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and Faculty  
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## Pensions, Risk and Investment Conference 2016 with AFIR/ERM

31 May - 2 June 2016, EICC, Edinburgh

AFIR/ERM join the Institute and Faculty of Actuaries Pensions, Risk and Investment Conference in 2016



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# IAA / ASHK Life Section Colloquium

## 25-27 April 2016

## Hong Kong

### Insurance Evolution: Change is the only Constant

The International Actuarial Association (IAA) and the Actuarial Society of Hong Kong (ASHK) invite you to attend the IAA/ASHK Life Section Colloquium to be held on 25-27 April 2016 in Hong Kong at the Conrad Hotel.



### Call for papers and Registration

The overall theme of the conference,

#### Insurance Evolution: Change is the only Constant,

recognises that the life insurance industry is continuing to evolve to meet the needs of its customers, and how the role of the actuary is changing and adapting within this.

The Scientific Committee is starting the search for speakers to present at this prodigious event. Would you like to be part of the programme?

**Deadline for synopsis submission: 15 November 2015**

Online registration is launched! Please visit our website to register online.

Registration Category	On/Before 15 January 2016 (HK Time)	After 15 January 2016 (HK Time)
IAA Section Member / ASHK Member	HK\$4,650 (US\$600)	HK\$5,600 (US\$720)
Non-member	HK\$5,600 (US\$720)	HK\$6,550 (US\$840)
Academic	HK\$3,200 (US\$410)	

**Paper submission and registration:**  
<http://www.actuaries.org/hongkong2016/>



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# Please join us at the ASTIN Colloquium in Lisbon, Portugal 31 May to 3 June 2016

The Portuguese Institute of Actuaries (IAP), the ASTIN Section of the IAA proudly announce the 2016 ASTIN Colloquium to be held in Lisbon from 31 May (welcome cocktail) to 3 of June 2016.

This is the opportunity to gather actuaries from all over the world to discuss recent developments in actuarial science and to promote a better knowledge of our profession.

The key areas under the spotlight of this colloquium will be:

- Loss reserving and capital adequacy;
- Insurance pricing and optimization;
- Reinsurance and risk transfer;
- Risk management
- Natural hazards, disaster, catastrophe risks and pricing;
- Capital management, allocation and pricing;
- Dividend theory and practice;
- Longevity, health, critical illness and employment insurance;
- Risk theory;
- Copulas: theory and applications;
- Extreme value statistics;

We warmly invite you to join us in making this a memorable event professionally and socially.



The Portuguese were the actors of the first globalization.

The 16th and 17th centuries were times of wealth for Portugal, until the English and the Dutch extended their control of the seas and became major world powers. However the Portuguese empire lasted until the 20th century. After the Revolution of April 25, 1974, all the colonies finally became independent countries. Portugal is back to its European territory, but still has important connexions to those countries and is forever marked by this universal adventure. Having sailed the oceans and met so many different peoples perhaps explain the tolerant and welcoming character of the Portuguese people and certainly left very important influences in the Portuguese art and culture.



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astincolloquium2016@gmail.com

actuaries.org/lisbon2016

# ST. JOHN'S COLLOQUIUM

ST. JOHN'S, NEWFOUNDLAND, CANADA  
JUNE 27 - 29, 2016

JOINTLY HOSTED BY  
THE INTERNATIONAL PENSION  
AND EMPLOYEE BENEFITS  
LAWYERS ASSOCIATION  
(IPEBLA), IACA, PBSS AND  
IAAHS



## 'OUR COMPLEX AND INTER-LINKED WORLD'

Please join your Actuarial and Legal colleagues at this international meeting in St. John's, Newfoundland.

The St. John's 2016 Colloquium is being held with the Canadian Institute of Actuaries (CIA) spring meeting. Joint CIA-Colloquium activities are planned including joint plenary sessions and a joint pub-crawl. CIA attendees are invited to join us for the program meetings at the Monday night Gala dinner.

We look forward to hearing from you and to seeing you in St. John's, Newfoundland.

### International Association of Consulting Actuaries (IACA)

- Setting the scope and the effective management of cross discipline projects
- Measuring and managing risk
- The complexities of advising global companies

### International Actuarial Association Health Section (IAAHS)

- Trends and opportunities of healthcare and digital innovations across the globe
- Issues in healthcare such as Smart Analytics, Big Data, Genomics, Telemedicine and other Disease Management intervention
- Managing costs, solvency and financial soundness of public and private healthcare systems

### Pension, Benefits and Social Security Section (PBSS)

- Designing default funds for defined contribution plans
- The latest trends in de-accumulation strategies
- Managing state pension provision with an aging population

### International Pension & Employee Benefits Lawyers Association (IPEBLA)

- Considerations in changing pension and benefit commitments
- Changes in the landscape of pension plan design
- Pension de-risking developments and strategies
- Hot pension litigation trends around the globe

### General Professional and Ethical Topics

- Conflicts of Interest
- Whistleblowing
- Cyber Security



Michael Woodford, former CEO of Olympus Corporation, will take the attendees through the riveting experience of whistleblowing on his own company, and the lessons on governance and crisis management.

Please visit the St. John's Colloquium website for more details.  
[actuaries.org/stjohns2016](http://actuaries.org/stjohns2016)

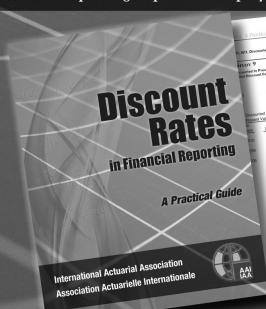




# Discount Rates in Financial Reporting

*A Practical Guide*

The time value of money is significant to economics and in turn to the current value of projected cash flows. Recent decades have seen a growth of knowledge and available information in the areas of finance and capital markets. There still remains a need for more widespread understanding of the important aspects, from a conceptual perspective and the practical techniques relating to the discounting process in actuarial practice. The primary areas of application include financial reporting for insurance contracts and the financial reporting of pension/employee benefit plans. The objective of this monograph is to help fill this void.



**Discount Rates**  
in Financial Reporting  
*A Practical Guide*

International Actuarial Association  
Association Actuarielle Internationale

**Gas Table I - 10**

Years	1	2	3	4	5	6	7	8	9	10
0.05	0.952	0.899	0.842	0.785	0.731	0.679	0.627	0.576	0.526	0.477
0.06	0.905	0.835	0.765	0.693	0.623	0.553	0.482	0.412	0.343	0.275
0.07	0.857	0.779	0.697	0.611	0.521	0.431	0.340	0.250	0.160	0.067
0.08	0.808	0.718	0.619	0.510	0.401	0.292	0.183	0.073	-0.050	-0.200
0.09	0.759	0.660	0.554	0.438	0.317	0.191	0.056	-0.180	-0.420	-0.660
0.10	0.711	0.598	0.481	0.353	0.219	0.078	-0.190	-0.570	-0.950	-1.330
0.11	0.663	0.529	0.398	0.257	0.107	-0.080	-0.460	-0.840	-1.220	-1.600
0.12	0.615	0.459	0.299	0.145	-0.040	-0.360	-0.740	-1.120	-1.500	-1.880
0.13	0.567	0.389	0.199	-0.100	-0.460	-0.840	-1.220	-1.600	-1.980	-2.360
0.14	0.519	0.319	0.099	-0.200	-0.560	-0.940	-1.320	-1.700	-2.080	-2.460
0.15	0.471	0.249	-0.009	-0.300	-0.660	-1.040	-1.420	-1.800	-2.180	-2.560
0.16	0.423	0.179	-0.199	-0.400	-0.760	-1.140	-1.520	-1.900	-2.280	-2.660
0.17	0.375	0.109	-0.398	-0.500	-0.860	-1.240	-1.620	-2.000	-2.380	-2.760
0.18	0.327	0.039	-0.597	-0.600	-0.900	-1.280	-1.660	-2.040	-2.420	-2.800
0.19	0.279	-0.120	-0.796	-0.700	-0.900	-1.220	-1.500	-1.880	-2.260	-2.640
0.20	0.231	-0.290	-0.995	-0.800	-0.900	-1.140	-1.420	-1.700	-2.080	-2.460
0.21	0.183	-0.460	-1.194	-0.900	-0.900	-1.120	-1.300	-1.580	-1.960	-2.340
0.22	0.135	-0.630	-1.393	-0.900	-0.900	-1.040	-1.220	-1.400	-1.780	-2.160
0.23	0.087	-0.800	-1.592	-0.900	-0.900	-0.960	-1.140	-1.320	-1.600	-1.980
0.24	0.039	-0.970	-1.791	-0.900	-0.900	-0.880	-0.960	-1.140	-1.420	-1.700
0.25	-0.011	-1.160	-1.990	-0.900	-0.900	-0.860	-0.940	-1.120	-1.400	-1.680

**Gas Table I - 20**

Years	1	2	3	4	5	6	7	8	9	10
0.05	0.952	0.899	0.842	0.785	0.731	0.679	0.627	0.576	0.526	0.477
0.06	0.857	0.779	0.697	0.611	0.521	0.431	0.340	0.250	0.160	0.067
0.07	0.761	0.660	0.554	0.438	0.317	0.191	0.056	-0.180	-0.420	-0.660
0.08	0.663	0.529	0.389	0.257	0.107	-0.080	-0.360	-0.740	-1.120	-1.500
0.09	0.567	0.389	0.199	-0.100	-0.460	-0.840	-1.220	-1.600	-1.980	-2.360
0.10	0.471	0.249	-0.009	-0.300	-0.660	-1.040	-1.420	-1.800	-2.180	-2.560
0.11	0.375	-0.120	-0.597	-0.600	-0.900	-1.240	-1.620	-2.000	-2.380	-2.760
0.12	0.279	-0.290	-0.995	-0.800	-0.900	-1.140	-1.520	-1.900	-2.280	-2.660
0.13	0.183	-0.460	-1.393	-0.900	-0.900	-1.040	-1.220	-1.400	-1.780	-2.160
0.14	0.087	-0.630	-1.791	-0.900	-0.900	-0.960	-1.140	-1.320	-1.600	-1.980
0.15	-0.011	-0.800	-2.189	-0.900	-0.900	-0.880	-0.960	-1.140	-1.420	-1.700
0.16	-0.157	-0.970	-2.587	-0.900	-0.900	-0.860	-0.940	-1.120	-1.400	-1.680
0.17	-0.301	-1.140	-2.985	-0.900	-0.900	-0.820	-0.900	-1.080	-1.360	-1.640
0.18	-0.445	-1.310	-3.383	-0.900	-0.900	-0.740	-0.820	-0.900	-1.180	-1.460
0.19	-0.589	-1.480	-3.781	-0.900	-0.900	-0.660	-0.740	-0.820	-1.000	-1.280
0.20	-0.733	-1.650	-4.179	-0.900	-0.900	-0.580	-0.660	-0.740	-0.920	-1.100
0.21	-0.877	-1.820	-4.577	-0.900	-0.900	-0.500	-0.580	-0.660	-0.840	-1.020
0.22	-1.021	-1.990	-4.975	-0.900	-0.900	-0.420	-0.500	-0.580	-0.760	-0.940
0.23	-1.165	-2.160	-5.373	-0.900	-0.900	-0.340	-0.420	-0.500	-0.680	-0.860
0.24	-1.309	-2.330	-5.771	-0.900	-0.900	-0.260	-0.340	-0.420	-0.560	-0.740
0.25	-1.453	-2.500	-6.169	-0.900	-0.900	-0.180	-0.260	-0.340	-0.440	-0.620

**Gas Table I - 30**

Years	1	2	3	4	5	6	7	8	9	10
0.05	0.952	0.899	0.842	0.785	0.731	0.679	0.627	0.576	0.526	0.477
0.06	0.857	0.779	0.697	0.611	0.521	0.431	0.340	0.250	0.160	0.067
0.07	0.761	0.660	0.554	0.438	0.317	0.191	0.056	-0.180	-0.420	-0.660
0.08	0.663	0.529	0.389	0.257	0.107	-0.080	-0.360	-0.740	-1.120	-1.500
0.09	0.567	0.389	0.199	-0.100	-0.460	-0.840	-1.220	-1.600	-1.980	-2.360
0.10	0.471	0.249	-0.009	-0.300	-0.660	-1.040	-1.420	-1.800	-2.180	-2.560
0.11	0.375	-0.120	-0.597	-0.600	-0.900	-1.240	-1.620	-2.000	-2.380	-2.760
0.12	0.279	-0.290	-0.995	-0.800	-0.900	-1.140	-1.520	-1.900	-2.280	-2.660
0.13	0.183	-0.460	-1.393	-0.900	-0.900	-1.040	-1.220	-1.400	-1.780	-2.160
0.14	0.087	-0.630	-1.791	-0.900	-0.900	-0.960	-1.140	-1.320	-1.600	-1.980
0.15	-0.011	-0.800	-2.189	-0.900	-0.900	-0.880	-0.960	-1.140	-1.420	-1.700
0.16	-0.157	-0.970	-2.587	-0.900	-0.900	-0.860	-0.940	-1.120	-1.400	-1.680
0.17	-0.301	-1.140	-2.985	-0.900	-0.900	-0.820	-0.900	-1.080	-1.360	-1.640
0.18	-0.445	-1.310	-3.383	-0.900	-0.900	-0.740	-0.820	-0.900	-1.180	-1.460
0.19	-0.589	-1.480	-3.781	-0.900	-0.900	-0.660	-0.740	-0.820	-1.000	-1.280
0.20	-0.733	-1.650	-4.179	-0.900	-0.900	-0.580	-0.660	-0.740	-0.920	-1.100
0.21	-0.877	-1.820	-4.577	-0.900	-0.900	-0.500	-0.580	-0.660	-0.840	-1.020
0.22	-1.021	-1.990	-4.975	-0.900	-0.900	-0.420	-0.500	-0.580	-0.760	-0.940
0.23	-1.165	-2.160	-5.373	-0.900	-0.900	-0.340	-0.420	-0.500	-0.680	-0.860
0.24	-1.309	-2.330	-5.771	-0.900	-0.900	-0.260	-0.340	-0.420	-0.560	-0.740
0.25	-1.453	-2.500	-6.169	-0.900	-0.900	-0.180	-0.260	-0.340	-0.440	-0.620

The book is now available for purchase.  
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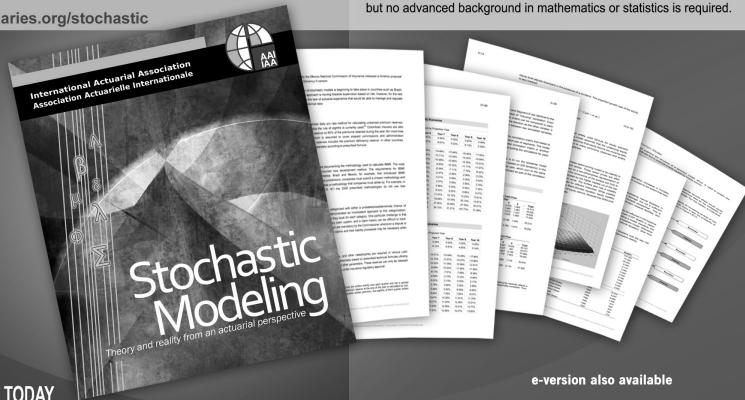
# Stochastic Modeling

Theory and Reality from an Actuarial Perspective

The second print is now available for purchase. The all-inclusive cost, which includes shipping and handling, varies by region and number of copies ordered.

[www.actuaries.org/stochastic](http://www.actuaries.org/stochastic)

A guide for practitioners interested in understanding this important emerging field, *Stochastic Modeling - Theory and Reality from an Actuarial Perspective* presents the mathematical and statistical framework necessary to develop stochastic models in any setting (insurance or otherwise). Sufficient mathematical detail is presented but no advanced background in mathematics or statistics is required.



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**NOTES FOR CONTRIBUTORS**

**AIMS AND SCOPE**

*ASTIN Bulletin* was founded in 1958 as a journal providing an outlet for actuarial studies in non-life insurance. In the late 1980's the journal extended its scope to encompass the study of financial risk in insurance (AFIR). In 2007 the journal was established as the journal of the International Actuarial Association (IAA) and encompasses all of the scientific sections of the IAA.

*ASTIN Bulletin* publishes papers that are relevant to any branch of actuarial science and insurance mathematics. Papers should be quantitative and scientific in nature, and might draw on theory and methods developed in any branch of the mathematical sciences including actuarial mathematics, statistics, probability, financial mathematics and econometrics.

The journal welcomes papers that present significant and original theoretical developments and papers that present significant and original applications of mathematical, statistical or econometric theory to problems arising in insurance, pensions and finance. We especially welcome papers opening up new areas of interest to the international actuarial profession as well as papers that describe open problems that have arisen in practice.

**SUBMISSIONS**

Papers for possible publication in the *ASTIN Bulletin* – The Journal of the International Actuarial Association should be submitted online at: <http://mc.manuscriptcentral.com/astin>. Submission of a paper is held to imply that it contains original unpublished work and is not being submitted for publication elsewhere. Receipt of the paper will be confirmed and followed by a refereeing process which will be handled by one of the editors. The editors aim to complete the refereeing of a submission in around three months. The role of a referee is to assess the quality of the academic content of the paper. If a paper is sufficiently badly written to an extent that prevents a referee from forming a proper view of the paper's scientific content, then the paper will be returned to the author unrefereed.

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Before a manuscript can be published it must conform to the style of *ASTIN Bulletin*, a summary of the key points of which is listed below. The comprehensive Notes of Contributors document can be obtained from <http://journals.cambridge.org/asb/contributors>.

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- Papers should be written in English or French. It is not the job of the editors, the referees or the publisher to improve the use of English or French in the paper; it is up to the authors to ensure that the language, spelling and grammar are of a high quality prior to submission.
- Authors intending to submit longer papers (e.g. exceeding 30 pages) are advised to consider splitting their contribution into two or more shorter contributions.
- The first page of each paper should start with the title, the name(s) of the author(s), an abstract and a list of keywords. An institutional affiliation can be placed between the name(s) of the author(s) and the abstract.
- Footnotes should be avoided as far as possible.

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On the title page, please provide the full name, affiliation, email and postal address of at least one author. Where the family name may be ambiguous (e.g. a double name), please indicate this clearly. For joint authored papers, please indicate the lead corresponding author and provide a contact telephone number.

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References should be arranged alphabetically, and for the same author chronologically. Use a, b, c etc. to separate publications of the same author in the same year. For journal references give author(s), year, title, journal (in italics), volume (in boldface), and pages. For book references give author(s), year, title (in italics), publisher, and city.

# ASTIN Bulletin

Volume 46

Issue 1

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