decisions, and that risk managers become more confident with their risk management decisions over time.

Counterparty credit risk : News, views and open issues : Comment. Bocker, Klaus; Stamm, Roland [RKN: 45707]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 227-233.
Counterparty credit risk (CCR) is a central topic for any modern financial institution's risk management. In this paper we present a personal selection of issues related to CCR measurement which we consider still unresolved or at least controversial. These issues include credit value adjustment, exposure simulation, valuation in general and model risk.

Crash course. Cantle, Neil; Ingram, David Staple Inn Actuarial Society, - 2 pages. [RKN: 70906]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **October** : 30.
Neil Cantle and David Ingram highlight the perils of modelling outcomes and show how to avert danger with systems thinking.
http://www.theactuary.com/

Developments in the management of annuity business. Telford, P G; Browne, B A; Collinge, E J; Fulcher, P; Johnson, B E; Little, W; Lu, J L C; Nurse, J M; Smith, D W; Zhang, F (2011). 2011. [RKN: 72306]
Shelved at: Online only Shelved at: JOU/INS
BAJ (2011) **16(3)** : 471-551.
The focus of the paper is non-profit lifetime annuities in the UK. Annuity insurers have been faced with, or have initiated, an unprecedented amount of change during the last decade, and rapid change is still continuing. We draw out implications for the actuarial management of the business, arising from the evolution of: longevity risk assessment and management, investment strategy and operations, financial reporting, and enterprise risk management. We discuss Solvency II in some technical depth, analysing the proposed rules for technical provisions and solvency capital requirement.
Keywords: Annuities; Retirement Income; Longevity; Mortality Improvement; Reinsurance; Underwriting; Collateral; Investment;

Asset-Liability Management; Financial Reporting; IFRS; Pillar I; Individual Capital Assessment; Enterprise Risk Management; Solvency II; Illiquidity Premium; Economic Capital
http://www.actuaries.org.uk/research-and-resources/documents/developments-management-annuity-business

Disability risk management and post-injury employment of workers with back pain. Johnson, William G; Butler, Richard J; Baldwin, Marjorie L; Côté, Pierre - 21 pages. [RKN: 73820]
Shelved at: JOU
Risk Management and Insurance Review (2012) **15 (1)** : 35-55.
We analyze the outcomes of occupational back pain among four large employers that use one or more of the following disability management practices: aggressive return to work, claims management, medical management, or time-limited job accommodations. Outcomes measured at 6 and 12 months postonset include: duration of initial work absence and the probability of returning to stable employment. Employment outcomes are better in firms with more proactive return-to-work policies than in firms with more restrictive policies. We devise a statistical test for attrition bias and conclude that sample attrition does not significantly alter our results.
http://www.openathens.net

Do U.S. insurance firms offer the "wrong" incentives to their executives?. Milidonis, Andreas; Stathopoulos, Konstantinos - 30 pages. [RKN: 74868]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2011) **78 (3)** : 643–672.
Available online via Athens
We examine the relation between executive compensation and market-implied default risk for listed insurance firms from 1992 to 2007. Shareholders are expected to encourage managerial risk sharing through equity-based incentive compensation. We find that long-term incentives and other share-based plans do not affect the default risk faced by firms. However, the extensive use of stock options leads to higher future default risk for insurance firms. We argue that this is because option-based incentives induce managerial risk-taking behavior, which seeks to maximize managerial payoff through equity volatility. This could be detrimental to the interests of shareholders, especially during a financial crisis.
http://www.openathens.net

Does nurture matter: Theory and experimental investigation on the effect of working environment on risk and time preferences. Nguyen, Quang Springer, [RKN: 45531]
Journal of Risk and Uncertainty (2011) **43 (3)** : 245-270.
Building upon the reference dependent preferences model, we develop a theoretical framework to examine the relationship between environment and preferences. To verify the model's prediction, we use a combined artefactual field experiment and household survey data in Vietnam to investigate whether involvement is risky and has long-run targeted benefits, thereby causing fisherment to exhibit different risk and time preferences than workers in other occupations. Using a structural model approach, we integrate prospect theory and hyperbolic time discounting into a single framework, to simultaneously estimate and correlate the parameters of both risk and time preferences with other demographic vaiables. The key finding that fishermen are found to be less risk-averse and more patient than others asserts the theoretical prediction about the influence of the working environment on preferences.

Effects of risk management on cost efficiency and cost function of the U.S. Property and liability insurers. Lin, Hong-Jen; Wen, Min-Ming; Yang, Charles C Society of Actuaries, - 12 pages. [RKN: 74918]
Shelved at: Per: NAAJ (Oxf) Per NAAJ (Lon) Shelved at: JOU
North American Actuarial Journal (2011) **15 (4)** : 487-498.
This paper adopts the one-step stochastic frontier approach to investigate the impact of risk management tools of derivatives and reinsurance on cost efficiency of U.S. property-liability insurance companies. The stochastic frontier approach considers both the mean and variance of cost efficiency. The sample includes both stock and mutual insurers. Among the findings, the cost function of the entire sample carries the concavity feature, and insurers tend to use financial derivatives for firm value creation. The results also show that for the entire sample the use of derivatives enhances the mean of cost efficiency but accompanied with larger efficiency volatility. Nevertheless, the utilization of financial derivatives mitigates efficiency volatility for mutual insurers. This research provides important insights for the practice of risk management in the property-liability insurance industry.
http://www.soa.org/news-and-publications/publications/journals/naaj/naaj-detail.aspx

An empirical examination of stakeholder groups as monitoring sources in corporate governance
. Cole, Cassandra R; He, Enya; McCullough, Kathleen A; Semykina, Anastasia; Sommer, David W - 28 pages. [RKN: 74870]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2011) **78 (3)** : 703-730.
Available online via Athens
Insurers are formally and informally monitored by a variety of stakeholders, including reinsurers, agents, outside board members, and regulators. While other studies have generally examined these stakeholders separately, they have not accounted for the fact that there is some relation among the stakeholder groups, and the presence of these groups is likely to be jointly determined. By empirically controlling for these potential interrelations, we create a more complete assessment of the impact of these stakeholders/monitors on insurers' risk taking. Specifically, we find that the presence of some stakeholders offsets the degree or presence of others, and that most stakeholders/monitors are associated with a reduction of overall firm risk.
http://www.openathens.net

Enterprise risk management: strategic antecedents, risk integration and performance. Lin, Yijia; Wen, Min-Ming; Yu. Jifeng Society of Actuaries, - 28 pages. [RKN: 73839]
Shelved at: Per: NAAJ (Oxf) Per NAAJ (Lon) Shelved at: JOU
North American Actuarial Journal (2012) **16 (1)** : 1-28.
The current literature on the adoption of enterprise risk management (ERM) abstracts from the issue of its strategic context. Accounting for the interplay between ERM and various individual risk management (IRM) practices, this paper presents a theoretical basis to study the strategic determinants, risk integration, and value creation of ERM. We tested hypotheses with data from the U.S. property and casualty insurance industry. Our results show that insurers with more reinsurance purchase and greater geographic diversification are more likely to adopt ERM. After ERM initiation, the magnitude of certain IRM adjustments is

substantial. The market responds negatively to ERM adoption. ERM displays a strong negative correlation with firm value with a discount of 5% (4%) in terms of Tobin's Q (ROA)
http://www.soa.org/news-and-publications/publications/journals/naaj/naaj-detail.aspx

ERM for insurance companies - Adding the investor's point of view. Hitchcox, A N; Klumpes, P J M; McGaughey, K W; Smith, A D; Taverner, N H (2010). 2010. [RKN: 72028]
Shelved at: ifp 01/10 (Strg box SI Ref 5) ifp 01/10 (Lon) Shelved at: JOU/INS
BAJ (2011) **16(2)** : 385-404.
A major outcome of ERM activities in insurance companies has been the bringing together of all of the key risks in the company, to be managed together in a holistic fashion. The authors of this paper believe that an ERM framework also needs to look beyond the company, and have regard to the risk management needs of investors, from the point of view of the contribution of the insurance company to the overall risk and reward of their total investment portfolios. To meet these needs, the ERM framework needs to provide sufficient information on topics such as systematic risk, potential correlations of earnings from future new business with macroeconomic trends, other risks to franchise value, and sources of model risk within the company. The paper does not provide solutions for the issues described above; but limits itself to describing and discussing the direction for some important new initiatives in ERM activities. Keywords: Risk Management; Enterprise Risk Management (ERM); Systematic Risk; Franchise Value; Buffer Capital; Cost of Capital; Replicating Portfolio; Parameter Risk; Model Risk; Agency Risk; Risk Governance; Risk Disclosure.
http://www.actuaries.org.uk/research-and-resources/documents/erm-insurance-companies-adding-investors-point-view

Exposure to risk : Letter to the editor. Pepper, Anthony Staple Inn Actuarial Society, - 1 pages. [RKN: 73902]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2011) **August** : 6.
Contends that the Financial Ombudsman service is not properly demonstrating the level of cases that might be considered exposed to risk in its reporting.
http://www.theactuary.com/

Foreign ownership and non-life insurer efficiency in the Japanese marketplace. Huang, Li-Ying; Ma, Yu-Luen; Pope, Nat - 32 pages. [RKN: 73821]
Shelved at: JOU
Risk Management and Insurance Review (2012) **15 (1)** : 57-88.
Traditional shareholding patterns in Japan have experienced significant change beginning in the early 1990s. Since that time, foreign institutional shareholding has increased significantly largely at the expense of domestic financial institution ownership. This article examines whether these changes in ownership patterns share a relationship with insurer performance in the non-life insurance market. Using data from 1992 to 2005, we assess performance in terms of efficiency measures using data envelopment analyses (DEA) techniques. Our results show that higher levels of domestic financial institution ownership in Japan are associated with insurer inefficiency. Relative to that relationship, the foreign ownership–insurer efficiency relationship is found to be positive. Additionally, we find that the disparity between those relationships has become more acute since 2001 when the Japanese non-life insurance market experienced significant consolidation.
http://www.openathens.net

A free lunch...from the EU?. Cook, Paul; Rajoo, Meera Staple Inn Actuarial Society, - 2 pages. [RKN: 74929]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **January/February** : 30-31.
Solvency II offers a real incentive for diversifying risk, but is it quite the bonus it appears to be? Paul Cook and Meera Rajoo investigate
http://www.theactuary.com/

From tents to Tahrir Square. Luzzi, Jorge Staple Inn Actuarial Society, [RKN: 74807]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2011) **December** : 10.
Companies are looking for solutions for business interruption risks
http://www.theactuary.com/

Fuel risk management at American electric power. Buck, Douglas; Elliott, Dwayne; Niehaus, Greg; Rives, Bill; Thomas, Laura - 22 pages. [RKN: 73818]
Shelved at: JOU
Risk Management and Insurance Review (2012) **15 (1)** : 1-22.
The senior management team and board of directors at American Electric Power (AEP) have emphasized the importance of an Enterprise Risk Management approach for dealing with the wide array of risk exposures that the firm faces. Senior management has put in place a risk governance structure that facilitates the identification of major risk exposures, assesses their impact on the firm's overall risk profile, and interacts the risk management process with the strategic planning process. Central to this structure is the firm's Risk Executive Committee, which includes the senior leadership of the firm and the Enterprise Risk Oversight staff. Members of the AEP Enterprise Risk Oversight group have just returned from a meeting of the Risk Executive Committee. The discussion at the meeting focused on an event that recently came to the firm's attention—an unexpected disruption in the firm's coal supply over the coming year due to necessary repairs in railroad facilities near the coal source. By the end of the week, the Enterprise Risk Oversight group needs to communicate with the relevant teams within the organization as part of its effort to identify the potential repercussions of the event for the enterprise. In addition, the Risk Executive Committee would like the groups to identify other possible adverse events that could occur and steps that should be taken now in preparation.
http://www.openathens.net

General wrong-way risk and stress calibration of exposure. Pykhtin, Michael [RKN: 45708]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 234-251.

A conceptually sound method of incorporating general wrong-way risk (WWR) into the asymptotic single risk factor (ASRF) framework that underlies Basel capital rules is shown in the first part of this paper. An algorithm is presented that converts the unconditional distribution of netting-set-level exposure generated by an arbitrary Monte Carlo simulation process to an exposure at default (EAD) measure that consistently incorporates general WWR under the ASRF framework. The conversion is done at a counterparty level via a simple closed-form function of a single parameter that controls the strength of general WWR. The second part of the paper analyses the Basel III requirement that, in addition to normal calibration, banks' credit exposure models must be calibrated to a period of stress. Basel III justified the introduction of stress calibration by the need for capturing general WWR. However, it is argued that stress calibration of exposure does not address general WWR adequately. Simple examples are used to show that EADs obtained with stress calibration for a benign period will severely overstate not only the EAD seen in that benign period, but also the EAD seen in the stressed period.

The governance of risk : Guest editorial. Koenig, David R [RKN: 45688]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 108-111.

The governance of strategic risks in systemically important banks. McConnell, Patrick [RKN: 45691]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 128-142.

Among the many market weaknesses highlighted by the global financial crisis, the widespread failures of corporate governance and risk management were identified by official inquiries as being critical. As a result, banking regulatory bodies have responded, proposing long overdue principles of good corporate governance, in particular tightening up on the roles and responsibilities of boards of directors. Strategic risk is arguably, because of the immense uncertainty in the global economy, the greatest risk facing any firm, most especially systemically important banks (SIB); however, strategic risk management, or the management of the risks to a firm's long-term corporate strategy, is not a well-developed discipline. The lack of maturity in the discipline stems, in part, from a fundamental conflict of interest in that the board and management 'own' a firm's strategy but they are at the same time also responsible for implementing the strategy and managing the strategic risks. There is no independent review of the strategic risks taken by many firms, which constitutes a serious deficiency in corporate governance. This paper considers the governance of strategic risks, using Lehman Brothers as a case study, identifying areas of deficiency of governance of strategic risk in practice. The paper also proposes some potential solutions to help address such governance problems.

ICGN corporate risk oversight guidelines : The role of the board and institutional shareholders. Breen, Erik; Clearfield, Andrew; Klimczak, Karol M [RKN: 45690]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 115-127.

Oversight of risk has become a significant issue in the corporate governance debate following the failure of traditional institutions. In the aftermath of the crisis, the International Corporate Governance Network (ICGN) developed the 'ICGN Corporate Risk Oversight Guidelines' to help institutional investors assess how effectively the boards of their portfolio companies carry out their oversight function regarding financial and non-financial risk. The ICGN Guidelines reflect a consensus achieved during a year of discussions between technical committee members, the sounding board and contributors of comment letters, who represented various institutions and jurisdictions across the world. These debates have culminated in a document that discusses not only the board and company process of risk management and risk oversight and disclosures concerning financial and non-financial risks, but also the investors' responsibilities in oversight and their communication with the companies. The purpose of this paper is to present the ICGN Guidelines with a commentary linking it to the current debate and developments in the corporate world.

Institutional ownership stability and risk taking: evidence from the life–health insurance industry. Cheng, Jiang; Elyasiani, Elyas; Jia, Jingyi - 33 pages. [RKN: 74867]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2011) **78 (3)** : 609–641.

Available online via Athens
We investigate the relationship between risk taking of life–health (LH) insurers and stability of their institutional ownership within a simultaneous equation system model. Three main results are obtained. First, stable institutional ownership of is associated with lower total risk of LH insurers, supporting the prudent-man law hypothesis. Second, when investors are sorted in terms of stringency of the prudent-man restrictions, their negative effect on risk holds for all, except insurance companies, as owners of LH insurers. Third, large institutional owners do not raise the riskiness of the investee-firms, as proposed by the large shareholder hypothesis. Regulatory implications are drawn.

An insurance pricing game. Haley, Joseph D - 12 pages. [RKN: 73824]
Shelved at: JOU
Risk Management and Insurance Review (2012) **15 (1)** : 117-128.

Understanding data and statistical distributions is a fundamental part of an undergraduate business student's education. The insurance pricing game presented here gives the students a unique way to apply statistical analysis in the classroom. The game requires decision making about risk with limited information. Specifically, the students must decide what "premium" to charge the members of a hypothetical risk pool. The game provides teachers with a discussion platform for numerous aspects of insurer risk pooling.

Insurance protection funds in the European Union—Quo Vadis?. Monkiewicz, Marek - 18 pages. [RKN: 73822]
Shelved at: JOU
Risk Management and Insurance Review (2012) **15 (1)** : 89-106.

Contrary to the development in other major insurance markets in the world only 13 out of 27 EU member states have introduced until now some type of insurance protection funds (IPF). As a result around a third of the market is without any collective protection. There is also a continuous debate since 2001 among the member states on the need for such a system at the community level. The experiences of the latest financial crisis have raised new arguments for reorganizing the existing system to avoid regulatory arbitrage and to strengthen consumer security. Even the prospective implementation of provisions strengthening supervisory bodies, and the new solvency directive (so-called Solvency II) are not fail-safe solutions. This article is an attempt to review the current situation as regards IPF in the EU and to discuss possible development scenarios.
http://www.openathens.net

Is it time to embrace risk?. Jobanputra, Deepak Staple Inn Actuarial Society, - 1 pages. [RKN: 70678]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **September** : 5.

We should see risk as a potential opportunity to define a solution, suggests Deepak Jobanputra
http://www.theactuary.com/

Life insurance risk management essentials. Koller, Michael (2011). - Berlin: Springer-Verlag, 2011. - xxi, 334 p. pages. [RKN: 45278]
Shelved at: BV/BXP (Lon)

The aim of the book is to provide an overview of risk management in life insurance companies. The focus is twofold: (1) to provide a broad view of the different topics needed for risk management and (2) to provide the necessary tools and techniques to concretely apply them in practice.

Living legacy. Carswell, Wilson Staple Inn Actuarial Society, - 2 pages. [RKN: 70765]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **July** : 24-25.

Dr Wilson Carswell looks at the causal link between the untimely death of Lawrence of Arabia and Periodic Payment Orders (PPOs).
http://www.theactuary.com/

Models for quantifying risk. Cunningham, Robin J; Herzog, Thomas N; London, Richard L (2011). - 4th ed. Actex, 2011. - 474 pages. [RKN: 74932]
Shelved at: 368.01

This textbook presents a variety of stochastic models for the actuary to use in undertaking the analysis of risk. It is designed to be appropriate for use in a two- or three-semester university course in basic actuarial science. It was also written with the SOA Exam MLC in mind. It covers all of the life contingencies 2012 exam topics in a single reference.

Models are evaluated in a generic form with life contingencies included as one of many applications of the science. Students will find this book to be a valuable reference due to its easy-to-understand explanations and the end-of-chapter exercises. It also introduces students to the practical use of the science via the Appendices.

The Fourth edition has been updated to support the new Learning Objectives for SOA Exam MLC beginning in 2012. Material has been added to address the notion of interest rate risk and new applications for the concept of reserves. Additional emphasis has been placed on representing various actuarial models as multi-state models, using the mathematics of discrete-time and/or continuous-time Markov Chains, as well as the use of simulation techniques.

Navigating in a changing world : Global risk managing survey, 7th ed.. (2011). Deloitte Global Services Ltd, 2011. - 43 pages. [RKN: 45103]
Shelved at: online only

Deloitte's Global risk management survey, seventh edition, assesses the state of risk management in this new environment. The survey was conducted during the third quarter of 2010, and its results are based upon the responses of 131 financial institutions from around the world - including retail and commercial banks, insurance companies, and asset managers - with aggregate total assets of more than $17 trillion. Key findings of the survey include: 1) The position of Chief Risk Officer (“CRO”) continued to become increasingly prevalent. Eighty-six percent of institutions had a CRO or equivalent position, up from 73 percent in 2008 and 65 percent in 2002. The CRO has been given a high profile, reporting at the board level or to the CEO (or both) at 85 percent of institutions. Fifty-one percent of institutions reported that the board of directors conducts executive sessions with the CRO, compared to 37 percent in 2008. 2) In the wake of the global financial crisis, the importance of incorporating risk management considerations into performance evaluations and compensation decisions has been widely discussed, but 37 percent of institutions reported that they had completely or substantially done so for business unit personnel. 3) More institutions have adopted ERM programs - 79 percent of institutions reported having an ERM program or equivalent in place or in progress, an increase from 59 percent in 2008. The greatest challenges in implementing an effective ERM program, cited by roughly a quarter of institutions as extremely or very challenging, were integrating data across the organization and cultural issues. 4) More than 80 percent of institutions experienced significant impacts from regulatory changes in the countries where they operate; at 40 percent of responding institutions, these impacts included the need to maintain higher capital levels and the need to maintain higher liquidity ratios.
http://www.finextra.com/Finextra-downloads/featuredocs/GRMS%207th%20edition%20report%20final.pdf

The new model of governance and risk management for financial institutions. Bugalla, John; Kallman, James; Lindo, Steve; Narvaez, Kristina [RKN: 45695]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 181-193.

The paper proposes a new model of governance and risk management consisting of four components: (i) board risk oversight responsibilities, (ii) a board level risk committee, (iii) an executive risk committee and (iv) an individual with responsibility for overall risk management. Some companies are subject to the Dodd–Frank Act and are forming a stand-alone risk committee; other

companies still have the option of adopting these best practices. The paper contends that the new model promotes greater risk disclosure, the audit committee should complement the risk management committee, the board level risk committee should have an independent member with extensive risk management experience, the board should develop a clear risk position, management should form an executive risk committee, have a chief risk officer, create an internal risk intelligence function and, if these are done, institutions will enjoy higher stock prices.

The next big thing. Ball, Matthew; Jing, Yi; Sullivan, Landon Staple Inn Actuarial Society, - 3 pages. [RKN: 70768]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **July** : 30-32.
Matthew Ball, Yi Jing and Landon Sullivan examine why quantifying risks from mass torts has lagged behind natural catastrophe modelling and how recent advances make it possible to prepare for the 'next asbestos'.
http://www.theactuary.com/

On counterparty risk : Lead comment. Haldane, Andrew G [RKN: 45706]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 224-226.
The financial crisis demonstrated the inadequacy of the management of counterparty credit risk and the vulnerability of financial structures to counterparty concerns. Three possible solutions are proposed to mitigate such risks in the future: improved network visibility to understand credit chains; the clearing of transactions centrally to improve transparency and reduce intra-financial system debt; and building protection against counterparty default through higher capital and margining requirements.

Opportunity knocks. Cairns, Martin Staple Inn Actuarial Society, [RKN: 45434]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **September** : 34-35.
Martin Cairns looks at the options for insurers to benefit from improved quantification of reinsurance counterparty risk.
http://www.theactuary.com/

Optimal dividend strategies in a Cramer–Lundberg model with capital injections and administration costs. Scheer, Natalie; Schmidli, Hanspeter [RKN: 44806]
Shelved at: online only
European Actuarial Journal (2011) **1(1) July** : 57-92.
Available online via Athens
In this paper, we consider a classical risk model with dividend payments and capital injections in the presence of both fixed and proportionals administration costs. Negative surplus or ruin is not allowed. We measure the value of a strategy by the discounted value of the dividends minus the costs. It turns out, capital injections are only made if the claim process falls below zero. Further, at the time of an injection the company may not only inject the deficit, but inject additional capital C C 0 to prevent future capital injections. We derive the associated Hamilton–Jacobi–Bellman equation and show that the optimal strategy is of band type. By using Gerber–Shiu functions, we derive a method to determine numerically the solution to the integro-differential equation and the unknown value C.
http://www.openathens.net

Our inability to judge time frames. Lukomnik, Jon [RKN: 45692]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 143-145.
Properly assessing time is fundamental to risk governance and risk management. However, two recent studies reveal systemic weaknesses in how accurately future events are discounted. The first reveals that distant cash flows are over discounted and the second suggests that self-defined time horizons are ineffective and ignored.

Plan of action. Durkin, Tom Staple Inn Actuarial Society, [RKN: 45264]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **June** : 32-33.
Tom Durkin looks at risk management strategy and why it is a perfect opportunity for actuaries to make a difference.
http://www.theactuary.com/

Playing the long game. Plat, Richard Staple Inn Actuarial Society, [RKN: 45110]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **March** : 26-27.
Richard Plat describes a stochastic mortality model suitable for calculating capital on a one-year Value-at-Risk measure.
http://www.theactuary.com/archive

Preparation is the best defence - Response to R. Fitzherbert, April 2011 : Letter of the month. Thomas, Ian Staple Inn Actuarial Society, - 1 pages. [RKN: 73898]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2011) **June** : 7.
Suggests training for actuaries should include better consideration of periods in history when risk management and modelling failed.
http://www.theactuary.com/

Quantification of central counterparty risk. Arnsdorf, Matthias [RKN: 45710]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 273-287.
A clearing member of a central counterparty (CCP) is exposed to losses on their guarantee fund and initial margin contributions. Such losses can be incurred whenever the CCP has insufficient funds to unwind the portfolio of a defaulting clearing member. This does not necessarily require the default of the CCP itself. In this paper the aim is to quantify the risk a financial institution has when facing a CCP. It is shown that a clearing member's CCP risk is given by a sum of exposures to each of the other clearing members.

This arises because of the implicit default insurance that each member has provided in the form of mutualised, loss sharing collateral. The exposures are calculated by explicitly modelling the capital structure of a CCP as well as the loss distributions of the individual member portfolios. An important consideration in designing the model is the limited transparency with respect to the portfolio composition and collateral levels of individual clearing members. To overcome this the fact is leveraged that, for a typical CCP, margin levels are risk based. In particular, the portfolio loss tail as a Pareto distribution is parameterised and this is calibrated to the CCP defined probability of losses exceeding the posted initial margin levels. A key aspect of the model is that wrong-way risk is explicitly taken into account, ie the fact that member defaults are more likely to occur in stressed market conditions, as well as potential contagion between a member's default and the losses on his portfolio.

Risk and precaution. Randall, Alan (2011). - 1st ed. - Cambridge: Cambridge University Press, 2011. - xvii, 260 p. pages. [RKN: 45567]
Shelved at: BXP

The precautionary principle has been labeled simplistic and the rational approach to decision-making under risk was modeled on well-specified games of chance. How then are we to manage the risks, uncertainties, and 'unknown unknowns' of the real world? In this book, Alan Randall unravels the key controversies surrounding the precautionary principle and develops a new framework that can be taken seriously in policy and management circles. Respecting the complexity of the real world, he defines a justifiable role for the precautionary principle in a risk management framework that integrates precaution with elements of the standard risk management model. This is explained using examples from medicine, pharmacy, synthetic chemicals, nanotechnology, the environment and natural resources conservation. This carefully reasoned but highly accessible book will appeal to readers from a broad range of disciplines, including environmental policy, risk management and cost-benefit analysis.

Risk management for insurers : Risk control, economic capital and Solvency II. Doff, René (2011). - 2nd ed. - London: Risk Books, 2011. - xi, 322 pages. [RKN: 45485]
Shelved at: BX/BXP/BUG (Lon) Shelved at: 519.287

All over the globe insurers are facing the impact of the turmoil on the financial markets, making it more crucial than ever to fully understand how to implement risk management best practice. In this timely second edition, industry expert René Doff argues that Solvency II, which aims to improve standards of risk assessment, should be regarded as an opportunity. Solvency II will provide incentives for insurance companies to improve their risk management systems and will allow you to benefit from the risk management efforts in the context of supervision.

Risk management in organizations: An integrated case study approach. Woods, Margaret (2011). - Abingdon: Routledge, 2011. - 176 pages. [RKN: 73675]
Shelved at: 658.15

In this accessible textbook the author sets the world of risk management in the context of the broader corporate governance agenda, as well as explaining the core elements of a risk management system. Material on the differences between risk management and internal auditing is supplemented by a section on the professionalization of risk – a relatively contemporary evolution. Enterprise risk management is also fully covered.

With a detailed array of risk management cases – including Tesco, RBS and the UK government – lecturers will find this a uniquely well researched resource, supplemented by materials that enable the cases to be easily integrated into the classroom. Risk managers will be delighted with the case materials made available for the first time with the publication of this book.

A role for actuaries. Maneval, David Staple Inn Actuarial Society, [RKN: 45107]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **March** : 20-21.

David Maneval looks at the need to routinely monitor emerging risks to identify potential hazards.
http://www.theactuary.com/archive

Securitization of longevity risk using percentile tranching (pages). Changki Kim and; Yangho Choi - 22 pages. [RKN: 74876]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2011) **78 (4)** : 885–906.

Available online via Athens
Securitizations that transfer risk to the financial markets are a potential solution to longevity risk in the annuity business. The classical Lee–Carter model is applied to generate the future stochastic survival distribution. A method to design inverse survivor bonds using percentile tranches and to calculate the security prices is presented. The percentile tranche method is a simple and practical way for the issuer to design and price the security. This method can serve to identify the risk–yield relationship, which can provide investors with clear insight regarding the appropriate choice of tranches.
http://www.openathens.net

Solvency II: A change of view. Saini, Harjit; Haslip, Gareth Staple Inn Actuarial Society, [RKN: 73707]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **November** : 33-35.

Harjit Saini and Gareth Haslip describe how capital management at Lloyd's is changing in response to the requirements of Solvency II
http://www.theactuary.com/

Solvency II: Boxing clever. Cox, Andrew Staple Inn Actuarial Society, [RKN: 73705]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **November** : 30-31.

Andrew Cox models an implementation of the one-year test using two approaches
http://www.theactuary.com/

Staring into a black hole. Haldane, Andrew G; Nelson, Benjamin Staple Inn Actuarial Society, - 2 pages. [RKN: 70905]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **October** : 28.

Andrew Haldane and Benjamin Nelson argue the need for a fundamental rethink of risk management tools and regulatory capital requirements.
http://www.theactuary.com/

Statistical tools for finance and insurance. Cizek, Pavel; Hardle, Wolfgang Karl; Weron, Rafal (2011). - 2nd ed. - London: Springer, 2011. - 420 pages. [RKN: 73685]
Shelved at: 519.5

Statistical Tools for Finance and Insurance presents ready-to-use solutions, theoretical developments and method construction for many practical problems in quantitative finance and insurance. Written by practitioners and leading academics in the field, this book offers a unique combination of topics from which every market analyst and risk manager will benefit. Features of the significantly enlarged and revised second edition: Offers insight into new methods and the applicability of the stochastic technologyProvides the tools, instruments and (online) algorithms for recent techniques in quantitative finance and modern treatments in insurance calculations. Covers topics such as - expected shortfall for heavy tailed and mixture distributions* - pricing of variance swaps* - volatility smile calibration in FX markets - pricing of catastrophe bonds and temperature derivatives* - building loss models and ruin probability approximation - insurance pricing with GLM* - equity linked retirement plans* (new topics in the second edition marked with*) Presents extensive examples

Strategic market entry project. Ferguson, William L; Ferguson, Tamela - 11 pages. [RKN: 74704]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (1)** : 145-155.

Successful risk management is critical to top level decision makers in any organization, involving fundamental strategic policy and planning to identify and allocate scarce resources to projects or activities that generate sustainable competitive advantage and maximize available long-term growth opportunities, or even survival. This article describes a flexible group project wherein students of risk management and insurance (RMI) may gain additional exposure and experience with applications of fundamental strategic management theory in the context of their particular RMI major coursework. The Project may be a useful tool in helping RMI students further develop their research and presentation skills, as well as enhance critical strategic decision making; exposure to cultural, regional or globalization issues; application of fundamental strategic management concepts; and knowledge of current events. While this Project was developed primarily for RMI students, students across business disciplines also may benefit from participation.
http://www.openathens.net

Systemic risk in financial services. Besar, D; Booth, P; Chan, K K; Milne, A K L; Pickles, J - 106 pages. [RKN: 74795]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 195-300.

The current banking crisis has reminded us of how risks materialising in one part of the financial system can have a widespread impact, affecting other financial markets and institutions and the broader economy. This paper, prepared on behalf of the Actuarial Profession, examines how such events have an impact on the entire financial system and explores whether such disturbances may arise within the insurance and pensions sectors as well as within banking. The paper seeks to provide an overview of a number of banking and other financial crises which have occurred in the past, illustrated by four case studies. It discusses what constitutes a systemic event and what distinguishes it from a large aggregate system wide shock. Finally, it discusses how policy-makers can respond to the risk of such systemic financial failures.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Systemic risk in financial services : Abstract of the London discussion on the preceding. Milne, A K L - 19 pages. [RKN: 74796]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 301-319.

This discussion relates to the following paper:
D. Besar, P. Booth, K.K. Chan, A.K.L. Milne & J. Pickles Systemic risk in financial services. British Actuarial Journal Vol 16 No 2
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Systemic risk in financial services : Abstract of the Edinburgh discussion on the preceding. Milne, A K L - 20 pages. [RKN: 74797]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 321-340.

This discussion relates to the following paper:
D. Besar, P. Booth, K.K. Chan, A.K.L. Milne & J. Pickles Systemic risk in financial services. British Actuarial Journal Vol 16 No 2
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Tabletop disaster exercise to enhance risk management education. Nielson, Norma L; Kitching, Brian - 12 pages. [RKN: 73819]
Shelved at: JOU
Risk Management and Insurance Review (2012) **15 (1)** : 23-34.

This article describes a disaster planning exercise undertaken by a University class of risk management students
http://www.openathens.net

Transferring knowledge of risk management to the board of directors and executives. Rodriguez, Eduardo; Edwards, John S [RKN: 45694]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 162-180.

Enterprise risk management (ERM) and knowledge management (KM) both encompass top-down and bottom-up approaches developing and embedding risk knowledge concepts and processes in strategy, policies, risk appetite definition, the decision-making process and business processes. The capacity to transfer risk knowledge affects all stakeholders and understanding of the risk knowledge about the enterprise's value is a key requirement in order to identify protection strategies for

business sustainability. There are various factors that affect this capacity for transferring and understanding. Previous work has established that there is a difference between the influence of KM variables on risk control and on the perceived value of ERM. Communication among groups appears as a significant variable in improving risk control but only as a weak factor in improving the perceived value of ERM. The ERM mandate, however, requires for its implementation a clear understanding of risk management (RM) policies, actions and results, and the use of the integral view of RM as a governance and compliance programme to support the value-driven management of the organisation. Furthermore, ERM implementation demands better capabilities for unification of the criteria of risk analysis, alignment of policies and protection guidelines across the organisation. These capabilities can be affected by risk knowledge sharing between the RM group and the board of directors and other executives in the organisation. This research presents an exploratory analysis of risk knowledge transfer variables used in risk management practice. A survey to risk management executives from 65 firms in various industries was undertaken and 108 answers were analysed. Potential relationships among the variables are investigated using descriptive statistics and multivariate statistical models. The level of understanding of risk management policies and reports by the board is related to the quality of the flow of communication in the firm and perceived level of integration of the risk policy in the business processes.

The two sides of a risky coin. Martinez, Cristina Staple Inn Actuarial Society, - 1 pages. [RKN: 73977]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **June** : 8.

A pragmatic partnership between actuarial approaches and risk management can benefit many businesses, says Cristina Martinez
http://www.theactuary.com/

The use of postloss financing of catastrophic risk. Cole, Cassandra R; Macpherson, David A; Maroney, Patrick F; McCullough, Kathleen A; Newman, James W (Jay); Nyce, Charles - 34 pages. [RKN: 74765]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (2)** : 265-298.

Catastrophic risk financing is a critical issue for many states. At the epicenter of the debate is the role of the state government in helping homeowners finance catastrophic storm risk. In general, states have used a variety of pre- and postloss strategies, including rate regulation, residual markets, guaranty funds, and postloss assessment structures. However, several states, including Florida, Louisiana, Mississippi, and Texas have used strategies that involve potentially large postloss funding of hurricane risk. In some cases, the structure of the postloss financing mechanism is likely to create significant assessments and subsidies. This article examines the role of state government in catastrophe financing, focusing primarily on postloss financing methods. Specifically, the article provides a discussion of the advantages and disadvantages of the postloss catastrophe financing as well as the political forces that motivate the use of this approach. Further, given the potential magnitude of postloss assessments and related subsidies, we use the Florida homeowners market to illustrate the implications of the state's decisions. This allows for a concrete discussion of the impact and viability of postloss financing mechanisms.
http://www.openathens.net

Using technology to encourage critical thinking and optimal decision making in risk management education. Garvey, John; Buckley, Patrick - 11 pages. [RKN: 74766]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (2)** : 299-309.

This article draws a link between the risk management failures in the financial services industry and the educational philosophy and teaching constraints at business schools. An innovative application of prediction market technology within business education is proposed as a method that can be used to encourage students to think about risk in an open and flexible way. This article explains how prediction markets also provide students with the necessary experience to critically evaluate and stress-test quantitative risk modeling techniques later in their academic and professional careers.
http://www.openathens.net

The value of enterprise risk management. Hoyt, Robert E; Liebenberg, Andre P - 28 pages. [RKN: 74873]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2011) **78 (4)** : 795–822.

Available online via Athens
Enterprise risk management (ERM) has been the topic of increased media attention in recent years. The objective of this study is to measure the extent to which specific firms have implemented ERM programs and, then, to assess the value implications of these programs. We focus our attention in this study on U.S. insurers in order to control for differences that might arise from regulatory and market differences across industries. We simultaneously model the determinants of ERM and the effect of ERM on firm value. We estimate the effect of ERM on Tobin's Q, a standard proxy for firm value. We find a positive relation between firm value and the use of ERM. The ERM premium of roughly 20 percent is statistically and economically significant.
http://www.openathens.net

A weather eye on risk strategy. Scott, Philip Staple Inn Actuarial Society, - 1 pages. [RKN: 70683]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **September** : 7.

Climate change's influence on actuarial disciplines can help us to understand risk, suggests Philip Scott
http://www.theactuary.com/

What do we know about market discipline in insurance?. Eling, Martin - 39 pages. [RKN: 70637]
Shelved at: JOU
Risk Management and Insurance Review (2012) **15 (2)** : 185-223.

Available online via Athens: Wiley Online Library
The aim of this article is to summarize the knowledge on market discipline in insurance and other financial service sectors. Market discipline can be defined as the ability of customers, investors, intermediaries (agents, brokers), and evaluators (analysts, auditors, rating agencies) to monitor and influence a company's management. Looking at banking is especially interesting, since market discipline in this field has been studied extensively. Based on existing knowledge, we develop a framework for researching market discipline in insurance that includes its most important drivers and impediments. The results highlight a significant need for continuing research. The findings are of relevance not only for European insurers and regulators, but for institutions outside

Europe.
http://www.openathens.net

Who benefits from building insurance groups? A welfare analysis of optimal group capital management. Schlütter, Sebastian; Gründl, Helmut [RKN: 43638]
Shelved at: Per: Geneva
Geneva Papers on Risk and Insurance (2012) **37(3)** : 571-593.
Available online via Athens
This paper compares the shareholder-value-maximising capital structure and pricing policy of insurance groups against that of stand-alone insurers. Groups can utilise intra-group risk diversification by means of capital and risk transfer instruments. We show that using these instruments enables the group to offer insurance with less default risk and at lower premiums than is optimal for stand-alone insurers. We also take into account that shareholders of groups could find it more difficult to prevent inefficient overinvestment or cross-subsidisation, which we model by higher dead-weight costs of carrying capital. The trade-off between risk diversification on the one hand and higher dead-weight costs on the other can result in group-building being beneficial for shareholders but detrimental for policyholders.
http://www.openathens.net/

RISK MEASUREMENT

Are quantile risk measures suitable for risk-transfer decisions?. Guerra, Manuel; Centeno, M L [RKN: 45648]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **50 (3)** : 446-461.
Although controversial from the theoretical point of view, quantile risk measures are widely used by institutions and regulators. In this paper, we use a unified approach to find the optimal treaties for an agent who seeks to minimize one of these measures, assuming premium calculation principles of various types. We show that the use of measures like Value at Risk or Conditional Tail Expectation as optimization criteria for insurance or reinsurance leads to treaties that are not enforceable and/or are clearly bad for the cedent. We argue that this is one further argument against the use of quantile risk measures, at least for the purpose of risk-transfer decisions.
http://www.openathens.net/

Comparison of risks based on the expected proportional shortfall. Belzunce, Felix; Pinar, José F; Ruiz, Jose M; Sordo, Miguel A [RKN: 44788]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **51(2)** : 292-302.
In this paper, we consider a new criterion to compare risks based on the notion of expected proportional shortfall. This criterion is useful for comparing risks of different nature and does not depend on the base currency. We study its relationships with other criteria and provide some characterizations that highlight the role of this new criterion in the context of comparisons of risks.
http://www.openathens.net/

Counterparty credit risk : News, views and open issues : Comment. Bocker, Klaus; Stamm, Roland [RKN: 45707]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 227-233.
Counterparty credit risk (CCR) is a central topic for any modern financial institution's risk management. In this paper we present a personal selection of issues related to CCR measurement which we consider still unresolved or at least controversial. These issues include credit value adjustment, exposure simulation, valuation in general and model risk.

Counting the cost of enterprise risk management. Klumpes, Paul Staple Inn Actuarial Society, - 2 pages. [RKN: 74939]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **March** : 30-31.
Paul Klumpes looks at the accountant's perspective of managing risk
http://www.theactuary.com/

The governance of risk : Guest editorial. Koenig, David R [RKN: 45688]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 108-111.

An integrated cost of risk model and its application to company valuation. Baier, Alexander [RKN: 44817]
Shelved at: online only
European Actuarial Journal (2011) **1(1) Supplement 2** : 169-184.
Available online via Athens -- Selected paper presented during the 19th International Actuarial Association AFIR Colloquium in Munich, Germany, 2009
This paper proposes an integrated approach of measuring risk and the associated cost. The model is developed from the simple practical example of a bond spread and then generalized. This leads to a class which encompasses spectral risk measures and hence includes the popular measures Value at Risk and Tail Value at Risk and under certain conditions is coherent. The defining equations lead to a “natural” decomposition by sub portfolio under practical conditions. In an application section market data is used to parametrize the measure and evaluate the capital cost of an example company.
http://www.openathens.net

Investigating risk disclosure practices in the European insurance industry. Höring, Dirk; Gründl, Helmut Palgrave Macmillan, [RKN: 44915]
Shelved at: Per: Geneva (Oxf)
Geneva Papers on Risk and Insurance (2011) **36(3)** : 380-413.
Available online via Athens

In light of the upcoming Solvency II Pillar 3 disclosure regulation for the insurance industry, this paper explores the risk disclosure practices in annual reports of European primary insurers in the Dow Jones Stoxx 600 Insurance Index between 2005 and 2009. On the basis of a self-constructed risk disclosure index, the study examines the relation between the extent of risk disclosure and insurance companies' characteristics such as size, risk, profitability, ownership dispersion, cross-listing, home country and type of insurance sold, to draw inferences regarding motives for enhanced risk disclosure based on positive accounting theory.
http://www.openathens.net

Large sample behavior of the CTE and VaR estimators under importance sampling. Ahn, Jae Youn; Shyamalkumar, Nariankadu D Society of Actuaries, - 24 pages. [RKN: 74826]
Shelved at: Per: NAAJ (Oxf) Per NAAJ (Lon) Shelved at: JOU
North American Actuarial Journal (2011) **15 (3)** : 393-416.

The -level value at risk (VaR) and the -level conditional tail expectation (CTE) of a continuous random variable X are defined as its -level quantile (denoted by q) and its conditional expectation given the event {X q }, respectively. VaR is a popular risk measure in the banking sector, for both external and internal reporting purposes, while the CTE has recently become the risk measure of choice for insurance regulation in North America. Estimation of the CTE for company assets and liabilities is becoming an important actuarial exercise, and the size and complexity of these liabilities make inference procedures with good small sample performance very desirable. A common situation is one in which the CTE of the portfolio loss is estimated using simulated values, and in such situations use of variance reduction techniques such as importance sampling have proved to be fruitful. Construction of confidence intervals for the CTE relies on the availability of the asymptotic distribution of the normalized CTE estimator, and although such a result has been available to actuaries, it has so far been supported only by heuristics. The main goal of this paper is to provide an honest theorem establishing the convergence of the normalized CTE estimator under importance sampling to a normal distribution. In the process, we also provide a similar result for the VaR estimator under importance sampling, which improves upon an earlier result. Also, through examples we motivate the practical need for such theoretical results and include simulation studies to lend insight into the sample sizes at which these asymptotic results become meaningful.
http://www.soa.org/news-and-publications/publications/journals/naaj/naaj-detail.aspx

Minimizing the cost of risk with simulation optimization technique. Lei, Yu - 24 pages. [RKN: 74703]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (1)** : 121-144.

For risk managers, one overarching goal is to help their organizations maximize stakeholders' value, which can be achieved by minimizing the cost of risk. Oftentimes such optimization decisions have to be made under uncertainty. This article presents a teaching note that demonstrates how to use simulation-based software to run optimization involving uncertain factors. Specifically, a hypothetical example regarding workers' compensation claims cost was created to provide a step-by-step instruction for conducting simulation optimization.
http://www.openathens.net

Models for quantifying risk. Cunningham, Robin J; Herzog, Thomas N; London, Richard L (2011). - 4th ed. Actex, 2011. - 474 pages. [RKN: 74932]
Shelved at: 368.01

This textbook presents a variety of stochastic models for the actuary to use in undertaking the analysis of risk. It is designed to be appropriate for use in a two- or three-semester university course in basic actuarial science. It was also written with the SOA Exam MLC in mind. It covers all of the life contingencies 2012 exam topics in a single reference.

Models are evaluated in a generic form with life contingencies included as one of many applications of the science. Students will find this book to be a valuable reference due to its easy-to-understand explanations and the end-of-chapter exercises. It also introduces students to the practical use of the science via the Appendices.

The Fourth edition has been updated to support the new Learning Objectives for SOA Exam MLC beginning in 2012. Material has been added to address the notion of interest rate risk and new applications for the concept of reserves. Additional emphasis has been placed on representing various actuarial models as multi-state models, using the mathematics of discrete-time and/or continuous-time Markov Chains, as well as the use of simulation techniques.

Parallels with the past. Sagoo, Pretty; Mosher, Jessica Staple Inn Actuarial Society, [RKN: 45471]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **October** : 22-23.

Pretty Sagoo and Jessica Mosher look at ways of categorising and measuring basis risk _in longevity hedges.
http://www.theactuary.com/

Risk measures in ordered normed linear spaces with non-empty cone-interior. Konstantinides, Dimitrios G; Kountzakis, Christos E [RKN: 39934]
Shelved at: Per: IME (Oxf)
Insurance: Mathematics & Economics (2011) **48 (1)** : 111-122.

In this paper, we use tools from the theory of partially ordered normed linear spaces, especially the bases of cones. This work extends the well-known results for convex and coherent risk measures. Its linchpin consists in the replacement of the riskless bond by some interior point in the cone of the space of risks, which stands as the alternative numeraire.
http://www.openathens.net

Second-order expansions of the risk concentration based on CTE [Conditional Tail Expectation]. Mao, Tiantian; Lv, Wenhua; Hu, Taizhong [RKN: 44864]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **51(2)** : 449-456.

The quantification of diversification benefits due to risk aggregation has received more attention in the recent literature. In this paper, we establish second-order expansions of the risk concentration based on the risk measure of conditional tail expectation [CTE] for a portfolio of n independent and identically distributed loss random variables. The key tools are the theory of second-order regular variation and the theory of second-order subexponentiality. Some examples are given.
http://www.openathens.net/

Second-order properties of the Haezendonck-Goovaerts risk measure for extreme risks. Mao, Tiantian; Hu, Taizhong [RKN: 44792]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **51(2)** : 333-343.

The Haezendonck–Goovaerts risk measure is based on the premium calculation principle induced by an Orlicz norm, which is defined via an increasing and convex Young function and a parameter q[symbol](0,1) representing the confidence level. In this paper, we first reestablish the first-order expansions of the Haezendonck-Goovaerts risk measure for extreme risks with a power Young function in Q Tang and F Yang (2012) [On the Haezendonck-Goovaerts risk measure for extreme risks, Insurance: Mathematics and Economics, 50 (2012), pp. 217–227] in terms of the tail quantile function. Second, we are interested in the calculation of the second-order expansions of the Haezendonck-Goovaerts risk measure as q[symbol]1. We only consider the case in which the risk variable belongs to the max-domain of attraction of an extreme value distribution.
http://www.openathens.net/

The strictest common relaxation of a family of risk measures. Roorda, Berend; Schumacher, J M [RKN: 13027]
Shelved at: Per: IME (Oxf)
Insurance: Mathematics & Economics (2011) **48 (1)** : 29-34.

Operations which form new risk measures from a collection of given (often simpler) risk measures have been used extensively in the literature. Examples include convex combination, convolution, and the worst-case operator. Here we study the risk measure that is constructed from a family of given risk measures by the best-case operator; that is, the newly constructed risk measure is defined as the one that is as restrictive as possible under the condition that it accepts all positions that are accepted under any of the risk measures from the family. In fact we define this operation for conditional risk measures, to allow a multiperiod setting. We show that the well-known VaR risk measure can be constructed from a family of conditional expectations by a combination that involves both worst-case and best-case operations. We provide an explicit description of the acceptance set of the conditional risk measure that is obtained as the strictest common relaxation of two given conditional risk measures.
http://www.openathens.net

The value of enterprise risk management. Hoyt, Robert E; Liebenberg, Andre P - 28 pages. [RKN: 74873]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2011) **78 (4)** : 795–822.

Available online via Athens
Enterprise risk management (ERM) has been the topic of increased media attention in recent years. The objective of this study is to measure the extent to which specific firms have implemented ERM programs and, then, to assess the value implications of these programs. We focus our attention in this study on U.S. insurers in order to control for differences that might arise from regulatory and market differences across industries. We simultaneously model the determinants of ERM and the effect of ERM on firm value. We estimate the effect of ERM on Tobin's Q, a standard proxy for firm value. We find a positive relation between firm value and the use of ERM. The ERM premium of roughly 20 percent is statistically and economically significant.
http://www.openathens.net

Visualizing and optimizing risk contribution and performance within a loss portfolio. Kim, Joseph H T (2011). University of Waterloo, 2011. - 30 pages. [RKN: 73689]
Shelved at: Online only

For financial conglomerates allocating a given risk measure (capital) to each risk unit is a popular exercise in internal risk management. In this article we propose several graphs that can visualize the allocated capitals, line-wise performances, and diversification benefit within a multi-line insurer, focusing on the conditional tail expectation (CTE) as a preferred risk measure. Later we show how to construct the portfolio with an optimal RORAC performance, using the CTE optimization. An illustrative example will be presented based on the Panjer (2002)'s data of a multiline insurer.
http://www.watrisq.uwaterloo.ca/Research/WatRISQ-ReportsIndex.shtml

RISK PREFERENCE

Experts in experiments. von Gaudecker, Hans-Martin; van Soest, Arthur; Wengström, Erik Springer, - 32 pages. [RKN: 70249]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **45 (2)** : 159-190.

An ever increasing number of experiments attempts to elicit risk preferences of a population of interest with the aim of calibrating parameters used in economic models.We are concerned with two types of selection effects, which may affect the external validity of standard experiments: Sampling from a narrowly defined population of students (“experimenter-induced selection”) and self-selection due to non-response or incomplete response of participants in a random sample from a broad population. We find that both types of selection lead to a sample of experts: Participants perform significantly better than the general population, in the sense of fewer violations of revealed preference conditions. Self-selection within a broad population does not seem to matter for average preferences. In contrast, sampling from a student population leads to lower estimates of average risk aversion and loss aversion
http://www.openathens.net

RISK SHARING

Convex order and comonotonic conditional mean risk sharing. Denuit, Michel; Dhaene, Jan [RKN: 44785]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **51(2)** : 265-270.

Using a standard reduction argument based on conditional expectations, this paper argues that risk sharing is always beneficial (with respect to convex order or second degree stochastic dominance) provided the risk-averse agents share the total losses appropriately (whatever the distribution of the losses, their correlation structure and individual degrees of risk aversion).

Specifically, all agents hand their individual losses over to a pool and each of them is liable for the conditional expectation of his own loss given the total loss of the pool. We call this risk sharing mechanism the conditional mean risk sharing. If all the conditional expectations involved are non-decreasing functions of the total loss then the conditional mean risk sharing is shown to be Pareto-optimal. Explicit expressions for the individual contributions to the pool are derived in some special cases of interest: independent and identically distributed losses, comonotonic losses, and mutually exclusive losses. In particular, conditions under which this payment rule leads to a comonotonic risk sharing are examined.
http://www.openathens.net/

Risk-sharing contracts with asymmetric information. Bourles, Renaud; Henriet, Dominique - 30 pages. [RKN: 74941]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (1)** : 27-56.

We examine how risk-sharing is impacted by asymmetric information on the probability distribution of wealth. We define the optimal incentive compatible agreements in a two-agent model with two levels of wealth. When there is complete information on the probability of the different outcomes, the resulting allocation satisfies the mutuality principle (which states that everyone's final wealth depends only upon the aggregate wealth of the economy). This is no longer true when agents have private information regarding their probability distribution of wealth. Asymmetry of information (i) makes ex-post equal sharing unsustainable between two low-risk agents, and (ii) induces exchanges when agents have the same realization of wealth.

RISK THEORY

Comparing risk preferences over financial and environmental lotteries. Riddel, Mary Springer, - 23 pages. [RKN: 70238]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **45 (2)** : 135-157.

This paper investigates whether preferences over environmental risks are best modeled using probability-weighted utility functions or can be reasonably approximated by expected utility (EU) or subjective EU models as is typically assumed. I elicit risk attitudes in the financial and environmental domains using multiple-price list experiment. I examine how subjects' behavioral, attitudinal, and demographic characteristics affect their probability weighting functions first for financial risks, then for oil-spill risks. I find that most subjects tend to overweight extreme positive outcomes relative to expected utility in both the environmental and financial domains. Subjects are more likely to overemphasize low probability, extreme environmental outcomes than low probability, extreme financial outcomes, leading subjects to offer more support for mitigating environmental gambles than financial gambles with the same odds and equivalent outcomes. I conclude that EU models are likely to underestimate subjects' willingness to pay for environmental cleanup programs or policies with uncertain outcomes.
http://www.openathens.net

Decreasing absolute risk aversion, prudence and increased downside risk aversion. Meyer, Jack; Liu, Liqun Springer, - 18 pages. [RKN: 73973]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **44 (3)** : 243-260.

Downside risk increases have previously been characterized as changes preferred by all decision makers $u(x)$ with $u'''(x) > 0$. For risk averse decision makers, $u'''(x) > 0$ also defines prudence. This paper finds that downside risk increases can also be characterized as changes preferred by all decision makers displaying decreasing absolute risk aversion (DARA) since those changes involve random variables that have equal means. Building on these findings, the paper proposes using "more decreasingly absolute risk averse" or "more prudent" as alternative definitions of increased downside risk aversion. These alternative definitions generate a transitive ordering, while the existing definition based on a transformation function with a positive third derivative does not. Other properties of the new definitions of increased downside risk aversion are also presented.
http://www.openathens.net

Non-parametric estimation of the Gerber–Shiu function for the Wiener–Poisson risk model. Shimizu, Yasutaka [RKN: 44881]
Shelved at: Per: SAJ Shelved at: SCA/ACT
Scandinavian Actuarial Journal (2012) **1** : 56-69.

A non-parametric estimator of the Gerber–Shiu function is proposed for a risk process with a compound Poisson claim process plus a diffusion perturbation; the Wiener–Poisson risk model. The estimator is based on a regularized inversion of an empirical-type estimator of the Laplace transform of the Gerber–Shiu function. We show the weak consistency of the estimator in the sense of an integrated squared error with the rate of convergence.
http://www.openathens.net

Updating beliefs with imperfect signals: Experimental evidence. Poinas, François; Rosaz, Julie; Roussillon, Béatrice Springer, - 23 pages. [RKN: 73972]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **44 (3)** : 219-241.

We conduct an experiment on individual choice under risk in which we study belief updating when an agent receives a signal that restricts the number of possible states of the world. Subjects observe a sample drawn from an urn and form initial beliefs about the urn's composition. We then elicit how beliefs are modified after subjects receive a signal that restricts the set of the possible urns from which the observed sample could have been drawn. We find that this type of signal increases the frequency of correct assessments and that prediction accuracy is higher for lower levels of risk. We also show that prediction accuracy is higher after invalidating signals (i.e. signals that contradict the initial belief). This pattern is explained by the lower level of risk associated with invalidating signals. Finally, we find evidence for a lack of persistence of choices under high risk.
http://www.openathens.net

RUIN PROBABILITY

The optimal dividend barrier in the Gamma–Omega model. Albrecher, Hansjörg; Gerber, Hans U; Shiu, Elias S W [RKN: 44805]
Shelved at: online only
European Actuarial Journal (2011) **1(1) July** : 43-55.

Available online via Athens
In the traditional actuarial risk model, if the surplus is negative, the company is ruined and has to go out of business. In this paper we distinguish between ruin (negative surplus) and bankruptcy (going out of business), where the probability of bankruptcy is a function of the level of negative surplus. The idea for this notion of bankruptcy comes from the observation that in some industries, companies can continue doing business even though they are technically ruined. Assuming that dividends can only be paid with a certain probability at each point of time, we derive closed-form formulas for the expected discounted dividends until bankruptcy under a barrier strategy. Subsequently, the optimal barrier is determined, and several explicit identities for the optimal value are found. The surplus process of the company is modeled by a Wiener process (Brownian motion).
http://www.openathens.net

Properties of a risk measure derived from ruin theory. Truffin, Julien; Albrecher, Hansjoerg; Denuit, Michel M - 15 pages. [RKN: 74788]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (2)** : 174-188.

This paper studies a risk measure inherited from ruin theory and investigates some of its properties. Specifically, we consider a value-at-risk (VaR)-type risk measure defined as the smallest initial capital needed to ensure that the ultimate ruin probability is less than a given level. This VaR-type risk measure turns out to be equivalent to the VaR of the maximal deficit of the ruin process in infinite time. A related Tail-VaR-type risk measure is also discussed.

Revised version of: Solvency requirement for a long-term guarantee: risk measures versus probability of ruin. Devolder, Pierre [RKN: 44833]
Shelved at: online only
European Actuarial Journal (2011) **1(2) November** : 199-214.

Available online via Athens -- Published online, 22 December 2011
Solvency requirements are based on the idea that risk can be accepted if enough capital is present. The determination of this minimum level of capital depends on how we consider and measure the underlying risk. Apart from the kind of risk measure used, an important factor is how time is integrated in the process. This topic is particularly important for long-term liabilities such as life insurance or pension benefits. In this paper we study the market risk of a life insurer offering a fixed guaranteed rate on a certain time horizon and investing the premium in a risky fund. We develop and compare various risk measurements based either on a single point analysis or on a continuous-time test. Dynamic risk measures are also considered.
http://www.openathens.net

Risk processes with dependence and premium adjusted to solvency targets. Constantinescu, Corina; Maume-Deschamps, Véronique; Norberg, Ragnar [RKN: 44838]
Shelved at: online only
European Actuarial Journal (2012) **2(1) July** : 1-20.

Available online via Athens -- Published online, July 2012
This paper considers risk processes with various forms of dependence between waiting times and claim amounts. The standing assumption is that the increments of the claims process possess exponential moments so that variations of the Lundberg upper bound for the probability of ruin are in reach. The traditional point of view in ruin theory is reversed: rather than studying the probability of ruin as a function of the initial reserve under fixed premium, the problem is to adjust the premium dynamically so as to obtain a given ruin probability (solvency requirement) for a fixed initial reserve (the financial capacity of the insurer). This programme is carried through in various models for the claims process, ranging from Cox processes with i.i.d. claim amounts, to conditional renewal (Sparre Andersen) processes.
http://www.openathens.net

Second order asymptotics for ruin probabilities in a renewal risk model with heavy-tailed claims. Lin, Jianxi [RKN: 44861]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **51(2)** : 422-429.

In this paper, we establish the second order asymptotics of ruin probabilities of a renewal risk model under the condition that the equilibrium distribution of claim sizes belongs to a rather general heavy-tailed distribution subclass—the class of second order subexponential distributions with finite mean. What is more, this requirement is proved to be necessary. Furthermore, a rather general sufficient condition on the claim size distribution itself is presented. Moreover, an extension to the case of random walk is also included.
http://www.openathens.net/

RUIN THEORY

Erlang risk models and finite time ruin problems. Dickson, David C M; Li, Shuanming [RKN: 44884]
Shelved at: Per: SAJ Shelved at: SCA/ACT
Scandinavian Actuarial Journal (2012) **3** : 183-202.

Available via Athens access
We consider the joint density of the time of ruin and deficit at ruin in the Erlang(n) risk model. We give a general formula for this joint density and illustrate how the components of this formula can be found in the special case when n=2. We then show how the formula can be implemented numerically for a general value of n. We also discuss how the ideas extend to the generalised Erlang(n) risk model.
http://www.openathens.net/

Modeling credit value adjustment with downgrade-triggered termination clause using a ruin theoretic approach. Feng, Runhuan; Volkmer, Hans W [RKN: 44800]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **51(2)** : 409-421.

Downgrade-triggered termination clause is a recent innovation in credit risk management to control counterparty credit risk. It allows one party of an over-the-counter derivative to close off its position at marked-to-market price when the other party's credit rating downgrades to an agreed alarming level. Although the default risk is significantly reduced, the non-defaulting party may still suffer losses in case that the other party defaults without triggering the termination clause prior to default. At the heart of the valuation of credit risk adjustment (CVA) is the computation of the probability of default. We employ techniques from ruin theory and complex analysis to provide solutions for probabilities of default, which in turn lead to very efficient and accurate algorithms for computing CVA. The underlying risk model in question is an extension of the commercially available KMV–Merton model and hence can be easily implemented. We provide a hypothetical example of CVA computation for an interest-rate swap with downgrade-triggered termination clause. The paper also contributes to ruin theory by presenting some new results on finite-time ruin probabilities in a jump-diffusion risk model.
http://www.openathens.net/

SALARIES

Salary linked home finance: reducing interest rate, inflation and idiosyncratic salary risks. Asher, Anthony [RKN: 43244]
Australian Actuarial Journal (2011) **17(1)** : 117-148.

This paper provides some results of a recently completed PhD thesis undertaken by the author. Initial results were presented at the Institute of Actuaries [of Australia] Biennial Convention.
It is possible to develop an alternative housing finance instrument that matches the cash flow, and reduces the risks faced, by homeowners and pension funds. The instrument would also reduce the liquidity constraints faced by new and existing homeowners, and eliminate the cash flow tilt imposed by high inflation. Moral hazard and anti-selection risks are likely to restrict the market to employees of large institutions, but such an instrument would encourage greater flows of funds from superannuation into housing. Other obstacles to its introduction can be overcome.
http://www.actuaries.asn.au/TechnicalResources/ActuaryJournals.aspx

SECURITIES

Canonical valuation of mortality-linked securities. Li, Johnny Siu-Hang; Ng, Andrew Cheuk-Yin - 32 pages. [RKN: 74875]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2011) **78 (4)** : 853–884.

Available online via Athens
A fundamental question in the study of mortality-linked securities is how to place a value on them. This is still an open question, partly because there is a lack of liquidly traded longevity indexes or securities from which we can infer the market price of risk. This article develops a framework for pricing mortality-linked securities on the basis of canonical valuation. This framework is largely nonparametric, helping us avoid parameter and model risk, which may be significant in other pricing methods. The framework is then applied to a mortality-linked security, and the results are compared against those derived from other methods.
http://www.openathens.net

Securitization of longevity risk using percentile tranching (pages). Changki Kim and; Yangho Choi - 22 pages. [RKN: 74876]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2011) **78 (4)** : 885–906.

Available online via Athens
Securitizations that transfer risk to the financial markets are a potential solution to longevity risk in the annuity business. The classical Lee–Carter model is applied to generate the future stochastic survival distribution. A method to design inverse survivor bonds using percentile tranches and to calculate the security prices is presented. The percentile tranche method is a simple and practical way for the issuer to design and price the security. This method can serve to identify the risk–yield relationship, which can provide investors with clear insight regarding the appropriate choice of tranches.
http://www.openathens.net

SHAREHOLDERS

Risk and the shareholder. Monks, Robert A G [RKN: 45689]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 112-114.

The modern meaning of shareholder has morphed from an engaged owner to a passive provider of capital. Should rights afforded to such passive capitalists be equal to those whose ownership engagement with a corporation is personal and direct? Without the involvement of active and engaged shareholders, the entire corporate system lacks its energising foundation and a very significant risk arises from the relative absence of the effective monitoring and supervising energy that those with 'ownership' interests are more likely to provide.

SIMULATION

Fast remote but not extreme quantiles with multiple factors: applications to Solvency II and Enterprise Risk Management.
Chauvigny, Matthieu; Devineau, Laurent; Loisel, Stéphane; Maume-Deschamps, Véronique [RKN: 44809]
Shelved at: online only
European Actuarial Journal (2011) **1(1) July** : 131-157.
Available online via Athens
For operational purposes, in Enterprise Risk Management or in insurance for example, it may be important to estimate remote (but not extreme) quantiles of some function f of some random vector. The call to f may be time- and resource-consuming so that one aims at reducing as much as possible the number of calls to f. In this paper, we propose some ways to address this problem of general interest. We then numerically analyze the performance of the method on insurance and Enterprise Risk Management real-world case studies.
http://www.openathens.net

SINGAPORE

Longevity risk management in Singapore's national pension system. Fong, Joelle H Y; Mitchell, Olivia S; Koh, Benedict S K - 22 pages. [RKN: 74879]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2011) **78 (4)** : 961–982.
Available online via Athens
Although annuities are a theoretically appealing way to manage longevity risk, in the real world relatively few consumers purchase them at retirement. To counteract the possibility of retirees outliving their assets, Singapore's Central Provident Fund, a national defined contribution pension scheme, has recently mandated annuitization of workers' retirement assets. More significantly, the government has entered the insurance market as a public-sector provider for such annuities. This article evaluates the money's worth of life annuities and discusses the impact of the government mandate and its role as an annuity provider on the insurance market.
http://www.openathens.net

SOCIAL STRATIFICATION

Social comparison and risky choices. Linde, Jona; Sonnemans, Joep Springer, [RKN: 45593]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **44 (1)** : 45-72.
Theories (and experiments) on decision making under risk typically ignore (and exclude) a social context. We explore whether this omission is detrimental. To do so we experimentally investigate the simplest possible situation with both social comparison and risk: participants choose between two lotteries while a referent faces a fixed payoff. Participants are more risk averse when they can earn at most as much as their referent (loss situation) than when they are ensured they will earn at least as much as their referent (gain situation). Prospect theory with a social reference point would predict the exact opposite behavior. These results show that straightforward extensions of existing theories to allow for social comparison do not provide accurate predictions.

SOLVENCY

Insurance protection funds in the European Union—Quo Vadis?. Monkiewicz, Marek - 18 pages. [RKN: 73822]
Shelved at: JOU
Risk Management and Insurance Review (2012) **15 (1)** : 89-106.
Contrary to the development in other major insurance markets in the world only 13 out of 27 EU member states have introduced until now some type of insurance protection funds (IPF). As a result around a third of the market is without any collective protection. There is also a continuous debate since 2001 among the member states on the need for such a system at the community level. The experiences of the latest financial crisis have raised new arguments for reorganizing the existing system to avoid regulatory arbitrage and to strengthen consumer security. Even the prospective implementation of provisions strengthening supervisory bodies, and the new solvency directive (so-called Solvency II) are not fail-safe solutions. This article is an attempt to review the current situation as regards IPF in the EU and to discuss possible development scenarios.
http://www.openathens.net

Preparing for Basel III. Gunnee, Ben Staple Inn Actuarial Society, - 1 pages. [RKN: 70725]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **August** : 8.
Ben Gunnee says the new rules could push up costs and hit the operations of European pension funds using over-the-counter derivatives
http://www.theactuary.com/

Revised version of: Solvency requirement for a long-term guarantee: risk measures versus probability of ruin. Devolder, Pierre [RKN: 44833]
Shelved at: online only
European Actuarial Journal (2011) **1(2) November** : 199-214.
Available online via Athens -- Published online, 22 December 2011

Solvency requirements are based on the idea that risk can be accepted if enough capital is present. The determination of this minimum level of capital depends on how we consider and measure the underlying risk. Apart from the kind of risk measure used, an important factor is how time is integrated in the process. This topic is particularly important for long-term liabilities such as life insurance or pension benefits. In this paper we study the market risk of a life insurer offering a fixed guaranteed rate on a certain time horizon and investing the premium in a risky fund. We develop and compare various risk measurements based either on a single point analysis or on a continuous-time test. Dynamic risk measures are also considered.
http://www.openathens.net

Risk processes with dependence and premium adjusted to solvency targets. Constantinescu, Corina; Maume-Deschamps, Véronique; Norberg, Ragnar [RKN: 44838]
Shelved at: online only
European Actuarial Journal (2012) **2(1) July** : 1-20.
Available online via Athens -- Published online, July 2012
This paper considers risk processes with various forms of dependence between waiting times and claim amounts. The standing assumption is that the increments of the claims process possess exponential moments so that variations of the Lundberg upper bound for the probability of ruin are in reach. The traditional point of view in ruin theory is reversed: rather than studying the probability of ruin as a function of the initial reserve under fixed premium, the problem is to adjust the premium dynamically so as to obtain a given ruin probability (solvency requirement) for a fixed initial reserve (the financial capacity of the insurer). This programme is carried through in various models for the claims process, ranging from Cox processes with i.i.d. claim amounts, to conditional renewal (Sparre Andersen) processes.
http://www.openathens.net

The role of RBC, hurricane exposure, bond portfolio duration, and macroeconomic and industry-wide factors in property–liability insolvency prediction. Cheng, Jiang; Weiss, Mary A - 28 pages. [RKN: 70414]
Shelved at: Per: J.Risk Ins (Oxf) Shelved at: JOU
Journal of Risk and Insurance (2012) **79 (3)** : 723-750.
Available online via Athens
This research analyzes the performance of the risk-based capital (RBC) ratio and other variables in predicting insolvencies in the property–liability insurance industry during the period 1994–2008. The results indicate that the accuracy of the RBC ratio in predicting insolvencies is inconsistent over time and that some previously tested financial ratios that are part of the FAST system do not always reliably predict insurer insolvency. In addition, the insolvency propensity is found to be significantly related to an insurer's hurricane prone area exposure, changes in interest rates, the industry-wide combined ratio, and the industry-wide Herfindahl index of premiums written.
http://www.openathens.net

Solvency capital requirement for hybrid products. Kochanski, Michael; Karnaski, Bertel [RKN: 44832]
Shelved at: online only
European Actuarial Journal (2011) **1(2) November** : 173-198.
Available online via Athens -- Published online, 22 December 2011
In this paper, we propose a partial internal model to determine the solvency capital requirement (SCR) for static and dynamic hybrid products. We present qualitative and quantitative results from several simulation studies for new business portfolios as well as for existing portfolios based on actual and fictitious historical financial market data. Our findings show that hybrid products are mainly exposed to interest rate, equity and lapse risks. Furthermore, we show that the SCR for dynamic hybrid products strongly depends on past financial market fluctuations.
http://www.openathens.net

SOLVENCY II

The Basel III and beyond. Cannata, Francesco; Quagliariello, Mario (2011). Risk Books, 2011. - 510 pages. [RKN: 74705]
Shelved at: 519.287
Around the world, central bankers, regulators and governments have responded to the financial crisis with new regulation and legislation. The cornerstone of this global initiative to contain risk is Basel III – sweeping new regulatory standards for banks on capital adequacy and liquidity.

These new standards will define markets and their practices for decades to come. Already, they are reshaping institutions, business models and balance sheets.

Understanding Basel III and the thinking behind it is essential for market participants and for those charged with implementing the standards. In Basel III and Beyond, the first book-length treatment of Basel III, editors Mario Quagliariello of the European Banking Authority and Francesco Cannata of the Bank of Italy have assembled contributors from regulators and central banks involved in preparing the standards including a foreword from Mario Draghi, President of the European Central Bank.

Key chapters describe and analyse the new elements of Basel III, as well as detailing important revisions to the 2004 accord. Written by the regulators themselves, Basel III and Beyond is the essential guide to the new global banking standards.

Comparison of stakeholder perspectives on current regulatory and reporting reforms. Wagner, Joël; Zemp, Alexandra - 30 pages. [RKN: 70640]
Shelved at: JOU
Risk Management and Insurance Review (2012) **15 (2)** : 225-254.
Available online via Athens: Wiley Online Library
In the European insurance industry, regulatory and reporting frameworks are currently subject to far-reaching reforms. We focus on four of these frameworks, namely the Solvency II framework, insurance guaranty systems, the proposed IFRS 4 Phase II international accounting standards, and Market Consistent Embedded Value reporting. We present these frameworks, analyze

them from the insurance company's management, investors, and policyholder perspectives, and compare them. Our analysis implies that the four frameworks need to be considered jointly, due to various interrelations and interactions. We argue that a coordinated introduction will be necessary to ensure that the regulatory burden is reduced and synergies can be utilized in the event of all four frameworks being implemented as planned. Furthermore, we analyze the challenges of a holistic, comprehensive approach to insurance reporting and regulation and its implementation in order to achieve the goals set by the frameworks.
http://www.openathens.net

Developments in the management of annuity business. Telford, P G; Browne, B A; Collinge, E J; Fulcher, P; Johnson, B E; Little, W; Lu, J L C; Nurse, J M; Smith, D W; Zhang, F (2011). 2011. [RKN: 72306]
Shelved at: Online only Shelved at: JOU/INS
BAJ (2011) **16(3)** : 471-551.

The focus of the paper is non-profit lifetime annuities in the UK. Annuity insurers have been faced with, or have initiated, an unprecedented amount of change during the last decade, and rapid change is still continuing. We draw out implications for the actuarial management of the business, arising from the evolution of: longevity risk assessment and management, investment strategy and operations, financial reporting, and enterprise risk management. We discuss Solvency II in some technical depth, analysing the proposed rules for technical provisions and solvency capital requirement.
Keywords: Annuities; Retirement Income; Longevity; Mortality Improvement; Reinsurance; Underwriting; Collateral; Investment; Asset-Liability Management; Financial Reporting; IFRS; Pillar I; Individual Capital Assessment; Enterprise Risk Management; Solvency II; Illiquidity Premium; Economic Capital
http://www.actuaries.org.uk/research-and-resources/documents/developments-management-annuity-business

Developments in the management of annuity business. Telford, P G; Browne, B A; Collinge, E J; Fulcher, P; Johnson, B E; Little, W; Lu, J L C; Nurse, J M; Smith, D W; Zhang, F - 81 pages. [RKN: 73860]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (3)** : 471-551.

The focus of the paper is non-profit lifetime annuities in the UK. Annuity insurers have been faced with, or have initiated, an unprecedented amount of change during the last decade, and rapid change is still continuing. We draw out implications for the actuarial management of the business, arising from the evolution of: longevity risk assessment and management, investment strategy and operations, financial reporting, and enterprise risk management. We discuss Solvency II in some technical depth, analysing the proposed rules for technical provisions and solvency capital requirement.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Developments in the management of annuity business : Abstract of the Edinburgh discussion. Telford, Peter - 24 pages. [RKN: 73861]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (3)** : 553-576.

This abstract relates to the following paper:

P.G. Telford, B.A. Browne, E.J. Collinge, P. Fulcher, B.E. Johnson, W. Little, J.L.C. Lu, J.M. Nurse, D.W. Smith & F. Zhang Developments in the Management of Annuity Business. British Actuarial Journal, 16 (3).
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Developments in the management of annuity business : Abstract of the London discussion. Telford, Peter - 23 pages. [RKN: 73862]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (3)** : 577-599.

This abstract relates to the following paper:

P.G. Telford, B.A. Browne, E.J. Collinge, P. Fulcher, B.E. Johnson, W. Little, J.L.C. Lu, J.M. Nurse, D.W. Smith & F. Zhang Developments in the Management of Annuity Business. British Actuarial Journal, 16 (3).
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Developments in the management of annuity business : Abstract of the London discussion-ADDENDUM. Telford, Peter - 2 pages. [RKN: 73960]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (1)** : 256-257.

Institute of Actuaries, 22 March 2010.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Dynamic management actions. Clark, Dominic; Kent, Jeremy; Morgan, Ed (2012). - London: Staple Inn Actuarial Society, 2012. - 31 pages. [RKN: 43537]
Shelved at: Online only Shelved at: Online only

Slide presentation to Staple Inn Actuarial Society, 6 March 2012
Realistic modelling of dynamic management actions is critical to many areas of the financial management of a life insurance company today. In our overview of this topic we will:
- explain what is meant by dynamic management actions (“DMA”) and what the main types of DMA are;
- introduce the areas in which DMA is important (e.g. Solvency II, MCEV, ALM etc);
- describe how DMA can be linked to real expected management behaviour (including considerations around concepts such as the Use Test);
- illustrate how improved modelling of DMA can, under some circumstances, materially influence calculated results;
- show how understanding DMA and its interactions with dynamic policyholder behaviour can improve a company’s Enterprise Risk Management;
http://www.sias.org.uk/siaspapers/search/view paper?id=SIASPaperMar2012

Entity-wide risk management for pension funds
. Kemp, M H D; Patel, C C - 64 pages. [RKN: 70185]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (2)** : 331-394.

This paper explores the application of ERM-style techniques to pension funds. It uses the term 'entity-wide risk management' rather than 'enterprise risk management', even though both have the same acronym ('ERM'), because many pension funds do not view themselves as business 'enterprises' as such. Some of the techniques that business enterprises have for managing risk (e.g. raising new capital from shareholders or branching into new business areas if existing ones have unattractive risk-reward characteristics) may not be open to many pension funds. The paper argues that the holistic approach to risk management (and governance) that is a hallmark of ERM is as appropriate to pension funds as it is to any other type of entity. This is the case whether the fund is defined benefit or defined contribution in nature, or a hybrid. It is also the case whether the 'entity' is deemed to be the fund itself, the sponsor or the two combined. Indeed, there are aspects of pension arrangements, such as the relationship between the fund and its sponsor, that lend added impetus to the use of ERM-style techniques in practical pension fund management.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Entity-wide risk management for pension funds : Abstract of the Edinburgh discussion. Kemp, M H D - 18 pages. [RKN: 70186]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (2)** : 395-412.

Edinburgh discussion, 21 February 2011
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Entity-wide risk management for pension funds : Abstract of the London discussion. Kemp, M H D - 22 pages. [RKN: 70195]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (2)** : 413-434.

London discussion, 28 February 2011
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Fast remote but not extreme quantiles with multiple factors: applications to Solvency II and Enterprise Risk Management.
Chauvigny, Matthieu; Devineau, Laurent; Loisel, Stéphane; Maume-Deschamps, Véronique [RKN: 44809]
Shelved at: online only
European Actuarial Journal (2011) **1(1) July** : 131-157.

Available online via Athens
For operational purposes, in Enterprise Risk Management or in insurance for example, it may be important to estimate remote (but not extreme) quantiles of some function f of some random vector. The call to f may be time- and resource-consuming so that one aims at reducing as much as possible the number of calls to f. In this paper, we propose some ways to address this problem of general interest. We then numerically analyze the performance of the method on insurance and Enterprise Risk Management real-world case studies.
http://www.openathens.net

A free lunch...from the EU?. Cook, Paul; Rajoo, Meera Staple Inn Actuarial Society, - 2 pages. [RKN: 74929]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **January/February** : 30-31.

Solvency II offers a real incentive for diversifying risk, but is it quite the bonus it appears to be? Paul Cook and Meera Rajoo investigate
http://www.theactuary.com/

Insurance risk capital for the Sparre Andersen model with geometric Lévy stochastic returns. Hürlimann, Werner [RKN: 44834]
Shelved at: online only
European Actuarial Journal (2011) **1(2) November** : 215-235.

Available online via Athens -- Published online, 22 December 2011
Some multi-period insurance risk economic capital models that include the effects of heavy-tail claims and random returns are considered. They are based on the Sparre Andersen risk model with geometric Lévy stochastic returns. The random accumulated surplus over an arbitrary finite time horizon is decomposed into insurance risk, market risk and future profit components. A protection against the solvency risk of the policyholders is obtained by applying the VaR (CVaR) measure to the insurance risk component and defines a multi-period insurance risk VaR (CVaR) economic capital. A classical asymptotic result by Resnick and Willekens [Ref. 28: Resnick SI, Willekens E (1991) Moving averages with random coefficients and random coefficient autoregressive models. Comm. Statist. Stochastic Models 7(4):511–525] on the tail probability of moving averages with random coefficients is applied to the accumulated aggregate claims random variable for claim size distributions with regularly varying tail to derive asymptotic formulas for these multi-period insurance risk economic capitals. Numerical examples with a Pareto claim size distribution reveal interesting features and differences between these two solvency rules. Since the preceding results exclude the log-normal and the heavy-tailed Weibull claim size distributions, we consider also an extension to sub-exponential claim sizes for the compound Poisson model with constant force of interest, which is based on Hao and Tang [Ref. 12: Hao X, Tang Q (2008) A uniform asymptotic estimate for discounted aggregate claims with subexponential tails. Insurance Math. Econom. 43(1):116–120]. The obtained results are compared with the standard Solvency II specification of the non-life insurance risk.
http://www.openathens.net

Investigating risk disclosure practices in the European insurance industry. Höring, Dirk; Gründl, Helmut Palgrave Macmillan, [RKN: 44915]
Shelved at: Per: Geneva (Oxf)
Geneva Papers on Risk and Insurance (2011) **36(3)** : 380-413.

Available online via Athens
In light of the upcoming Solvency II Pillar 3 disclosure regulation for the insurance industry, this paper explores the risk disclosure practices in annual reports of European primary insurers in the Dow Jones Stoxx 600 Insurance Index between 2005 and 2009. On the basis of a self-constructed risk disclosure index, the study examines the relation between the extent of risk disclosure and insurance companies' characteristics such as size, risk, profitability, ownership dispersion, cross-listing, home country and type of

insurance sold, to draw inferences regarding motives for enhanced risk disclosure based on positive accounting theory.
http://www.openathens.net

Is there market discipline in the European insurance industry? : An analysis of the German insurance market. Eling, Martin; Schmit, Joan T - 28 pages. [RKN: 70262]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (2)** : 180-207.

Economists often argue in favour of market discipline as a means to distribute resources effectively and efficiently. These same arguments likely influence decision-makers as they incorporate market discipline as the third pillar of Solvency II, the European insurance regulatory scheme currently being implemented. Success for Solvency II, then, is dependent in part on the strength of influence found in market discipline. Our research indicates that the German insurance market demonstrates the existence of such discipline, although the actual effect appears smaller than previously found in the U.S. insurance market. Solvency II, therefore, seems to be following an appropriate path, although further research is needed to evaluate whether or not enhancements to market discipline within the European market are warranted.

Market-consistent valuation of insurance liabilities by cost of capital. Mohr, Christoph - 27 pages. [RKN: 74738]
Shelved at: Per: Astin Bull (Oxf) Shelved at: JOU
ASTIN Bulletin (2011) **41 (2)** : 315-341.

online access via International Actuarial Association:
http://www.actuaries.org/index.cfm?lang=EN&DSP=PUBLICATIONS&ACT=ASTIN BULLETIN
This paper investigates market-consistent valuation of insurance liabilities in the context of Solvency II among others and to some extent IFRS 4. We propose an explicit and consistent framework for the valuation of insurance liabilities which incorporates the Solvency II approach as a special case. The proposed framework is based on replication over multiple (one-year) time periods by a periodically updated portfolio of assets with reliable market prices, allowing for 'limited liability' in the sense that the replication can in general not always be continued. The asset portfolio consists of two parts: (1) assets whose market price defines the value of the insurance liabilities, and (2) capital funds used to cover risk which cannot be replicated. The capital funds give rise to capital costs; the main exogenous input in the framework is the condition on when the investment of the capital funds is acceptable. We investigate existence of the value and show that the exact calculation of the value has to be done recursively backwards in time, starting at the end of the lifetime of the insurance liabilities. We derive upper bounds on the value and, for the special case of replication by risk-free one-year zero-coupon bonds, explicit recursive formulas for calculating the value. In the paper, we only partially consider the question of the uniqueness of the value. Valuation in Solvency II and IFRS 4 is based on representing the value as a sum of a 'best estimate' and a 'risk margin'. In our framework, it turns out that this split is not natural. Nonetheless, we show that a split can be constructed as a simplification, and that it provides an upper bound on the value under suitable conditions. We illustrate the general results by explicitly calculating the value for a simple example.
http://www.actuaries.org/index.cfm?lang=EN&DSP=PUBLICATIONS&ACT=ASTIN BULLETIN

Optimisation of limit systems for investment risks in accordance with Solvency II. Dotterweich, Alexander; Köstner, Stefan [RKN: 44822]
Shelved at: online only
European Actuarial Journal (2011) **1(1) Supplement 2** : 283-302.

Available online via Athens -- Selected paper presented during the 19th International Actuarial Association AFIR Colloquium in Munich, Germany, 2009
In order to satisfy the requirements of Solvency II (e.g. Framework directive on the EU Solvency II Project on Safety Measures and its implementation according to § 64a German Insurance Law)—insurance companies should implement an overall risk limit system. The starting point for developing this system is the entity's risk strategy and risk bearing capital approach based on economic principles. For life insurance companies, the dominant risk category is investment risk. Therefore, the limit system should focus on such risks. In practice there are multiple interactions between the core life insurance business and the asset side. Because of these interactions, a limit system for investment risks cannot be separated from life business risks. There is a particular need to integrate the entity's asset liability management approach into the risk limit system. The regulatory requirements call for consistent integration of a top-down view with a bottom-up risk management perspective in the investment department. In creating an adequate system, the first step is to categorise the individual types of risk and the corresponding risk management approaches. It is most important to get clear definitions of the bottom-up and the top-down views in the context of life insurance investment risks, and to integrate these into the entity's overall solvency control regime. The current financial crisis has revealed problems of valuation and an enormous and unprecedented increase in volatility in the capital markets. It is clear that an ongoing and effective analysis of these market developments and their impact on asset allocation and portfolio optimisation is necessary. The crisis also implies the need to think in detail about how to manage model risk implications. In this paper we propose an integrated view of these issues as the basis for optimal design of the company's risk limit system.
http://www.openathens.net

Risk management for insurers : Risk control, economic capital and Solvency II. Doff, René (2011). - 2nd ed. - London: Risk Books, 2011. - xi, 322 pages. [RKN: 45485]
Shelved at: BX/BXP/BUG (Lon) Shelved at: 519.287

All over the globe insurers are facing the impact of the turmoil on the financial markets, making it more crucial than ever to fully understand how to implement risk management best practice. In this timely second edition, industry expert René Doff argues that Solvency II, which aims to improve standards of risk assessment, should be regarded as an opportunity. Solvency II will provide incentives for insurance companies to improve their risk management systems and will allow you to benefit from the risk management efforts in the context of supervision.

Solvency capital requirement for hybrid products. Kochanski, Michael; Karnaski, Bertel [RKN: 44832]
Shelved at: online only
European Actuarial Journal (2011) **1(2) November** : 173-198.

Available online via Athens -- Published online, 22 December 2011
In this paper, we propose a partial internal model to determine the solvency capital requirement (SCR) for static and dynamic hybrid products. We present qualitative and quantitative results from several simulation studies for new business portfolios as well as for existing portfolios based on actual and fictitious historical financial market data. Our findings show that hybrid products are mainly exposed to interest rate, equity and lapse risks. Furthermore, we show that the SCR for dynamic hybrid products strongly

depends on past financial market fluctuations.
http://www.openathens.net

Solvency II: A change of view. Saini, Harjit; Haslip, Gareth Staple Inn Actuarial Society, [RKN: 73707]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **November** : 33-35.
Harjit Saini and Gareth Haslip describe how capital management at Lloyd's is changing in response to the requirements of Solvency II
http://www.theactuary.com/

Solvency II: Boxing clever. Cox, Andrew Staple Inn Actuarial Society, [RKN: 73705]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **November** : 30-31.
Andrew Cox models an implementation of the one-year test using two approaches
http://www.theactuary.com/

Solvency II risk margin: To hedge or not to hedge. Purcell, Richard; Mee, Gareth Staple Inn Actuarial Society, - 2 pages. [RKN: 73979]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **June** : 22-23.
Richard Purcell and Gareth Mee consider how an insurer's Solvency II internal model definition could affect its decision to hedge the risk margin.
http://www.theactuary.com/

Solvency II simulators: Back to the future?. Reynolds, Neil Staple Inn Actuarial Society, - 1 pages. [RKN: 73978]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **June** : 19.
Can the use of simulators help us to explore and develop a level of understanding of the complexities of Solvency II, asks Neil Reynolds
http://www.theactuary.com/

The Solvency II square-root formula for systematic biometric risk. Christiansen, Marcus C; Denuit, Michel M; Lazar, Dorina [RKN: 45599]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **50 (2)** : 257-265.
In this paper, we develop a model supporting the so-called square-root formula used in Solvency II to aggregate the modular life SCR. Describing the insurance policy by a Markov jump process, we can obtain expressions similar to the square-root formula in Solvency II by means of limited expansions around the best estimate. Numerical illustrations are given, based on German population data. Even if the square-root formula can be supported by theoretical considerations, it is shown that the QIS correlation matrix is highly questionable.
http://www.openathens.net/

SOLVENCY TESTS

Interest rate risk: dimension reduction in the Swiss Solvency Test. Ambrus, Marcel; Crugnola-Humbert, Jérôme; Schmid, Martin [RKN: 44831]
Shelved at: online only
European Actuarial Journal (2011) **1(2) November** : 159-172.
Available online via Athens -- Published online, 22 December 2011
Many risk models suffer from the incorporation of too many risk dimensions, which at best only increase computational costs. However, in many cases such models suffer in addition from a poor predictive power, as either the numerous underlying parameters are not understood fully and in order to remain computable the models may be over-simplistic and therefore neglect the more subtle interactions between the main risk drivers. In this paper, we analyze the interest rate risk module of the Swiss Solvency Test Standard Model, where interest rate risk is modeled with 13 risk-factors per currency. We apply the principal component analysis to reduce the dimension of this module. The economic interpretation of the remaining risk-factors becomes obvious, improving the understanding of the model. Further, we suggest to calculate the risk-factor sensitivities at the quantile corresponding to the expected shortfall of the corresponding normally distributed risk-factor. This way the inherent non-linearities are sufficiently allowed for and a complex second order Delta–Gamma approximation could be omitted. A sample calculation based on the SST 2011 for Basler Leben AG is provided to illustrate the validity of our approach with a real world case study.
http://www.openathens.net

SPARRE ANDERSEN MODEL

Insurance risk capital for the Sparre Andersen model with geometric Lévy stochastic returns. Hürlimann, Werner [RKN: 44834]
Shelved at: online only
European Actuarial Journal (2011) **1(2) November** : 215-235.
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Some multi-period insurance risk economic capital models that include the effects of heavy-tail claims and random returns are considered. They are based on the Sparre Andersen risk model with geometric Lévy stochastic returns. The random accumulated surplus over an arbitrary finite time horizon is decomposed into insurance risk, market risk and future profit components. A

protection against the solvency risk of the policyholders is obtained by applying the VaR (CVaR) measure to the insurance risk component and defines a multi-period insurance risk VaR (CVaR) economic capital. A classical asymptotic result by Resnick and Willekens [Ref. 28: Resnick SI, Willekens E (1991) Moving averages with random coefficients and random coefficient autoregressive models. Comm. Statist. Stochastic Models 7(4):511–525] on the tail probability of moving averages with random coefficients is applied to the accumulated aggregate claims random variable for claim size distributions with regularly varying tail to derive asymptotic formulas for these multi-period insurance risk economic capitals. Numerical examples with a Pareto claim size distribution reveal interesting features and differences between these two solvency rules. Since the preceding results exclude the log-normal and the heavy-tailed Weibull claim size distributions, we consider also an extension to sub-exponential claim sizes for the compound Poisson model with constant force of interest, which is based on Hao and Tang [Ref. 12: Hao X, Tang Q (2008) A uniform asymptotic estimate for discounted aggregate claims with subexponential tails. Insurance Math. Econom. 43(1):116–120]. The obtained results are compared with the standard Solvency II specification of the non-life insurance risk.
http://www.openathens.net

STANDARDS AND SPECIFICATIONS

Legal and regulatory update : Global identification standards for counterparties and other financial market participants. Grody, Allan D; Hughes, Peter J; Reininger, Daniel [RKN: 45711]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 288-304.
Financial regulators are focused on observing systemic risk across enormously complex interconnected global financial institutions. It is understood that without an ability to view the underlying positions and cash flows, valued in standard ways and aggregated by counterparty through common identifiers, neither risk triggers nor risk exposures can be observed nor can systemic threats be detected. It has been accepted by regulators that the very first pillar of global financial reform is a standard for identifying the same financial market participant to each regulator in the same way. Getting agreement on a globally unique and standardised legal entity identifier (the LEI) is the first step. This paper reports on past and current efforts to develop a global identification system for such a purpose. The authors argue for a government/industry partnership in which governance is shared and operating elements of the global identification system are compartmentalised for control, security and confidentiality purposes. The paper demonstrates a proposed global identification system that satisfies all known elements of regulators' requirements for the LEI and also lays the foundation for accommodating other attributes, such as business ownership hierarchical structures and contract and instrument identification.

STATISTICS

Statistical tools for finance and insurance. Cizek, Pavel; Hardle, Wolfgang Karl; Weron, Rafal (2011). - 2nd ed. - London: Springer, 2011. - 420 pages. [RKN: 73685]
Shelved at: 519.5
Statistical Tools for Finance and Insurance presents ready-to-use solutions, theoretical developments and method construction for many practical problems in quantitative finance and insurance. Written by practitioners and leading academics in the field, this book offers a unique combination of topics from which every market analyst and risk manager will benefit. Features of the significantly enlarged and revised second edition: Offers insight into new methods and the applicability of the stochastic technologyProvides the tools, instruments and (online) algorithms for recent techniques in quantitative finance and modern treatments in insurance calculations. Covers topics such as - expected shortfall for heavy tailed and mixture distributions* - pricing of variance swaps* - volatility smile calibration in FX markets - pricing of catastrophe bonds and temperature derivatives* - building loss models and ruin probability approximation - insurance pricing with GLM* - equity linked retirement plans* (new topics in the second edition marked with*) Presents extensive examples

To boldly and safely go : Biostatistics in space. Ploutz-Snyder, Robert [RKN: 45584]
Shelved at: Per
Significance (2012) **9(1)** : 4-7.
How can humans live and work in space? Ask one of NASA's biostatisticians. With the International Space Station, the prospect of a return to the moon and – who knows?– perhaps a manned voyage to Mars, ever-longer space missions must be planned for. Robert Ploutz-Snyder describes some of NASA's work to reduce the risk to astronauts.
http://www.openathens.net/

STOCHASTIC MODELS

Application de techniques stochastiques pour l'analyse prospective de l'impact comptable du risque de taux: exemple sur les frais financiers d'une dette obligataire complexe. Bonnin, François; Planchet, Frederic; Juillard, Marc [RKN: 43237]
Shelved at: online only
Bulletin Français d'Actuariat (2011) **11 (no.21)** : 131-152.
Cet article présente une approche opérationnelle pour l'analyse du risque de taux dans une optique de moyen terme et dans une dimension économique et comptable. Cette approche est développée en plusieurs étapes : tout d'abord nous présentons le modèle et les variables stochastiques retenues, ensuite nous présentons le calibrage et les techniques de simulation, et enfin les résultats obtenus. Ce qui fait l'originalité de l'approche est le point de départ qui consiste à laisser de côté délibérément les modèles de simulation risque neutre pour concentrer les choix sur l'objectif recherché : le réalisme des courbes de taux simulées. Le fait de retenir les paramètres de forme de la représentation de Nelson-Siegel comme variables stochastiques et des processus à sauts pour le paramètre de taux courts, rendrait complexe une approche en probabilité risque-neutre, mais facilite au contraire la modélisation sous probabilité réelle.
http://www.institutdesactuaires.com/bfa/

Statistical tools for finance and insurance. Cizek, Pavel; Hardle, Wolfgang Karl; Weron, Rafal (2011). - 2nd ed. - London: Springer, 2011. - 420 pages. [RKN: 73685]
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Statistical Tools for Finance and Insurance presents ready-to-use solutions, theoretical developments and method construction for many practical problems in quantitative finance and insurance. Written by practitioners and leading academics in the field, this book offers a unique combination of topics from which every market analyst and risk manager will benefit. Features of the significantly enlarged and revised second edition: Offers insight into new methods and the applicability of the stochastic technologyProvides the tools, instruments and (online) algorithms for recent techniques in quantitative finance and modern treatments in insurance calculations. Covers topics such as - expected shortfall for heavy tailed and mixture distributions* - pricing of variance swaps* - volatility smile calibration in FX markets - pricing of catastrophe bonds and temperature derivatives* - building loss models and ruin probability approximation - insurance pricing with GLM* - equity linked retirement plans* (new topics in the second edition marked with*) Presents extensive examples

STOCHASTIC PROCESSES

Properties of a risk measure derived from ruin theory. Truffin, Julien; Albrecher, Hansjoerg; Denuit, Michel M - 15 pages. [RKN: 74788]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (2)** : 174-188.

This paper studies a risk measure inherited from ruin theory and investigates some of its properties. Specifically, we consider a value-at-risk (VaR)-type risk measure defined as the smallest initial capital needed to ensure that the ultimate ruin probability is less than a given level. This VaR-type risk measure turns out to be equivalent to the VaR of the maximal deficit of the ruin process in infinite time. A related Tail-VaR-type risk measure is also discussed.

STRATEGIC PLANNING

The governance of strategic risks in systemically important banks. McConnell, Patrick [RKN: 45691]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 128-142.

Among the many market weaknesses highlighted by the global financial crisis, the widespread failures of corporate governance and risk management were identified by official inquiries as being critical. As a result, banking regulatory bodies have responded, proposing long overdue principles of good corporate governance, in particular tightening up on the roles and responsibilities of boards of directors. Strategic risk is arguably, because of the immense uncertainty in the global economy, the greatest risk facing any firm, most especially systemically important banks (SIB); however, strategic risk management, or the management of the risks to a firm's long-term corporate strategy, is not a well-developed discipline. The lack of maturity in the discipline stems, in part, from a fundamental conflict of interest in that the board and management 'own' a firm's strategy but they are at the same time also responsible for implementing the strategy and managing the strategic risks. There is no independent review of the strategic risks taken by many firms, which constitutes a serious deficiency in corporate governance. This paper considers the governance of strategic risks, using Lehman Brothers as a case study, identifying areas of deficiency of governance of strategic risk in practice. The paper also proposes some potential solutions to help address such governance problems.
http://www.openathens.net

ICGN corporate risk oversight guidelines : The role of the board and institutional shareholders. Breen, Erik; Clearfield, Andrew; Klimczak, Karol M [RKN: 45690]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 115-127.

Oversight of risk has become a significant issue in the corporate governance debate following the failure of traditional institutions. In the aftermath of the crisis, the International Corporate Governance Network (ICGN) developed the 'ICGN Corporate Risk Oversight Guidelines' to help institutional investors assess how effectively the boards of their portfolio companies carry out their oversight function regarding financial and non-financial risk. The ICGN Guidelines reflect a consensus achieved during a year of discussions between technical committee members, the sounding board and contributors of comment letters, who represented various institutions and jurisdictions across the world. These debates have culminated in a document that discusses not only the board and company process of risk management and risk oversight and disclosures concerning financial and non-financial risks, but also the investors' responsibilities in oversight and their communication with the companies. The purpose of this paper is to present the ICGN Guidelines with a commentary linking it to the current debate and developments in the corporate world.

STRESS TESTING

Commercial real estate stress testing in community banks: The low stress kind. Jones, Brian W [RKN: 45849]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(4)** : 421-431.

Stress testing has been identified as the most effective method currently available for analysing concentrations in banking portfolios. For community banks, stress testing does not need to be overly complex or involved. In today's constantly evolving regulatory environment, community banks must understand the increasing risk inherent in their lending portfolio. Whether commercial real estate (CRE) stress testing is performed on an internal basis or by a vendor it remains an important tool in evaluating risk. The process itself brings important benefits in structuring of loan data and quantifying the portfolio's risks. This article will present a framework for understanding and performing CRE stress testing in community banks that is gradative in practice and, in some respects, goes beyond the standards adopted by regulators.
http://www.openathens.net

STRESS TESTS

Allocating assets in climates of extreme risk : A new paradigm for stress testing portfolios. Cuffe, Stacy L; Goldberg, Lisa R [RKN: 45655]
Shelved at: Per: FAJ
Financial Analysts Journal (2012) **68(2)** : 85-107.

The authors extended the standard paradigm for portfolio stress testing in two ways. First, they introduced a toolkit that enables investors to envision and administer extreme scenarios. The risk model is integral to the stress test. They demonstrated the substantial impact of using historical and hypothetical covariance matrices in scenario construction. Second, they used a scenario-constrained optimization to incorporate the output of a portfolio stress test directly into an investment decision.

SURETY

Surety bonds with fair and unfair pricing. Wambach, Achim; Engel, Andreas R. [RKN: 45274]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (1)** : 36-50.

Surety bonds are instruments used in public and private procurement to avoid the problem of contractor bankruptcy. A surety company issuing such a bond guarantees to either finish the project itself or pay the bond to the procurement agency in case of contractor's bankruptcy. This situation is analysed under the assumption that the bond is either priced fairly, or a risk loading that is proportional to the money at risk is imposed. If the surety is priced fairly, full insurance (or even overinsurance) is optimal. If the surety is priced unfairly, more solvent contractors are more likely to win, thus the problem of abnormally low tenders is alleviated.

SURVEYS

Experts in experiments. How selection matters for estimated distributions of risk preferences. von Gaudecker, Hans-Martin; van Soest, Arthur; Wengström, Erik Springer, [RKN: 45875]
Shelved at: Per: JRU (Oxf)
Journal of Risk and Uncertainty (2012) **45(2)** : 159-190.

An ever-increasing number of experiments attempts to elicit risk preferences of a population of interest with the aim of calibrating parameters used in economic models. We are concerned with two types of selection effects, which may affect the external validity of standard experiments: Sampling from a narrowly defined population of students ("experimenter-induced selection") and self-selection due to non-response or incomplete response of participants in a random sample from a broad population. We find that both types of selection lead to a sample of experts: Participants perform significantly better than the general population, in the sense of fewer violations of revealed preference conditions. Self-selection within a broad population does not seem to matter for average preferences. In contrast, sampling from a student population leads to lower estimates of average risk aversion and loss aversion parameters. Furthermore, it dramatically reduces the amount of heterogeneity in all parameters.

SWITZERLAND

Interest rate risk: dimension reduction in the Swiss Solvency Test. Ambrus, Marcel; Crugnola-Humbert, Jérôme; Schmid, Martin [RKN: 44831]
Shelved at: online only
European Actuarial Journal (2011) **1(2) November** : 159-172.

Available online via Athens -- Published online, 22 December 2011
Many risk models suffer from the incorporation of too many risk dimensions, which at best only increase computational costs. However, in many cases such models suffer in addition from a poor predictive power, as either the numerous underlying parameters are not understood fully and in order to remain computable the models may be over-simplistic and therefore neglect the more subtle interactions between the main risk drivers. In this paper, we analyze the interest rate risk module of the Swiss Solvency Test Standard Model, where interest rate risk is modeled with 13 risk-factors per currency. We apply the principal component analysis to reduce the dimension of this module. The economic interpretation of the remaining risk-factors becomes obvious, improving the understanding of the model. Further, we suggest to calculate the risk-factor sensitivities at the quantile corresponding to the expected shortfall of the corresponding normally distributed risk-factor. This way the inherent non-linearities are sufficiently allowed for and a complex second order Delta–Gamma approximation could be omitted. A sample calculation based on the SST 2011 for Basler Leben AG is provided to illustrate the validity of our approach with a real world case study.
http://www.openathens.net

SYSTEMIC RISK

Data aggregation and counterparty identification : Considerations for systemic risk analysis. Krishna, Dilip [RKN: 45712]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 305-313.

Systemic risk analysis is now a topic of considerable interest the world over. It requires a combined analysis of the large counterparties in the global economy along with the interactions they have with each other. The availability of a comprehensive and quality dataset is important to systemic risk analysis. This paper discusses the kinds of data potentially required for systemic risk analysis and provides insights into the desired components of a systemic risk information solution.

ERM for insurance companies – adding the investor's point of view. Hitchcox, A N; Klumpes, P J M; McGaughey, K W; Smith, A D; Taverner, N H - 44 pages. [RKN: 74798]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 341-383.

A major outcome of ERM activities in insurance companies has been the bringing together of all of the key risks in the company, to be managed collectively in a holistic fashion. The authors of this paper believe that an ERM framework also needs to look beyond the company, and have regard to the risk management needs of investors, from the point of view of the contribution of the insurance company to the overall risk and reward of their total investment portfolios. To meet these needs, the ERM framework needs to provide sufficient information on topics such as systematic risk, potential correlations of earnings from future new business with macroeconomic trends, other risks to franchise value, and sources of model risk within the company. The paper does not provide solutions for the issues described above; but limits itself to describing and discussing the direction for some important new initiatives in ERM activities.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

ERM for insurance companies – adding the investor's point of view : Abstract of the London discussion on the preceding. Hitchcox, A N - 20 pages. [RKN: 74960]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 385-404.

This discussion relates to the following paper:
A.N. Hitchcox, P.J.M. Klumpes, K.W. McGaughey, A.D. Smith & N.H. Taverner ERM for insurance companies – adding the investor's point of view. British Actuarial Journal Vol 16 No 2
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Legal and regulatory update : Global identification standards for counterparties and other financial market participants. Grody, Allan D; Hughes, Peter J; Reininger, Daniel [RKN: 45711]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 288-304.

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The Solvency II square-root formula for systematic biometric risk. Christiansen, Marcus C; Denuit, Michel M; Lazar, Dorina [RKN: 45599]
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Insurance: Mathematics & Economics (2012) **50 (2)** : 257-265.

In this paper, we develop a model supporting the so-called square-root formula used in Solvency II to aggregate the modular life SCR. Describing the insurance policy by a Markov jump process, we can obtain expressions similar to the square-root formula in Solvency II by means of limited expansions around the best estimate. Numerical illustrations are given, based on German population data. Even if the square-root formula can be supported by theoretical considerations, it is shown that the QIS correlation matrix is highly questionable. http://www.openathens.net/

Systemic risk in financial services : A discussion paper. Besar, D; Booth, Philip M; Chan, K K; Milne, Alistair; Pickles, J (2009). 2009. [RKN: 71955]
Shelved at: ifp 12/09 (Strg box SI Ref 5) ifp 12/09 (Lon) Shelved at: JOU/INS
BAJ (2011) **16(2)** : 195-300.

The current banking crisis has reminded us of how risks materialising in one part of the financial system can have a widespread impact, affecting other financial markets and institutions and the broader economy. This paper, prepared on behalf of the Actuarial Profession, examines how such events have an impact on the entire financial system and explores whether such disturbances may arise within the insurance and pensions sectors as well as within banking. The paper seeks to provide an overview of a number of banking and other financial crises which have occurred in the past, illustrated by four cases studies. It discusses what constitutes a systemic event and what distinguishes it from a large aggregate system wide shock. Finally, it discusses how policy makers can respond to the risk of such systemic financial failures.
Keywords: Banking Crisis; Financial Crisis; Global Financial Crisis; Financial Deregulation; Credit Cycle; Governance; Control Mechanisms; Systemic Risk; Financial Infrastructure; Payment Systems; Short Term Funding Markets; Collateral Exposure; Securities; Derivatives; Counterparty Risk; Recession; Pension System
http://www.actuaries.org.uk/research-and-resources/documents/systemic-risk-financial-services

Systemic risk in financial services. Besar, D; Booth, P; Chan, K K; Milne, A K L; Pickles, J - 106 pages. [RKN: 74795]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 195-300.

The current banking crisis has reminded us of how risks materialising in one part of the financial system can have a widespread impact, affecting other financial markets and institutions and the broader economy. This paper, prepared on behalf of the Actuarial Profession, examines how such events have an impact on the entire financial system and explores whether such disturbances may arise within the insurance and pensions sectors as well as within banking. The paper seeks to provide an overview of a number of banking and other financial crises which have occurred in the past, illustrated by four case studies. It discusses what constitutes a systemic event and what distinguishes it from a large aggregate system wide shock. Finally, it discusses how policy-makers can respond to the risk of such systemic financial failures.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Systemic risk in financial services : Abstract of the London discussion on the preceding. Milne, A K L - 19 pages. [RKN: 74796]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 301-319.

This discussion relates to the following paper:
D. Besar, P. Booth, K.K. Chan, A.K.L. Milne & J. Pickles Systemic risk in financial services. British Actuarial Journal Vol 16 No 2
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Systemic risk in financial services : Abstract of the Edinburgh discussion on the preceding. Milne, A K L - 20 pages. [RKN: 74797]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2011) **16 (2)** : 321-340.

This discussion relates to the following paper:
D. Besar, P. Booth, K.K. Chan, A.K.L. Milne & J. Pickles Systemic risk in financial services. British Actuarial Journal Vol 16 No 2
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

The systemic risks of OTC derivatives central clearing. Murphy, David [RKN: 45714]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 319-334.

This paper examines the changes to systemic risk made by the introduction of over the counter derivatives central clearing. It discusses both the reductions in exposure brought about by the introduction of central counterparties (CCPs) as buffers between derivatives counterparties, and the risks posed by the potential for a CCP failure. In particular, this paper studies both the solvency risks whereby a CCP might sustain sufficient losses to be unable to continue operations, and liquidity risks whereby the failure of a CCP or one of its members may be caused by an inability to meet claims. Based on this analysis, possible mitigants are suggested to the principal systemic risks posed by central clearing.

SYSTEMS THINKING

Crash course. Cantle, Neil; Ingram, David Staple Inn Actuarial Society, - 2 pages. [RKN: 70906]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **October** : 30.

Neil Cantle and David Ingram highlight the perils of modelling outcomes and show how to avert danger with systems thinking.
http://www.theactuary.com/

TAIL RISK MEASURES

Calculating and communicating tail association and the risk of extreme loss: a discussion paper. Sweeting, Paul; Fotiou, Fotis (2011). - London: Institute and Faculty of Actuaries, 2011. - 66 pages. [RKN: 45483]
Shelved at: EEQ pam (Lon) Shelved at: JOU

This paper examines two aspects of extreme events; their calculation and their communication. In relation to calculation, two types of extreme event are considered: the extent to which extreme events in two or more variables occur together, and the combinations of losses from a series of risks that together result in total losses exceeding a particular level. The communication of extreme events is discussed not only in terms of numbers but explores graphical methods that can be used to aggregate information on a range of risk combinations. This involves communicating not just the level of risk but also the importance of the risk considered.
http://www.actuaries.org.uk/sites/all/files/event brochures/110724erm report clean.pdf

Second-order expansions of the risk concentration based on CTE [Conditional Tail Expectation]. Mao, Tiantian; Lv, Wenhua; Hu, Taizhong [RKN: 44864]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **51(2)** : 449-456.

The quantification of diversification benefits due to risk aggregation has received more attention in the recent literature. In this paper, we establish second-order expansions of the risk concentration based on the risk measure of conditional tail expectation [CTE] for a portfolio of n independent and identically distributed loss random variables. The key tools are the theory of second-order regular variation and the theory of second-order subexponentiality. Some examples are given.
http://www.openathens.net/

Tail comonotonicity: properties, constructions, and asymptotic additivity of risk measures. Hua, Lei; Joe, Harry [RKN: 44869]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **51(2)** : 472-479.

We investigate properties of a version of tail comonotonicity that can be applied to absolutely continuous distributions, and give several methods for constructions of multivariate distributions with tail comonotonicity or strongest tail dependence. Archimedean copulas as mixtures of powers, and scale mixtures of a non-negative random vector with the mixing distribution having slowly varying tails, lead to a tail comonotonic dependence structure. For random variables that are in the maximum domain of attraction of either Fréchet or Gumbel, we prove the asymptotic additivity property of Value at Risk and Conditional Tail Expectation.
http://www.openathens.net/

TECHNOLOGY

Data aggregation and counterparty identification : Considerations for systemic risk analysis. Krishna, Dilip [RKN: 45712]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 305-313.
Systemic risk analysis is now a topic of considerable interest the world over. It requires a combined analysis of the large counterparties in the global economy along with the interactions they have with each other. The availability of a comprehensive and quality dataset is important to systemic risk analysis. This paper discusses the kinds of data potentially required for systemic risk analysis and provides insights into the desired components of a systemic risk information solution.

TEMPERANCE

Beyond risk aversion: Why, how and what's next? : EGRIE Keynote Address. Eeckhoudt, Louis - 15 pages. [RKN: 70260]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (2)** : 141-155.
Risk attitudes other than risk aversion (e.g. prudence and temperance) are becoming important both in theoretical and empirical work. While the literature has mainly focused its attention on the intensity of such risk attitudes (e.g. the concepts of absolute prudence and absolute temperance), I consider here an alternative approach related to the direction of these attitudes (i.e. the sign of the successive derivatives of the utility function).

TERRORISM

Extreme measures. Cox, Andy; Reid, Scott Staple Inn Actuarial Society, [RKN: 45475]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **October** : 28-30.
Andy Cox and Scott Reid consider the intricacies of modelling terrorism risk.
http://www.theactuary.com/

TERRORISM INSURANCE

Corporate management of highly dynamic risks: : Evidence from the demand for terrorism insurance in Germany. Thomann, Christian; Pascalau, Razvan; von der Schulenburg, J Mattias Graf - 26 pages. [RKN: 74942]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (1)** : 57-82.
This paper investigates a corporation's risk management response to highly dynamic risks. Using a unique data set on the German terrorist insurance market, the paper tests whether corporate risk managers have a clear understanding of the probability distribution of highly dynamic risks or if risk managers learn from severe losses and base their decisions upon day-to-day experience. The paper further investigates whether risk managers become more confident in their risk management decisions over time. For this purpose, we apply Viscusi's prospective reference theory to a corporate context. We find that firms learn from single events when making their risk management decisions, and that risk managers become more confident with their risk management decisions over time.

TIME

Our inability to judge time frames. Lukomnik, Jon [RKN: 45692]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 143-145.
Properly assessing time is fundamental to risk governance and risk management. However, two recent studies reveal systemic weaknesses in how accurately future events are discounted. The first reveals that distant cash flows are over discounted and the second suggests that self-defined time horizons are ineffective and ignored.

TRANSACTION COSTS

(S,s)-adjustment strategies and hedging under Markovian dynamics. Agliardi, Elettra; Andergassen, Rainer - 20 pages. [RKN: 74786]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (2)** : 112-131.
We study the destabilizing effect of hedging strategies under Markovian dynamics with transaction costs. Once transaction costs are taken into account, continuous portfolio rehedging is no longer an optimal strategy. Using a non-optimizing (local in time) strategy for portfolio rebalancing, explicit dynamics for the price of the underlying asset are derived, focusing in particular on excess volatility and feedback effects of these portfolio insurance strategies. Moreover, it is shown how these latter depend on the heterogeneity of the insured payoffs. Finally, conditions are derived under which it may be still reasonable, from a practical viewpoint, to implement Black–Scholes strategies.

TRANSFER

Transferring knowledge of risk management to the board of directors and executives. Rodriguez, Eduardo; Edwards, John S [RKN: 45694]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 162-180.

Enterprise risk management (ERM) and knowledge management (KM) both encompass top-down and bottom-up approaches developing and embedding risk knowledge concepts and processes in strategy, policies, risk appetite definition, the decision-making process and business processes. The capacity to transfer risk knowledge affects all stakeholders and understanding of the risk knowledge about the enterprise's value is a key requirement in order to identify protection strategies for business sustainability. There are various factors that affect this capacity for transferring and understanding. Previous work has established that there is a difference between the influence of KM variables on risk control and on the perceived value of ERM. Communication among groups appears as a significant variable in improving risk control but only as a weak factor in improving the perceived value of ERM. The ERM mandate, however, requires for its implementation a clear understanding of risk management (RM) policies, actions and results, and the use of the integral view of RM as a governance and compliance programme to support the value-driven management of the organisation. Furthermore, ERM implementation demands better capabilities for unification of the criteria of risk analysis, alignment of policies and protection guidelines across the organisation. These capabilities can be affected by risk knowledge sharing between the RM group and the board of directors and other executives in the organisation. This research presents an exploratory analysis of risk knowledge transfer variables used in risk management practice. A survey to risk management executives from 65 firms in various industries was undertaken and 108 answers were analysed. Potential relationships among the variables are investigated using descriptive statistics and multivariate statistical models. The level of understanding of risk management policies and reports by the board is related to the quality of the flow of communication in the firm and perceived level of integration of the risk policy in the business processes.

UNCERTAINTY

Ambiguity aversion and familiarity bias : Evidence from behavioral and gene association studies. Chew, Soo Hong; Ebstein, Richard P; Zhong, Songfa Springer, [RKN: 45591]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **44 (1)** : 1-18.

It is increasingly recognized that decision making under uncertainty depends not only on probabilities, but also on psychological factors such as ambiguity and familiarity. Using 325 Beijing subjects, we conduct a neurogenetic study of ambiguity aversion and familiarity bias in an incentivized laboratory setting. For ambiguity aversion, 49.4% of the subjects choose to bet on the 50–50 deck despite the unknown deck paying 20% more. For familiarity bias, 39.6% choose the bet on Beijing's temperature rather than the corresponding bet with Tokyo even though the latter pays 20% more. We genotype subjects for anxiety-related candidate genes and find a serotonin transporter polymorphism being associated with familiarity bias, but not ambiguity aversion, while the dopamine D5 receptor gene and estrogen receptor beta gene are associated with ambiguity aversion only among female subjects. Our findings contribute to understanding of decision making under uncertainty beyond revealed preference.

Deterrence, expected cost, uncertainty and voting: Experimental evidence. DeAngelo, Gregory; Charness, Gary Springer, [RKN: 45594]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **44 (1)** : 73-100.

We conduct laboratory experiments to investigate the effects of deterrence mechanisms under controlled conditions. The effect of the expected cost of punishment of an individual's decision to engage in a proscribed activity and the effect of uncertainty on an individual's decision to commit a violation are very difficult to isolate in field data. We use a roadway speeding framing and find that (a) individuals respond considerably to increases in the expected cost of speeding, (b) uncertainty about the enforcement regime yields a significant reduction in violations committed, and (c) people are much more likely to speed when the punishment regime for which they voted is implemented. Our results have important implications for a behavioral theory of deterrence under uncertainty.

Failing to learn from experience about catastrophes : The case of hurricane preparedness. Meyer, Robert J Springer, [RKN: 45854]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **45 (1)** : 25-50.

This paper explores the question of whether there are inherent limits to our ability to learn from experience about the value of protection against low-probability, high-consequence, events. Findings are reported from two controlled experiments in which participants have a monetary incentive to learn from experience making investments to protect against hurricane risks. A central finding is that investments display a short-term forgetting effect consistent with the use of reinforcement learning rules, where a significant driver of investments in a given period is whether storm losses were incurred in the precious period. Given the relative rarity of such losses, this reinforcement process produces a mean investment level below that which would be optimal for most storm threats. Investments are also found to be insensitive to the censoring effect of protection itself, implying that the size of experienced losses—rather than losses that are avoided—is the primary driver of investment decisions.
http://www.openathens.net

Handling uncertainty : The key to truly effective enterprise risk management. Institute and Faculty of Actuaries; Institution of Civil Engineers (2011). - London: Institute and Faculty of Actuaries, 2011. - 15 pages. [RKN: 45632]
Shelved at: Online only Shelved at: Online only

This booklet outlines a significant new approach to Enterprise Risk Management (ERM), adding value from the systematic management of uncertainty. It addresses how businesses can manage the future better by concentrating on uncertainty, the overall variability of business outcomes, the connections and correlations between risks, and the scope for new business opportunities, within an ERM framework.
http://www.actuaries.org.uk/research-and-resources/documents/handling-uncertainty-key-truly-effective-enterprise-risk-management

Innovation and information acquisition under time inconsistency and uncertainty. Chemarin, Sophie; Orset, Caroline - 42 pages. [RKN: 74787]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (2)** : 132-173.

When an agent invests in new industrial activities, he has a limited initial knowledge of his project's returns. Acquiring information allows him both to reduce the uncertainty on the dangerousness of this project and to limit potential damages that it might cause on people's health and on the environment. In this paper, we study whether there exist situations in which the agent does not acquire information. We find that an agent with time-consistent preferences, as well as an agent with hyperbolic ones, will acquire information unless its cost exceeds the direct benefit they could get with this information. Nevertheless, a hyperbolic agent may remain strategically ignorant and, when he does acquire information, he will acquire less information than a time-consistent type. Moreover, a hyperbolic-discounting type who behaves as a time-consistent agent in the future is more inclined to stay ignorant. We then emphasize that this strategic ignorance depends on the degree of precision of the information. Finally, we analyse the role that existing liability rules could play as an incentive to acquire information under uncertainty and with regard to the form of the agent's preferences.

Viewing the future through a warped lens: Why uncertainty generates hyperbolic discounting. Epper, Thomas; Fehr-Duda, Helga; Bruhin, Adrian Springer, [RKN: 45528]
Journal of Risk and Uncertainty (2011) **43 (3)** : 169-203.

A large body of experimental research has demonstrated that, on average, people violate the axioms of expected utility theory as well as of discounted utility theory. In particular, aggregate behavior is best characterized by probability distortions and hyperbolic discounting. But is it the same people who are prone to these behaviors? Based on an experiment with salient monetary incentives we demonstrate that there is a strong and significant relationship between greater departures from linear probability weighting and the degree of decreasing discount rates at the level of individual behavior. We argue that this relationship can be rationalized by the uncertainty inherent in any future event, linking discounting behavior directly to risk preferences. Consequently, decreasing discount rates may be generated by people's proneness to probability distortions.

UNIT LINKED LIFE ASSURANCE

On the valuation of investment guarantees in unit-linked life insurance: a customer perspective. Gatzert, Nadine; Huber, Carin; Schmeiser, Hato Palgrave Macmillan, [RKN: 39974]
Shelved at: Per: Geneva (Oxf)
Geneva Papers on Risk and Insurance (2011) **36(1)** : 3-29.

Available online via Athens
Interest rate guarantees in unit-linked life insurance products ensure that at contract maturity, at least a minimum guaranteed amount is paid, even if the mutual fund falls below the guaranteed level. Strongly depending on the riskiness of the underlying mutual fund, these guarantees can be of substantial value. However, while insurer pricing is based on the replication of cash flows, customers are more likely to base their decisions on individual preferences. The aim of this paper is to contrast reservation prices for guarantees in unit-linked life insurance policies based on customers' subjective willingness to pay with a financial pricing approach, an investigation that has not been undertaken to date. To do so, we use an online questionnaire survey and calculate reservation prices using option pricing theory. Our findings reveal that even though the majority of the participants in the online questionnaire are employed in the field of insurance, subjective prices are difficult to derive and are significantly lower on average than the prices obtained using a financial pricing model. However, a considerable portion of participants is still willing to pay a substantially higher price.
http://www.openathens.net

UNITED STATES

Disability risk management and post-injury employment of workers with back pain. Johnson, William G; Butler, Richard J; Baldwin, Marjorie L; Côté, Pierre - 21 pages. [RKN: 73820]
Shelved at: JOU
Risk Management and Insurance Review (2012) **15 (1)** : 35-55.

We analyze the outcomes of occupational back pain among four large employers that use one or more of the following disability management practices: aggressive return to work, claims management, medical management, or time-limited job accommodations. Outcomes measured at 6 and 12 months postonset include: duration of initial work absence and the probability of returning to stable employment. Employment outcomes are better in firms with more proactive return-to-work policies than in firms with more restrictive policies. We devise a statistical test for attrition bias and conclude that sample attrition does not significantly alter our results.
http://www.openathens.net

Fuel risk management at American electric power. Buck, Douglas; Elliott, Dwayne; Niehaus, Greg; Rives, Bill; Thomas, Laura - 22 pages. [RKN: 73818]
Shelved at: JOU
Risk Management and Insurance Review (2012) **15 (1)** : 1-22.

The senior management team and board of directors at American Electric Power (AEP) have emphasized the importance of an Enterprise Risk Management approach for dealing with the wide array of risk exposures that the firm faces. Senior management has put in place a risk governance structure that facilitates the identification of major risk exposures, assesses their impact on the firm's overall risk profile, and interacts the risk management process with the strategic planning process. Central to this structure is the firm's Risk Executive Committee, which includes the senior leadership of the firm and the Enterprise Risk Oversight staff. Members of the AEP Enterprise Risk Oversight group have just returned from a meeting of the Risk Executive Committee. The

discussion at the meeting focused on an event that recently came to the firm's attention—an unexpected disruption in the firm's coal supply over the coming year due to necessary repairs in railroad facilities near the coal source. By the end of the week, the Enterprise Risk Oversight group needs to communicate with the relevant teams within the organization as part of its effort to identify the potential repercussions of the event for the enterprise. In addition, the Risk Executive Committee would like the groups to identify other possible adverse events that could occur and steps that should be taken now in preparation.
http://www.openathens.net

Risk parity in US futures markets : Invited editorial. Scherer, Bernd Palgrave Macmillan, [RKN: 45745]
Shelved at: Per: J.Asset Man (Oxf)
Journal of Asset Management (2012) **13 (3)** : 155-161.
Risk parity allocates identical percentage contribution to risk to each individual asset. In the absence of established theoretical foundations, investors and product suppliers attribute the strong historical performance of risk parity portfolios to better diversification. This is an ill-founded belief. For US futures data I show that risk parity is not about diversification, but about higher return expectations for leveraged low-risk bonds. Although this is consistent with leverage aversion, it is incompatible with consumption-based asset pricing. In contrast to past work, I use futures data instead of diversified equity and bond indices. This allows concerns raised earlier about the availability of historic implementation costs or the historic price of leverage to be sidestepped.

Tabletop disaster exercise to enhance risk management education. Nielson, Norma L; Kitching, Brian - 12 pages. [RKN: 73819]
Shelved at: JOU
Risk Management and Insurance Review (2012) **15 (1)** : 23-34.
This article describes a disaster planning exercise undertaken by a University class of risk management students
http://www.openathens.net

VALUATION

CVA the wrong way. Rosen, Dan; Saunders, David [RKN: 45709]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 252-272.
The credit valuation adjustment (CVA) has become an integral part of accounting rules and Basel III. The case where the counterparty exposure increases when its credit quality deteriorates is commonly referred as wrong-way risk (WWR). WWR can have a significant impact on CVA, economic capital and collateralised exposures with margins. A robust method is presented to calculate CVA with WWR that is intuitive, easy to implement and computationally efficient. The methodology effectively leverages existing 'pre-computed' exposures into a joint market and credit risk portfolio model, which allows the performance of multiple CVA calculations for sensitivities, stress testing and value-at-risk (VaR). It further provides a model risk framework for assessing both general and idiosyncratic WWR, and stress testing both the factors driving correlations as well as the strength of the correlations. The approach is demonstrated through a practical example. While the impact of WWR at the counterparty level can be very significant, the effect of general WWR at the portfolio level may not be as strong for well balanced, large portfolios of derivatives. Furthermore, the standardised charge in Basel III can be significant even when compared against very conservative internal models with WWR.

Life insurance risk management essentials. Koller, Michael (2011). - Berlin: Springer-Verlag, 2011. - xxi, 334 p. pages. [RKN: 45278]
Shelved at: BV/BXP (Lon)
The aim of the book is to provide an overview of risk management in life insurance companies. The focus is twofold: (1) to provide a broad view of the different topics needed for risk management and (2) to provide the necessary tools and techniques to concretely apply them in practice.

On the valuation of investment guarantees in unit-linked life insurance: a customer perspective. Gatzert, Nadine; Huber, Carin; Schmeiser, Hato Palgrave Macmillan, [RKN: 39974]
Shelved at: Per: Geneva (Oxf)
Geneva Papers on Risk and Insurance (2011) **36(1)** : 3-29.
Available online via Athens
Interest rate guarantees in unit-linked life insurance products ensure that at contract maturity, at least a minimum guaranteed amount is paid, even if the mutual fund falls below the guaranteed level. Strongly depending on the riskiness of the underlying mutual fund, these guarantees can be of substantial value. However, while insurer pricing is based on the replication of cash flows, customers are more likely to base their decisions on individual preferences. The aim of this paper is to contrast reservation prices for guarantees in unit-linked life insurance policies based on customers' subjective willingness to pay with a financial pricing approach, an investigation that has not been undertaken to date. To do so, we use an online questionnaire survey and calculate reservation prices using option pricing theory. Our findings reveal that even though the majority of the participants in the online questionnaire are employed in the field of insurance, subjective prices are difficult to derive and are significantly lower on average than the prices obtained using a financial pricing model. However, a considerable portion of participants is still willing to pay a substantially higher price.
http://www.openathens.net

VALUATIONS

Reference-dependent valuations of risk: Why willingness-to-accept exceeds willingness-to-pay. Viscusi, W Kip; Huber, Joel Springer, [RKN: 45592]
Shelved at: Per: J Risk Uncrtnty
Journal of Risk and Uncertainty (2012) **44 (1)** : 19-44.

The gap between willingness-to-pay (WTP) and willingness-to-accept (WTA) benefit values typifies situations in which reference points—and direction of movement from reference points—are consequential. Why WTA-WTP discrepancies arise is not well understood. We generalize models of reference dependence to identify separate reference dependence effects for increases and decreases in environmental health risk probabilities, for increases and decreases in costs, and reference dependence effects embodying the interaction of two changes. We estimate separate reference dependence effects for the four possible cost and health risk change combinations using data from our choice-based experiment for a nationally representative sample of 4,745 households. The WTA-WTP gap is due largely to the reference dependence effects related to costs. Standard models of reference dependence are not consistent with the results, as there is an interactive effect. Estimated income effects are under a penny and thus cannot account for higher values of WTA relative to WTP.

VALUE-AT-RISK (VAR)

CVA the wrong way. Rosen, Dan; Saunders, David [RKN: 45709]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(3)** : 252-272.

The credit valuation adjustment (CVA) has become an integral part of accounting rules and Basel III. The case where the counterparty exposure increases when its credit quality deteriorates is commonly referred as wrong-way risk (WWR). WWR can have a significant impact on CVA, economic capital and collateralised exposures with margins. A robust method is presented to calculate CVA with WWR that is intuitive, easy to implement and computationally efficient. The methodology effectively leverages existing 'pre-computed' exposures into a joint market and credit risk portfolio model, which allows the performance of multiple CVA calculations for sensitivities, stress testing and value-at-risk (VaR). It further provides a model risk framework for assessing both general and idiosyncratic WWR, and stress testing both the factors driving correlations as well as the strength of the correlations. The approach is demonstrated through a practical example. While the impact of WWR at the counterparty level can be very significant, the effect of general WWR at the portfolio level may not be as strong for well balanced, large portfolios of derivatives. Furthermore, the standardised charge in Basel III can be significant even when compared against very conservative internal models with WWR.

Enhancing insurer value using reinsurance and value-at-risk criterion. Tan, Ken Seng; Weng, Chengguo - 32 pages. [RKN: 74944]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2012) **37 (1)** : 109-140.

The quest for optimal reinsurance design has remained an interesting problem among insurers, reinsurers, and academicians. An appropriate use of reinsurance could reduce the underwriting risk of an insurer and thereby enhance its value. This paper complements the existing research on optimal reinsurance by proposing another model for the determination of the optimal reinsurance design. The problem is formulated as a constrained optimization problem with the objective of minimizing the value-at-risk of the net risk of the insurer while subjecting to a profitability constraint. The proposed optimal reinsurance model, therefore, has the advantage of exploiting the classical tradeoff between risk and reward. Under the additional assumptions that the reinsurance premium is determined by the expectation premium principle and the ceded loss function is confined to a class of increasing and convex functions, explicit solutions are derived. Depending on the risk measure's level of confidence, the safety loading for the reinsurance premium, and the expected profit guaranteed for the insurer, we establish conditions for the existence of reinsurance. When it is optimal to cede the insurer's risk, the optimal reinsurance design could be in the form of pure stop-loss reinsurance, quota-share reinsurance, or a combination of stop-loss and quota-share reinsurance.

Evaluation of the Basel VaR-based market risk charge and proposals for a needed adjustment. Fricke, Jens; Pauly, Ralf [RKN: 45848]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(4)** : 398-420.

This analysis shows that in high risk situations the Basel II guidelines fail in the attempt to cushion against large losses by higher capital requirements. One of the factors causing this problem is that the built-in positive incentive of the penalty factor resulting from the Basel backtesting is set too weak. Therefore, this paper proposes a new procedure for market risk regulation and it demonstrates how this works with real time series. A comparison study shows that contrary to the existing Basel regulation the proposition presented here has the intended quality as a built-in incentive for choosing a reliable forecasting model. By including the expected shortfall as a further measure of risk this paper's concept yields a steeper increase of the penalty factor and as a consequence a stronger effect of risk underestimation on the capital requirement. The recent proposal of the Basel Committee on Banking Supervision may have the same weakness as the Basel II regulation because it is constructed in an analogous manner.
http://www.openathens.net

Insurance risk capital for the Sparre Andersen model with geometric Lévy stochastic returns. Hürlimann, Werner [RKN: 44834]
Shelved at: online only
European Actuarial Journal (2011) **1(2) November** : 215-235.

Available online via Athens -- Published online, 22 December 2011
Some multi-period insurance risk economic capital models that include the effects of heavy-tail claims and random returns are considered. They are based on the Sparre Andersen risk model with geometric Lévy stochastic returns. The random accumulated surplus over an arbitrary finite time horizon is decomposed into insurance risk, market risk and future profit components. A protection against the solvency risk of the policyholders is obtained by applying the VaR (CVaR) measure to the insurance risk component and defines a multi-period insurance risk VaR (CVaR) economic capital. A classical asymptotic result by Resnick and Willekens [Ref. 28: Resnick SI, Willekens E (1991) Moving averages with random coefficients and random coefficient autoregressive models. Comm. Statist. Stochastic Models 7(4):511–525] on the tail probability of moving averages with random

coefficients is applied to the accumulated aggregate claims random variable for claim size distributions with regularly varying tail to derive asymptotic formulas for these multi-period insurance risk economic capitals. Numerical examples with a Pareto claim size distribution reveal interesting features and differences between these two solvency rules. Since the preceding results exclude the log-normal and the heavy-tailed Weibull claim size distributions, we consider also an extension to sub-exponential claim sizes for the compound Poisson model with constant force of interest, which is based on Hao and Tang [Ref. 12: Hao X, Tang Q (2008) A uniform asymptotic estimate for discounted aggregate claims with subexponential tails. Insurance Math. Econom. 43(1):116–120]. The obtained results are compared with the standard Solvency II specification of the non-life insurance risk.
http://www.openathens.net

An integrated cost of risk model and its application to company valuation. Baier, Alexander [RKN: 44817]
Shelved at: online only
European Actuarial Journal (2011) **1(1) Supplement 2** : 169-184.
Available online via Athens -- Selected paper presented during the 19th International Actuarial Association AFIR Colloquium in Munich, Germany, 2009
This paper proposes an integrated approach of measuring risk and the associated cost. The model is developed from the simple practical example of a bond spread and then generalized. This leads to a class which encompasses spectral risk measures and hence includes the popular measures Value at Risk and Tail Value at Risk and under certain conditions is coherent. The defining equations lead to a “natural” decomposition by sub portfolio under practical conditions. In an application section market data is used to parametrize the measure and evaluate the capital cost of an example company.
http://www.openathens.net

Playing the long game. Plat, Richard Staple Inn Actuarial Society, [RKN: 45110]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: SIA/ACT
The Actuary (2011) **March** : 26-27.
Richard Plat describes a stochastic mortality model suitable for calculating capital on a one-year Value-at-Risk measure.
http://www.theactuary.com/archive

Properties of a risk measure derived from ruin theory. Truffin, Julien; Albrecher, Hansjoerg; Denuit, Michel M - 15 pages. [RKN: 74788]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (2)** : 174-188.
This paper studies a risk measure inherited from ruin theory and investigates some of its properties. Specifically, we consider a value-at-risk (VaR)-type risk measure defined as the smallest initial capital needed to ensure that the ultimate ruin probability is less than a given level. This VaR-type risk measure turns out to be equivalent to the VaR of the maximal deficit of the ruin process in infinite time. A related Tail-VaR-type risk measure is also discussed.

Staring into a black hole. Haldane, Andrew G; Nelson, Benjamin Staple Inn Actuarial Society, - 2 pages. [RKN: 70905]
Shelved at: Per: Actuary (Oxf) Per: Actuary (Lon) Shelved at: JOU
The Actuary (2012) **October** : 28.
Andrew Haldane and Benjamin Nelson argue the need for a fundamental rethink of risk management tools and regulatory capital requirements.
http://www.theactuary.com/

Tail comonotonicity: properties, constructions, and asymptotic additivity of risk measures. Hua, Lei; Joe, Harry [RKN: 44869]
Shelved at: Online Only Shelved at: Online Only
Insurance: Mathematics & Economics (2012) **51(2)** : 472-479.
We investigate properties of a version of tail comonotonicity that can be applied to absolutely continuous distributions, and give several methods for constructions of multivariate distributions with tail comonotonicity or strongest tail dependence. Archimedean copulas as mixtures of powers, and scale mixtures of a non-negative random vector with the mixing distribution having slowly varying tails, lead to a tail comonotonic dependence structure. For random variables that are in the maximum domain of attraction of either Fréchet or Gumbel, we prove the asymptotic additivity property of Value at Risk and Conditional Tail Expectation.
http://www.openathens.net/

VALUES

The governance of value(s). Koenig, David R [RKN: 45696]
Shelved at: Per (Oxf)
Journal of Risk Management in Financial Institutions (2012) **5(2)** : 194-210.
Based on excerpts from Governance Reimagined: Organizational Design, Risk and Value Creation, to be published by John Wiley & Sons, May 2012, the author explores the relationship between value and the pursuit of values with a specific focus on the role that resiliency plays in our ability to be successful in creating value. Psychological influences such as loss avoidance are greatly underappreciated and forms of corporate governance like network governance can play an important role in minimising the impact of these factors, along with enhancing the ability of organisations to create value.

VARIABLE ANNUITIES

Impacts of jumps and stochastic interest rates on the fair costs of guaranteed minimum death benefit contracts. Quittard-Pinon, François; Randrianarivony, Rivo [RKN: 45275]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (1)** : 51-73.

The authors offer a new perspective to the field of guaranteed minimum death benefit contracts, especially for simple return premium and rising floor guarantees. A particular feature of these contracts is a guaranteed capital upon the insured's death. A complete methodology based on the generalized Fourier transform is proposed to investigate the impacts of jumps and stochastic interest rates. This paper thus extends Milevsky and Posner (2001). If jumps alone are considered, similar results are obtained, but, when stochastic interest rates are introduced, the fair costs of the guarantee feature are found to be substantially higher in this more general economy.

VOLATILITY

(S,s)-adjustment strategies and hedging under Markovian dynamics. Agliardi, Elettra; Andergassen, Rainer - 20 pages. [RKN: 74786]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (2)** : 112-131.

We study the destabilizing effect of hedging strategies under Markovian dynamics with transaction costs. Once transaction costs are taken into account, continuous portfolio rehedging is no longer an optimal strategy. Using a non-optimizing (local in time) strategy for portfolio rebalancing, explicit dynamics for the price of the underlying asset are derived, focusing in particular on excess volatility and feedback effects of these portfolio insurance strategies. Moreover, it is shown how these latter depend on the heterogeneity of the insured payoffs. Finally, conditions are derived under which it may be still reasonable, from a practical viewpoint, to implement Black–Scholes strategies.

WALKER REVIEW

Entity-wide risk management for pension funds
. Kemp, M H D; Patel, C C - 64 pages. [RKN: 70185]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (2)** : 331-394.

This paper explores the application of ERM-style techniques to pension funds. It uses the term ‘entity-wide risk management’ rather than ‘enterprise risk management’, even though both have the same acronym (‘ERM’), because many pension funds do not view themselves as business ‘enterprises’ as such. Some of the techniques that business enterprises have for managing risk (e.g. raising new capital from shareholders or branching into new business areas if existing ones have unattractive risk-reward characteristics) may not be open to many pension funds. The paper argues that the holistic approach to risk management (and governance) that is a hallmark of ERM is as appropriate to pension funds as it is to any other type of entity. This is the case whether the fund is defined benefit or defined contribution in nature, or a hybrid. It is also the case whether the ‘entity’ is deemed to be the fund itself, the sponsor or the two combined. Indeed, there are aspects of pension arrangements, such as the relationship between the fund and its sponsor, that lend added impetus to the use of ERM-style techniques in practical pension fund management.
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Entity-wide risk management for pension funds : Abstract of the Edinburgh discussion. Kemp, M H D - 18 pages. [RKN: 70186]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (2)** : 395-412.

Edinburgh discussion, 21 February 2011
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

Entity-wide risk management for pension funds : Abstract of the London discussion. Kemp, M H D - 22 pages. [RKN: 70195]
Shelved at: Per: BAJ (Oxf) Per: BAJ (Lon) Shelved at: REF
BAJ (2012) **17 (2)** : 413-434.

London discussion, 28 February 2011
http://www.actuaries.org.uk/research-and-resources/pages/members-access-journals

WEATHER

Weather risk hedging in the European markets and international investment diversification. Yang, Charles C; Li, Linda Shihong; Wen, Min-Ming [RKN: 45276]
Shelved at: Per: Geneva (Oxf)
Geneva Risk and Insurance Review (2011) **36 (1)** : 74-94.

This article analyses weather risk hedging efficiency in three European countries using weather derivatives traded at Chicago Mercantile Exchange (CME) and explores the potential of weather derivatives as a new investment asset to further diversify investors’ portfolios. The results document that the CME European weather contracts are generally effective in hedging the temperature risk in the three European countries. However, for a specific country, weather risk hedging using other countries’ weather indexes is generally not effective. Zero or little correlation among international weather indexes and stock market indexes indicates that weather derivatives should be an efficient investment diversifier. This research provides important insights to both weather risk hedgers and investors.

WORKERS' COMPENSATION INSURANCE

Loss reduction through worker satisfaction : The case of worker's compensation. Butler, Richard J; Johnson, William G - 26 pages.
[RKN: 74767]
Shelved at: JOU
Risk Management and Insurance Review (2011) **14 (1)** : 1-26.

A prospective study of occupational low back pain (LBP) indicates loss reduction efforts in workers' compensation that improve workers satisfaction with the treatment of their claim significantly improves levels of recovery (reduces losses) and lowers workers' compensation insurance costs. The improved outcomes associated with greater worker satisfaction with the firm's treatment of their injury claim, as well as with the treatment from their health care provider, are robust to five alternative measures of back problems, including leg pain and back pain scales, measures of functional limitation, and quality of life scales. Satisfaction with effectiveness of the health care is more important in recovery than satisfaction with the provider's bedside manner. While satisfaction with health care provider significantly improves back pain and functionality at 6 months, satisfaction with the employer's treatment of the claim is equally important at 6 months and grows in quantitative importance at 1 year. Overall, higher satisfaction with claim treatment reduces the likelihood that an injury becomes an indemnity claim and results in almost a 30 percent reduction in claim costs.
http://www.openathens.net