This English translation of "2018 Annual Report" of the Institute of Actuaries of Japan is an unofficial translation. Only its original Japanese texts have effect, and the translation is to be used solely as reference material to aid in the understanding of the original one.

この「2018年度事業報告」の翻訳は公定訳ではありません。効力を有するのは日本語の資料であり、翻訳はあくまでその理解を助けるための参考資料です。

## 2018 Annual Report

From April 1, 2018 to March 31, 2019

## 1. Matters concerning Annual General Meeting of Members

The General Meeting of Members was held on June 19, 2018 at the main conference room of the Institute of Actuaries of Japan, and

"Report on a summary of business activities in 2017"

was presented, and the following proposal was put before the meeting and approved as proposed:

Item 1: 2017 Approval of a Balance Sheet and Net Assets Variation Statement as well as Inventory of Properties

#### 2. Movement of members

Movements of members during the current year were as follows: for corporate members, 2 members were newly admitted; for individual members, 293 members were newly admitted, and 240 members withdrew from the IAJ. The number of members as of the end of March 2019 is as shown in the table below.

Fellows	1,762	persons
Associates	1,334	persons
Students	2,074	persons
Semi-total	5,170	persons
Corporate members	109	corporations
Total	5,279	persons/corporations

## 3. Business report

## [A. Related to examination]

## (A1) Implementation of qualification examination

A 3-day qualification examination was held from December 10 to 12, 2018 in Tokyo (at TOC Gotanda) and Osaka (at Temma Training Center) and the successful examinees were announced on February 14, 2019.

The total number of examination subjects for the primary examination was 3,741 subjects and the total number of subjects passed was 681 subjects. There were 133 examinees who passed all basic subjects.

Primary examination (Basic subjects)	Mathematics	Life Insurance Mathematics	Non-life Insurance Mathematics	Pension Mathematics	Accounting, Economics and Investment Theory
Number of examinees	1,139	719	652	542	689
Number of successful examinees	148	92	153	191	97
Passing Rates	13.0%	12.8%	23.5%	35.2%	14.1%

The total number of examination subjects for the secondary examination was 1,191 subjects and the total number of subjects passed was 168 subjects. There were 83 examinees who passed all the subjects.

Secondary examination (Advanced subject)	Life Insurance	Life Insurance	Non-life Insurance 1	Non-life Insurance 2	Pension 1	Pension 2
Number of examinees	360	347	157	131	85	111
Number of successful examinees	53	47	17	20	12	19
Passing Rates	14.7%	13.5%	10.8%	15.3%	14.1%	17.1%

## (A2) Implementation of CERA examination

The CERA examination was held on September 20, 2018 in Tokyo (at TKP Tokyo Station Nihonbashi Conference Center) and the successful examinees were announced on January 21, 2019. There were 45 examinees and 9 examinees passed the examination (Passing Rates 20 %).

## (A3) Revision of textbooks

- ① In October 2018, the main items of "Non-life Insurance" to be revised in the future were announced on the HP due to legal amendments and errors in the description.
- ② In February 2019, "Pension" was revised and revisions such as defined benefit corporate pension and defined contribution pension law were reflected.

## [B. Related to education, training and research presentation]

# (B1) Implementation of actuary courses

The actuary courses were offered for a period from May 9, 2018 to October 15, 2018. Details are as follows.

	Subject	Number of students
Basic courses (12 Subjects)	<ul> <li>Probability</li> <li>Probability Exercise</li> <li>Statistics Exercise</li> <li>Life Insurance Mathematics</li> <li>Non-life Insurance Mathematics</li> <li>Pension Mathematics</li> <li>Accounting</li> <li>Economics</li> <li>Investment Theory</li> <li>Life table</li> </ul>	146 people
Intermediate courses (7 Subjects)	<ul> <li>Risk Selection Theory</li> <li>Population Theory</li> <li>Insurance Supervision Law</li> <li>Pension Practice Regulations</li> <li>Finance Mathematics</li> <li>Risk Management Theory</li> </ul>	48 people

The additional actuary exercise courses were offered for a period from September 27, 2018 to November 30, 2018. Details are as follows.

	Subject (Number of students)	
Additional actuary	Life Insurance Mathematics Exercise (31 people)	
exercise courses	• Non-life Insurance Mathematics Exercise (35 people)	
	• Pension Mathematics Exercise (32 people)	
	• Modeling Exercise (20 people)	

Kansai Committee actuary courses were offered for a period from August to October 2018. 5 people took the life insurance mathematics course and 4 people took the pension mathematics course.

Also in July 2018, the Actuary Course Division held a meeting with the lecturers to report the IAA education syllabus revision and exchange opinions on the management of the courses.

## (B2) Holding of Annual Meeting

A 2-day Annual Meeting was held on November 8 and 9, 2018 at Keidanren Kaikan and Station Conference Tokyo. The following special lectures were held in this meeting.

" The state of things on international & internal financial markets"

By Mr. Tatsuo Yamazaki

(Past-Vice Minister of Finance for International Affairs, Ministry of Finance)

"The future chronology in Japan – What will happen in Japan with population decline?"

By Mr. Masashi Kawai (Journalist, An editorial writer at The Sankei Shimbun)

"The current situation and issue of automatic driving system development"

By Mr. Masao Fukushima (NISSAN Automotive Technology Co., LTD.)

On the second day, "Open Discussion Forum" was held, and discussions in English were held with foreign actuaries. Ms. Rebecca Deegan from IFoA (South-East Asia Representative) gave a presentation on the IFoA exams and education systems.

Also, 17 papers were presented, 10 presentations and 6 panel discussions were held.

## (B3) Holding of IT Annual Meeting

A 2-day IT Annual Meeting was held on January 24 and 25, 2019 at Mitsui Life Insurance Co., Ltd. (Otemachi Nomura Building). The following special lecture was held in this meeting.

"Workforce of the Future "

By Mr. Ryosuke Sasaki (PwC Consulting)

A presentation by Latest IT Technology Research & Study Team, "How to utilize the latest IT technology -Learn from overseas precedents-" was made and IT Study Groups (1st to 6th) conducted activity reports.

# (B4) Holding of regular meetings

We held a total of 11 regular meetings in FY2018. Details are as follows.

1 <sup>st</sup>	History of Capital Regulation and	Mr.Masaaki Shigehara
Jul. 27, 2018	Recent Issues	(Vice-Chair, IAA Insurance
[Risk Management]		Regulation Committee / Dai-
		Ichi Life Research Institute Inc.)
	Economic-Based Capital	Mr. Jim Dallas
	Requirements	(RGA)
	~North America Updates	
2 <sup>nd</sup>	How Actuaries and Data Scientists	Mr. Xavier Conort
【Triton Lecture】	could learn from each other	Mr. Colin Priest
Sep.4, 2018	~AI and Humans: Synergies in	(DataRobot)
[Data Science]	Insurance	
3 <sup>rd</sup>	IFRS 17 and Reinsurance	Mr. Peter Nowell
Sep. 12, 2018		(SCOR Global Life SE)
[Accounting Standard]		
4 <sup>th</sup>	Precision Medicine	Mr. John A. O'Brien
Oct. 30, 2018		(Gen Re)
[Medicine]		

Sth   % Joint seminar with Professionalism Training   (Continuing Professional Development)   (Reference to (B9) ①)				
Professionalism   Chit   Asset allocation and ALM using an economic based approach   Mr. David Redfern (Moody's Analytics)	5 <sup>th</sup>		n Training	
Asset allocation and ALM using an economic based approach   Mr. David Redfern (Moody's Analytics)	Nov. 15, 2018	(Continuing Professional Development) (Reference to (B9) ①)		
Nov. 27, 2018 [Risk Management]  7th	[Professionalism]			
[Risk Management]  7th Actuary & Data Science [Special Lecture: Data science on accounting]  [Data Science]  *Other lectures & presentations: - Joint work of IAJ Joint Industry-Academic Committee & Shimizu Labo. at Fundamental Science & Engineering, Waseda Universitiy - Technology of Data Science - Actuaries' role in Data Science  8th Triton Lecture] Jan. 23, 2019 [Others]  9th Introduction to Statistical Inference of Causality from Observational [Data Science]  Peb. 13, 2019 [Data Science]  Actuarial Mathematics & Statistical [Triton Lecture] Actuarial Mathematics & Statistical [Triton Lecture] The intellectual property rights that you should note at the time of writing and the methods to clear  Of Causality from Observational [Triton Lecture] Takashi Isozaki, Ph.D. (Sony Computer Science Laboratories, Inc.)  Mr. Yasutaka Shimizu (Professor, Faculty of Science and Engineering, Waseda University)  11th The Laws of Robotics and Artificial Intelligence Tokyo Graduate Schools for	6 <sup>th</sup>	Asset allocation and ALM using an	Mr. David Redfern	
Actuary & Data Science   Special Lecture: Data science on accounting   Tother lectures & presentations:   Joint work of IAJ Joint Industry-Academic Committee & Shimizu Labo. at Fundamental Science & Engineering, Waseda Universitiy   Technology of Data Science   Actuaries' role in Data Science	Nov. 27, 2018	economic based approach	(Moody's Analytics)	
[Holiday Symposium] Dec. 22, 2018 [Data Science]  *Other lectures & presentations:     Joint work of IAJ Joint Industry-     Academic Committee & Shimizu     Labo. at Fundamental Science &     Engineering, Waseda Universitiy     Technology of Data Science     Actuaries' role in Data Science  *Actuaries' role in Data Science  The intellectual property rights that you should note at the time of writing and the methods to clear  [Others]  9th     Introduction to Statistical Inference of Causality from Observational [Data Science]  Data  Actuarial Mathematics & Statistical [Triton Lecture]  Mr. Hiroyasu Kageshima (Ushijima & Partners, Attorneys-at-Law)  (Sony Computer Science Laboratories, Inc.)  Mr. Yasutaka Shimizu (Professor, Faculty of Science and Engineering, Waseda University)  11th     The Laws of Robotics and Artificial Intelligence  Tokyo Graduate Schools for	[Risk Management]			
Dec. 22, 2018 [Data Science]  *Other lectures & presentations:     Joint work of IAJ Joint Industry- Academic Committee & Shimizu Labo. at Fundamental Science & Engineering, Waseda Universitiy     Technology of Data Science     Actuaries' role in Data Science  The intellectual property rights that you should note at the time of writing and the methods to clear [Others]  9th Introduction to Statistical Inference of Causality from Observational [Data Science]  Data  Actuarial Mathematics & Statistical [Triton Lecture]  Method, and their meaning  [Actuarial Mathematics]  11th The Laws of Robotics and Mar. 12, 2019 [Data Science]  Tackshi Isozaki, Ph.D. (Sony Computer Science Laboratories, Inc.)  Mr. Yasutaka Shimizu (Professor, Faculty of Science and Engineering, Waseda University)  Mr. George Shishido (Professor, The University of Tokyo Graduate Schools for	7 <sup>th</sup>	Actuary & Data Science	Mr. Ryuichi Yaguchi	
[Data Science]  *Other lectures & presentations:     Joint work of IAJ Joint Industry- Academic Committee & Shimizu Labo. at Fundamental Science & Engineering, Waseda Universitiy     Technology of Data Science     Actuaries' role in Data Science  The intellectual property rights that you should note at the time of Writing and the methods to clear [Others]  The Introduction to Statistical Inference of Causality from Observational [Data Science]  Introduction to Statistical Inference Takashi Isozaki, Ph.D. (Sony Computer Science Laboratories, Inc.)  Mr. Yasutaka Shimizu (Professor, Faculty of Science and Engineering, Waseda University)  The Laws of Robotics and Artificial Intelligence  Tokyo Graduate Schools for	[Holiday Symposium]	[Special Lecture: Data science on	Mr. Naoto Ichihara	
- Joint work of IAJ Joint Industry- Academic Committee & Shimizu Labo. at Fundamental Science & Engineering, Waseda Universitiy - Technology of Data Science - Actuaries' role in Data Science  8th The intellectual property rights that you should note at the time of Ushijima & Partners, Attorneys-at-Law)  [Others]  9th Introduction to Statistical Inference Feb. 13, 2019 [Data Science] Data Introduction to Statistical Inference of Causality from Observational [Data Science] Data Laboratories, Inc.)  Mr. Yasutaka Shimizu (Professor, Faculty of Science and Engineering, Waseda University)  11th The Laws of Robotics and Mr. George Shishido (Professor, The University of Tokyo Graduate Schools for	Dec. 22, 2018	accounting]	(Ernst & Young ShinNihon	
Academic Committee & Shimizu Labo. at Fundamental Science & Engineering, Waseda Universitiy • Technology of Data Science • Actuaries' role in Data Science  The intellectual property rights that you should note at the time of Jan. 23, 2019 [Others]  9th Introduction to Statistical Inference of Causality from Observational [Data Science]  Introduction to Statistical Inference of Causality from Observational [Triton Lecture]  Actuarial Mathematics & Statistical Interduction to Statistical Inference of Causality from Observational [Triton Lecture]  Method, and their meaning  Actuarial Mathematics & Statistical Intelligence  Introduction to Statistical Inference of Causality from Observational (Sony Computer Science Laboratories, Inc.)  Mr. Yasutaka Shimizu (Professor, Faculty of Science and Engineering, Waseda University)  Ith The Laws of Robotics and Artificial Intelligence (Professor, The University of Tokyo Graduate Schools for	[Data Science]	*Other lectures & presentations:	LLC)	
Labo. at Fundamental Science & Engineering, Waseda Universitiy  Technology of Data Science  Actuaries' role in Data Science  The intellectual property rights that you should note at the time of writing and the methods to clear  [Triton Lecture]  Jan. 23, 2019  [Others]  9th  Introduction to Statistical Inference of Causality from Observational [Data Science]  Data  Introduction to Statistical  [Triton Lecture]  Actuarial Mathematics & Statistical  [Triton Lecture]  Method, and their meaning  [Actuarial Mathematics]  The Laws of Robotics and Mr. George Shishido Mar. 12, 2019  [Data Science]  Takashi Isozaki, Ph.D.  (Sony Computer Science Laboratories, Inc.)  Mr. Yasutaka Shimizu  (Professor, Faculty of Science and Engineering, Waseda University)  The Laws of Robotics and Artificial Intelligence  [Professor, The University of Tokyo Graduate Schools for		· Joint work of IAJ Joint Industry-		
Engineering, Waseda Universitiy  Technology of Data Science  Actuaries' role in Data Science  The intellectual property rights that you should note at the time of writing and the methods to clear  [Others]  9th Introduction to Statistical Inference of Causality from Observational [Data Science]  Data Actuarial Mathematics & Statistical Inference of Causality from Observational [Triton Lecture]  [Triton Lecture] Method, and their meaning (Professor, Faculty of Science and Engineering, Waseda University)  11th The Laws of Robotics and Mr. George Shishido (Professor, The University of Tokyo Graduate Schools for		Academic Committee & Shimizu		
. Technology of Data Science . Actuaries' role in Data Science  8th The intellectual property rights that you should note at the time of (Ushijima & Partners, Attorneys-at-Law)  [Others]  9th Introduction to Statistical Inference of Causality from Observational Data Laboratories, Inc.)  10th Actuarial Mathematics & Statistical Mr. Yasutaka Shimizu (Professor, Faculty of Science and Engineering, Waseda University)  11th The Laws of Robotics and Mar. 12, 2019 [Data Science]  Pata Science] The Laws of Robotics and Artificial Intelligence (Professor, The University of Tokyo Graduate Schools for		Labo. at Fundamental Science &		
**Actuaries' role in Data Science  8th The intellectual property rights that you should note at the time of (Ushijima & Partners, Attorneys-at-Law)  [Others] Writing and the methods to clear Of Causality from Observational (Sony Computer Science Laboratories, Inc.)  10th Actuarial Mathematics & Statistical Mr. Yasutaka Shimizu (Professor, Faculty of Science and Engineering, Waseda University)  11th The Laws of Robotics and Mr. George Shishido (Professor, The University of Tokyo Graduate Schools for		Engineering, Waseda Universitiy		
The intellectual property rights that you should note at the time of (Ushijima & Partners, Attorneys-at-Law)  [Others]  9th Introduction to Statistical Inference of Causality from Observational [Data Science]  [Data Science]  Introduction to Statistical Inference of Causality from Observational [Data Science]  Introduction to Statistical Inference of Causality from Observational [Sony Computer Science Laboratories, Inc.)  Introduction to Statistical Inference of Causality from Observational (Sony Computer Science Laboratories, Inc.)  Introduction to Statistical Inference of Causality from Observational (Sony Computer Science Laboratories, Inc.)  Introduction to Statistical Inference of Causality from Observational (Sony Computer Science Laboratories, Inc.)  Introduction to Statistical Inference of Causality from Observational (Sony Computer Science Laboratories, Inc.)  Introduction to Statistical Inference of Causality from Observational (Sony Computer Science Laboratories, Inc.)  Introduction to Statistical Inference of Causality from Observational (Sony Computer Science and Engineering, Waseda University)  Introduction to Statistical Inference of Causality from Observational (Sony Computer Science and Engineering, Waseda University)  Introduction to Statistical Inference of Causality from Observational (Sony Computer Science and Engineering, Waseda University)  Introduction to Statistical Inference of Causality from Observational (Sony Computer Science and Engineering, Waseda University)  Introduction to Statistical Inference of Causality from Observational (Sony Computer Science and Engineering, Waseda University)  Introduction to Statistical Inference of Causality from Observational (Sony Computer Science and Engineering, Waseda University)		· Technology of Data Science		
[Triton Lecture] you should note at the time of Ushijima & Partners, Jan. 23, 2019 writing and the methods to clear  [Others]  9th Introduction to Statistical Inference of Causality from Observational Data  [Data Science] Data  [Triton Lecture] Method, and their meaning  [Actuarial Mathematics] Mr. Yasutaka Shimizu  [Professor, Faculty of Science and Engineering, Waseda University)  11th Mr. George Shishido  Mar. 12, 2019 Artificial Intelligence  [Data Science] Tokyo Graduate Schools for		· Actuaries' role in Data Science		
Jan. 23, 2019 writing and the methods to clear  [Others]  9th Introduction to Statistical Inference Feb. 13, 2019 of Causality from Observational [Data Science] Data Laboratories, Inc.)  10th Actuarial Mathematics & Statistical [Triton Lecture] Method, and their meaning Feb. 27, 2019 [Actuarial Mathematics]  11th The Laws of Robotics and Mr. George Shishido Mar. 12, 2019 [Data Science] Mr. George Shishido	8 <sup>th</sup>	The intellectual property rights that	Mr. Hiroyasu Kageshima	
[Others]  9th Introduction to Statistical Inference Feb. 13, 2019 [Data Science]  10th Actuarial Mathematics & Statistical [Triton Lecture] Feb. 27, 2019 [Actuarial Mathematics]  11th The Laws of Robotics and Mar. 12, 2019 [Data Science]  Mintroduction to Statistical Inference (Sony Computer Science Laboratories, Inc.)  Mr. Yasutaka Shimizu (Professor, Faculty of Science and Engineering, Waseda University)  The Laws of Robotics and Mr. George Shishido (Professor, The University of Tokyo Graduate Schools for	【Triton Lecture】	you should note at the time of	(Ushijima & Partners,	
9th Introduction to Statistical Inference of Causality from Observational (Sony Computer Science Laboratories, Inc.)  10th Actuarial Mathematics & Statistical Mr. Yasutaka Shimizu (Professor, Faculty of Science and Engineering, Waseda University)  11th The Laws of Robotics and Mr. George Shishido (Professor, The University of Tokyo Graduate Schools for	Jan. 23, 2019	writing and the methods to clear	Attorneys-at-Law)	
Feb. 13, 2019 of Causality from Observational [Data Science]  10th	[Others]			
[Data Science] Data Laboratories, Inc.)  10 <sup>th</sup> Actuarial Mathematics & Statistical Mr. Yasutaka Shimizu  [Triton Lecture] Method, and their meaning (Professor, Faculty of Science and Engineering, Waseda  [Actuarial Mathematics] University)  11 <sup>th</sup> The Laws of Robotics and Mr. George Shishido  Mar. 12, 2019 Artificial Intelligence (Professor, The University of Tokyo Graduate Schools for	9 <sup>th</sup>	Introduction to Statistical Inference	Takashi Isozaki, Ph.D.	
10 <sup>th</sup> Actuarial Mathematics & Statistical Mr. Yasutaka Shimizu [Triton Lecture] Method, and their meaning (Professor, Faculty of Science and Engineering, Waseda [Actuarial Mathematics] University)  11 <sup>th</sup> The Laws of Robotics and Mr. George Shishido Mar. 12, 2019 Artificial Intelligence (Professor, The University of Tokyo Graduate Schools for	Feb. 13, 2019	of Causality from Observational	(Sony Computer Science	
[Triton Lecture] Method, and their meaning (Professor, Faculty of Science and Engineering, Waseda University)  11th The Laws of Robotics and Mr. George Shishido Mar. 12, 2019 Artificial Intelligence (Professor, The University of Tokyo Graduate Schools for	[Data Science]	Data	Laboratories, Inc.)	
Feb. 27, 2019and Engineering, Waseda[Actuarial Mathematics]University)11thThe Laws of Robotics and Mar. 12, 2019Mr. George Shishido (Professor, The University of Tokyo Graduate Schools for	10 <sup>th</sup>	Actuarial Mathematics & Statistical	Mr. Yasutaka Shimizu	
[Actuarial Mathematics] University)  11 <sup>th</sup> The Laws of Robotics and Mr. George Shishido Mar. 12, 2019 Artificial Intelligence (Professor, The University of [Data Science] Tokyo Graduate Schools for	【Triton Lecture】	Method, and their meaning	(Professor, Faculty of Science	
11th The Laws of Robotics and Mr. George Shishido Mar. 12, 2019 Artificial Intelligence (Professor, The University of Tokyo Graduate Schools for	Feb. 27, 2019		and Engineering, Waseda	
Mar. 12, 2019 Artificial Intelligence (Professor, The University of Tokyo Graduate Schools for	[Actuarial Mathematics]		University)	
[Data Science] Tokyo Graduate Schools for	11 <sup>th</sup>	The Laws of Robotics and	Mr. George Shishido	
	Mar. 12, 2019	Artificial Intelligence	(Professor, The University of	
Law and Politics)	[Data Science]		Tokyo Graduate Schools for	
1			Law and Politics)	

<sup>※</sup>The 2<sup>nd</sup>, 8<sup>th</sup> and 10<sup>th</sup> were held in small-scale at the main conference room of the IAJ as their lectures' fields were specific.

# (B5) Holding of Kansai Committee regular meetings

We held a total of 4 Kansai Committee regular meetings in FY2018. Details are as follows.

1 <sup>st</sup>	Mechanism of creating values ∼how	Mr. Hajime Takebayashi
Oct. 10, 2018	to utilize IoT & data to create new	(Omron)
[Others]	values	
2 <sup>nd</sup>	VICA Public Viewing	Mr. Shinichiro Cho
Dec. 13, 2018	$\sim$ ERM (lecture by Paul Embrechts	(Meiji Yasuda Life Insurance)
[Others]	(ETH Zurich)) $\sim$	Mr. Yosuke Fujisawa
		(Chair, ERM Committee/Swiss
		Re)
3 <sup>rd</sup>	Nankai Trough huge earthquake and	Mr. Akira Sangawa
Jan. 22, 2019	Kansai earthquake	(National Institute of Advanced
[Others]	- the Earthquakes in 21st century	Industrial Science and

<sup>\*</sup>The 7th was co-sponsored by Graduate School of Accountancy, Waseda University, and the venue was at Okuma Small Auditorium, Waseda University.

	thinking from the history -	Technology (AIST))
4 <sup>th</sup>	2018 Report on Activities of Kansai	each sub-committee
Mar.26, 2019	Committee's Sub-committees	
[Life Insurance, Pension,		
Risk Management]		

## (B6) Holding of moonlight seminars

Moon light seminars under the following 5 themes were held from September 2018 to March 2019.

Trends in economic value-based solvency	Mr. Kazuyuki Doi
regulation, focusing on Insurance Capital	Mr. Tomonori Asada
Standards (ICS), and its impact on Japanese	(Willis Towers Watson)
insurance companies	
Practice of predictive modeling	Mr. Hirokazu Iwasawa
	ASTIN-related Study Group members
Application of Python in actuarial practices	Fumito Hamamura (PricewaterhouseCoopers
	Arata LLC / Assurance - Insurance)
	Yasutaka Matsuda (PricewaterhouseCoopers
	Aarata LLC / Governance, Risk and Compliance
	Advisory)
Quick Start on Deep Learning	Mr. Yujiro Otsuka (Milliman)
Data analysis and visualization with python	Mr. Daisuke Kadowaki (KA Computing)

## (B7) Holding of Kansai Committee seminars

Kansai Committee seminarswere held on February 15, 2019 with following themes.

· · · · · · · · · · · · · · · · · · ·	8
• Future fluctuation of medical insurance (medical inflation) risk -	Graduate School of Science,
the premium revision scheme by the index method	Kyoto University,
· Index comparison in temperature derivatives	Insurance Mathematics
· Representation of Mortality Model Using State Space Model and	Seminar students
Model Selection	
· Risk analysis on long-term care insurance products	
· Issues on Current Funding Standards for Defined Benefit	
Corporate Pension and Their Response	
· A study on Application of "Recovery Theorem" to Insurance	
Products	

# (B8) Enhancement of e-learning

E-learning contents under the following were released.

- Application of "R" in actuarial works
  (Basic / life insurance / economic index / non-life insurance)
- Development process of Standard Mortality Table 2018
- · Issues paper on asset-liability management (ALM) (Revised version)
- Behavioral factors of mortality risk-Should we use the behavioral & psychological factor for the evaluation of the mortality risk?
- · Economic Scenario Generator Application to business, problem and the solution
- Predictive Analytics and Modeling of Policyholder Behavior
- The latest reform of long-term care (LTC) insurance in the German social security system
- IAA Risk book
  - IAA Risk Book Chapter 8 (Addressing the consequences of insurance groups)

- IAA Risk Book Chapter 9 (Distribution Risk)
- IAA Risk Book Chapter 10 (ORSA)
- IAA Risk Book Chapter 11 (Resolution of Insolvencies)
- IAA Risk Book Chapter 13 (Asset Liability Management)
- IAA Risk Book Chapter 14 (Financial Statements)
- IAA Risk Book Chapter 15 (Governance of Models)
- IAA Risk Book Chapter 16 (Materiality, Proportionality, Etc.)
- 2015 ERM Webinar
- · 2016 Open Discussion Forum
- Application in Predictive Modeling on Actuarial Mathematics Vol.1(Chapter 2: Linear model overview)
- Report of 2017 Annual Meeting:
  - Current situation and issues of social security in Japan from the perspective of Japans estimated population in the future
  - Emerging Risk-Aiming for risk management to fight against future unknowns-
  - Application of Predictive Modeling to Insurance Data
  - A history of introduction of Defined Ambition (DA)Plans
  - On the calculation basis used in the calculation of debt and expenses for retirement benefit accounting
- Professionalism training (Continuing Professional Development) 2018
- Report of 2018 Annual Meeting:
  - Introduction of Solvency II what happened after that
  - Economic Crisis and Risk Management-For young people who will be responsible for risk management in the future-

#### (B9) Implementation of professionalism training

① On November 15, 2018, professionalism training (Continuing Professional Development) covering the following training was offered. (co-hosted by IAJ & Graduate School of Accountancy, Waseda University)

Actuaries and their Professionalism
 Chartered Accountants and Ethics-Implications for Actuaries
 Mr. Ikuo Katayose (Resona Bank)
 Ms. Hiroko Kaneko (Professor, Graduate School of Accountancy, Waseda University

· Discussion Mr. Yosuke Fujisawa (Swiss Re)

② On February 25, 2019, professionalism training covering the following training was offered. The completion of this training is required to be approved as a Fellow.

About Professionalism
 IAA Syllabus and Professionalism
 Actuaries and Code of Conduct
 Mr. Ikuo Katayose (Resona Bank)
 Mr. Tomio Murata (Mitsui Life Insurance)
 Mr. Shinichi Nara (Meiji Yasuda Life Insurance)

· Professionalism in Life Insurance Mr. Hitoshi Watanabe (Nippon Life

Insurance)

· Professionalism in Non-life Insurance Mr. Hiromi Kaneko (Sompo Japan

Nipponkoa Insurance)

· Professionalism in Pension Mr. Akihiro Hotta (Tohmatsu LLC)

③ On February 26, 2019, training for appointed actuaries of small amount & short-term insurance was offered by FSA and IAJ at the Small Amount & Short-Term Insurance Association of Japan (SSI). IAJ dispatched Mr. Hitoshi Watanabe (Director / Professionalism Education Division in IAJ) as a lecturer of the training as a part of professionalism education.

## (B10) Implementation of CERA training

On December 7 and 8, 2018, a 2-day group workshop was held for examinees for CERA examination. The workshop contained lectures on ERM, such as the specific situation in Japan and the case studies. The completion of this training is required to be approved as CERA qualification and 15 participants completed the training.

## (B11) Holding of VICA2018 Public Viewing

In August 2018, a total 5-days workshop, "VICA2018 Public Viewing" was held for IAJ members to support their viewing of recorded video of ICA2018 Berlin programs in English at the main conference room of the IAJ. Each workshop contained 2-3 sessions and navigators for each session gave a brief commentary and discussions were made among participants.

$1^{st}$	Aug. 7,2018	Longevity/Mortality	
$2^{nd}$	Aug.31,2018	Finance (AFIR)	*schedule changed due to typhoon
$3^{rd}$	Aug.21,2018	Pension	
$4^{th}$	Aug.24,2018	ASTIN/ Data Science	
$5^{th}$	Aug.28,2018	ERM	

## (B12) Implementation of Research meeting

On January 19, 2019, in order to foster the academic aspect of young members, a research meeting was held in cooperation with the JARIP Forum as a place to learn about discussions with university researchers, etc. and how to approach academic papers. The papers written by IAJ members were used as the subject materials.

## [C. Related to investigation and research activities]

# (C1) Holding of Standard Mortality Advisory Committee meeting

At the 24th Standard Mortality Advisory Committee meeting held on October 31, 2018, it was approved to continue to use in the year 2019 the "Life Insurance Standard Life Table 2018 (for death)", "Third Sector Standard Life Table 2018" and "Life Insurance Standard Life Table 2007 (for annuity)".

## (C2) Improvement of practice standards

- ① With regard to "Actuarial Standard of Practice in relation to IAS 19 Employee Benefits", the revised draft was issued in March 2019 to reflect the IAAs r evision of ISAP3.
- With regard to "Standards for Actuarial Practice Concerning Retirement Benefits Accounting" and "Guidance for Actuarial Practice Concerning Retirement Benefits Accounting", the revised drafts were issued in March 2019 to reflect the IAS19's revision.
- 3 Necessary revisions will be made to the "Standards of Practice for Appointed Actuaries of Life Insurance Companies" in April 2019 for clarification of some of the description.
- 4 Necessary revisions will be made to the "Standards of Practice for Appointed Actuaries of Non-life Insurance Companies" in April 2019 for clarification of some of the description.

# (C3) Review of actuarial science for Life Insurance Product In February 26 and March 8, 2019, Life Insurance Product Special Review WG members cooperated with the Financial Services Agency to hold an exchange of opinions about actuarial science for life insurance products.

(C4) Response to international accounting standards and international insurance regulation
The International Accounting Standards Board (IASB) and the International Association of
Insurance Supervisors (IAIS) have been energetically reviewing international accounting
standards and international insurance regulation. The International Actuarial Association (IAA) is

carrying out contracted research and other activities as an actuarial professional group. The IAJ is actively participating in the activities of IAA committees.

#### (C5) Work for the revision of IAA educational syllabus

Corresponding to the amendment of IAA educational Syllabus and its application in 2021, IAJ have decided to consider the future qualification examination and education systems in Japan by Planning Committee, Examination and Education Planning Committee and the relative committees respectively. This year, Examination and Education Planning Committee made a comparison chart between the IAA educational Syllabus and current systems in IAJ, and the 1<sup>st</sup> questionnaire was conducted among the committee members and directors to consider the future action plan.

Upon Ms. Rebecca Deegan's visit to Japan from IFoA (South-East Asia Representative) in November 2018, a meeting with the members of Examination and Education Planning Committee was held. In the meeting, they conducted an interview with her on current status at IFoA of how to deal with IAA educational Syllabus and about e-learning.

#### (C6) Initiatives on data science

In order to help the future consideration, Planning Committee made a "Preliminary Report" on approach to data science in fiscal 2017 & 2018 and on the problem recognition and the response at present.

About application of data science techniques to actuary work, discussion sessions by young people were carried out on 8/16, 8/27, 11/13, 2/14 for the purpose of the fact-finding.

(C7) Analysis of the status of continuing education system (Continuing Professional Development)

Considering that three years have passed since the new continuing education system was introduced in fiscal 2015, a detailed analysis of the status of the continuing education system for fiscal 2017 was carried out, and the report and discussion were conducted by Examination and Education Planning Committee and the part of the report was posted on Actuary Journal No.104.

#### (C8) Activities of Committees

Each committee, division, study group, working group and project team carried out investigations, research and other activities based on the purpose and mission set at the beginning of the fiscal year. The status of their activities was posted on IAJ web sites. The activities that were put together into investigation and research results were published on the IAJ's member-only web page and/or in supplementary volumes of bulletins, etc.

## [D. Expression of Opinions]

- (D1) Voting at IAA Council (including electronic voting)
  - ① In April 2018, voted for the approval of Strategic Action Plan (SAP) for ISAPs etc.
  - ② In May 2018, voted for the approval of all the topics at the IAA council meeting in Berlin.
  - 3 In September 2018, voted for the approval of new IAA membership fee paying mechanism for full member associations, etc.
  - ④ In November 2018, voted for the approval of all the topics at the IAA council meeting in Mexico.
- (D2) In June 2018, the IAJ submitted its opinions to IAA on the exposure draft of ISAP4 after studies by the relative committees.

### [E. Related to International Activities]

#### (E1) IAA activities

The IAJ send committee members to IAA and actively participates in the activities of IAA committees. Especially, Mr. Tomio Murata is in Executive Committee, Mr. Toshihiro Kawano is in Actuarial Standards Committee, Mr. Yoshio Nakamura is in Insurance Accounting TF as a Vice-chair and Mr. Masaaki Shigehara is in Insurance Regulation Committee as a Vice-chair. Also, Mr. Masaaki Yoshimura is appointed as IAA President in 2018.

The IAA related topic is as follows:

(1) OECD Round table

Receiving a request from OECD secretariat, Mr. Hideyuki Yoshida (Chair, International Relations Committee) made a presentation on insurance market in Asia at the "Roundtable on insurance and retirement savings in Asia" held by OECD, as one of the activities of the committee.

## (E2) Participation in ICA2018 Berlin

- ① IAJ sent 5 members to ICA2018 Berlin and one of them made a presentation of research paper. The purpose of dispatch included gathering information for ICA2026 as well.
- ② IAJ participated in VICA2018 (platform of ICA2018 recorded video) as a national partner, and invited IAJ members and each committee to utilize VICA actively for their continuing education and activities. After 2019, online platform "actuview" is introduced after VICA, and IAJ will sign the contract for registration as an institutional partner. By this contract, IAJ members can view webinars continuously, such as overseas actuarial conferences and training, which are applied to official CPD credits in continuous education.
- ③ Prior to the ICA2018, ICA2026 Organizing Committee held an exchange event for ICA2018 participants. At the exchange meeting, they introduced some advice and experiences on joining the international conference. In addition, a questionnaire to ICA participants was conducted as a reference for ICA2026.
- ④ Towards ICA2026, ICA2026 Organizing Committee organized a panel discussion by the participants of ICA2018 at Annual Meeting, which shared the experience of participating in ICA to members.
- (E3) Implementation of 46<sup>th</sup> Actuarial Seminar of East Asia (ASEA)

  From September 11 to 14, 2018, the IAJ held a 4-day seminar on the status of Japan's various systems to which actuaries are related, with 36 participants from 14 different areas mainly in East Asia.
- (E4) Dispatch of members to international conferences, etc.

The IAJ sent its members to the following international conferences, etc.

- Trom May 30 to June 3, 2018 IAA Meetings (In Berlin, Germany)
  Mr. Hideyuki Sumi, Mr. Tomio Murata, Mr. Masaaki Yoshimura, Mr. Nobuhiro Shimizu,
  Mr. Masaaki Shigehara, Mr. Yoshio Nakamura, Mr. Takashi Yamamoto, Mr. Ryutaro Yamada,
  Mr. Yosuke Fujisawa, Mr. Kenji Sekine, Mr. Ikuo Kudoh
- ② From June 4 to 8, 2018 ICA2018 (In Berlin, Germany)

  Mr. Hideyuki Sumi, Mr. Ikuo Kudoh, Mr. Nobuhiro Shimizu, Mr. Kousuke Yoshida (for presentation of a paper), Mr. Miwaka Yamashita, Mr. Ryutaro Yamada, Mr. Takayuki Igawa
- ③ From July 30 to August 1, 2018 APRIA (In Singapore)

Mr. Yosuke Fujisawa (Panelist), Mr. Keita Kakiuchi (for presentation of a paper)

- From August 29 to 30, 2018
  IAA Extraordinary Meeting (In Utrecht, Netherland)
  Mr. Tomio Murata
- (In Hong Kong, P.R.China) Mr. Ikuo Kudoh, Mr. Tatsuhiro Yamakawa \* cooperated the promotion (video-making).
- 6 From October 14 to 17, 2018 SOA Annual Meeting (In Nashville, USA)
  Mr. Kazuo Kuroiwa \*conducted surveys such as on Data Science
- (In Las Vegas, USA)

  Mr. Hiroki Kaneko \*conducted surveys such as on Data Science
- (In Mexico) Mr. Hideyuki Sumi, Mr. Tomio Murata, Mr. Hiroshi Shoji, Mr. Masaaki Yoshimura, Mr. Nobuhiro Shimizu, Mr. Toshihiro Kawano, Mr. Masaaki Shigehara, Mr. Yoshio Nakamura, Mr. Takashi Yamamoto, Mr. Hiroshi Yamazaki, Mr. Ryutaro Yamada, Mr. Yosuke Fujisawa, Mr. Kenji Sekine, Mr. Ikuo Kudoh
- (E5) Collaboration with the Institute of Actuaries of Korea (IAK)
  In September 2018, Mr. Chun-Sick Park (Secretary General of IAK) visited Japan and participated in ASEA seminar which doubled the purpose of survey of IAJ. Also, IAJ general secretary and vice-general secretary held a meeting with Mr. Park to exchange opinions and information of management of both secretariats.

Upon request from IAK, IAJ dispatched 2 members from Professionalism Education Division, Mr. Ikuo Katayose (Chair) and Mr. Yosuke Fujisawa (member) as lecturers for the program of "Professionalism Training" in IAK Annual Meeting. This doubled as the purpose of exchange opinions between IAK and IAJ to strengthen professionalism.

(E6) Cooperation to FSA GLOPAC workshop (Global Financial Partnership Center)
In December 2018, FSA (International Dept.) asked IAJ to support their workshop of GLOPAC program by sending lecturers. Upon the request, ASEA Division gave them lectures as the GLOPAC workshop was aimed for financial officials from developing countries and the requested contents were covered by ASEA programs for the most part.

## [F. Advisory Committee]

(F1) The 30<sup>th</sup> Advisory Committee meeting was held on February 26, 2019, where summary of business activities in 2018, business plan in 2019 (draft) and reported matters (Preliminary Report on Data Science, initiatives on internal regulations) were discussed.

#### [G. Joint Industry-Academic Project]

(G1) Upon request of Kyoto University to send lecturers for insurance mathematics and pension mathematics lectures, Mr. Jun Asano (Sumitomo Life Insurance), Mr. Hiroyuki Saito (Sumitomo Life Insurance), Mr. Tsuyoshi Suzuki (Sumitomo Life Insurance), Mr. Ikuo Katayose (Resona Bank), Mr. Toshinori Sanai (Daido Life Insurance), Mr. Takeshi Toyodome (Nippon Life

- Insurance), Mr. Motoo Nakayama (Nippon Life Insurance) and Mr. Yoshihiro Minami (Nippon Life Insurance) were sent to the University.
- (G2) Upon request of Osaka University to send lecturers for insurance mathematics lectures, Mr. Akihiko Sasada (Sumitomo Life Insurance), Mr. Masaki Takemura (Daido Life Insurance) and Mr. Hiroyuki Tsunekawa (Nippon Life Insurance) were sent to the University.
- (G3) Upon request of Kobe University to send lecturers for insurance mathematics lectures, Mr. Koji Matsumoto (Sumitomo Life Insurance) was sent to the University.
- (G4) Upon request of Tokyo University to send lecturers for social mathematics special lectures, Mr. Ryoichi Nakamura (NLI Research Institute) was sent to the University.
- (G5) Upon request of Waseda University to send lecturers for insurance mathematics and pension mathematics lectures, Mr. Yoshiki Adachi (Meiji Yasuda Life Insurance), Mr. Kouichi Tanaka (Meiji Yasuda Life Insurance), Mr. Junichi Hamada (Meiji Yasuda Life Insurance), Mr. Akira Arai (Meiji Yasuda Life Insurance), Mr. Kentaro Sekiguchi (Aon PLC) and Mr. Yosuke Fujisawa (Swiss Re) were sent to the University.
- (G6) In September 2018, as one of the activities of Joint Industry-Academic Project, a career support seminar for undergraduate and graduate students who have interest in actuaries was held by Waseda Graduate School of Accountancy, and the IAJ dispatched Mr. Ikuo Kudoh (General secretary of the IAJ) to the seminar as a lecturer.
- (G7) Being offered by Risk Analysis Research Center of the Institute of Statistical Mathematics, IAJ joined "Network Of Excellence (NOE) on Risk Research" managed by the center in July 2018. Also, in December 2018, at the financial symposium hosted by the center, two members from IAJ presented papers.
- (G8) In October 2018, at the department of mathematics of Kyoto University, consecutive lectures were held and the IAJ held them in common by dispatching lecturers.
- (G9) In November 2018, the IAJ signed a contract with Tokyo University to do joint research utilizing data of National Database of Health Insurance Claims and Specific Health Checkups of Japan (NDB).

## [H. Related to Presentation of Awards]

- (H1) Awards presented to a person with outstanding results in the 2017 qualification examination
  - ① Presentation of President Award
    The IAJ presented the President Award to Mr. Kouta Ushiroshoji (Dai-ichi Life Insurance).
  - Presentation of award for outstanding results for each subject The IAJ presented an award to 1 person for Mathematics, 1 person for Life insurance mathematics, 1 person for Non- life insurance mathematics, 1 person for Accounting, economics and investment theory, 1 person for Life insurance 2.
- (H2) Presentation of awards for outstanding research paper
  - ① On November 8, 2018, an award was presented for the following paper at the Annual Meeting:

"Mortality projections for portfolio of insurance contracts with reference population data: Two population model approach "

Mr. Kazunori Nishio (Sumitomo Life)

"Projection of future mortality by death causes reflecting the medical point of view"

Mr. Toshinori Sanai (Daido Life)

② On January 24, 2019, awards were presented for the following outstanding IT-related papers at the IT Annual Meeting:

"Usefulness of Open API, and innovation by insurance industry"

(IT Study Group IV)

"Creation of new relationship between development department and operation department • Fulfilment of "super-shortening" of service release cycle by role review"

(IT Study Group II)

# [I. PR and Publication Activities]

#### (I1) PR activities

- ① "Actuary Seminar" primarily for students was held on January 26, 2019 in Tokyo and in Osaka. There were 54 participated in Tokyo and 20 participated in Osaka.
- ② On November 15, 2018, a high-school student who had interests in actuaries visited the IAJ for his field work "The Period for Integrated Studies" at school, and General Secretary and deputy general secretaries corresponded with the visit.
- (I2) Enhancement of information provision function

The following revisions were made in our HP:

- 1 The top page was renewed by introducing the slide type banner which link to the information on qualification examination, CERA examination and notice of ICA2026.
- 2 CERA related information has been enhanced.
- 3 The page of "IAA Newsletter" was added which made our members easy to access to the information on IAA conferences.
- 4 The page of "Voices of successful applicants" was renewed. (The members were replaced.)
- (I3) Cooperative activities of related associations / institutes

The IAJ sponsored the public interest purpose project; "Suugaku Koshien 2018 (The 11<sup>th</sup> National Math Championship)" organized by the mathematics Certification Institute of Japan (SUKEN).

(I4) Publication of bulletins, etc.

The following bulletins and other publications were published.

#### 1 Bulletin

No.71	• On the history of classical actuarial mathematics
	• Projection of future mortality by death causes reflecting the medical point of view
	1
	· A study on Ruin Theory and application to life insurance
	• The changes of the economic value of insurance liabilities changes in
	the term structure of interest rates
	(The use of the Dynamic generalized Nelson-Siegel Model)
	· One mathematic consideration for the diversification of the business
	line

- · A study of mortality assumptions for retirement benefit accounting
- Profit management on foreign currency-denominated insurance
  Mortality projections for portfolio of insurance contracts with reference population data: Two population model approach
- · A study of longevity risk embedded in whole life medical insurance

# 2 Supplementary volumes of bulletin

No.284	<the 58th="" annual="" it="" meeting="" report=""> (IT Committee)</the>
	· Special lecture "Workforce of the Future"
	By Mr. Ryosuke Sasaki (PwC Consulting)
	· Utilization of RPA (Robotic Process Automation) in insurance
	industry
	Possibility of utilizing Cloud in insurance industry
	· Consideration for utilizing Big Data in insurance industry
	• IT utilization for realization of "work style reform" in insurance
	industry
	· Utilization of "failure knowledge" in system development
	· Applicability of block chain technology to insurance business and
	insurance products

# 3 Actuary Journal

	Γ .
No.103	• The 7 <sup>th</sup> regular meeting report in 2017
	· ASTIN Bulletin Abstracts (Translated by ASTIN related Study Group)
	Report of AFIR/ERM Colloquia in 2016 Edinburgh (AFIR related)
	study group)
	· 2017 Report on Activities of Kansai Committee's Sub-committees
	· 2017 Report on Moonlight Seminar
	· 2017 CERA qualified person(s)
	· 2017 accomplished members for CPD objectives
	· 2017 applicants who passed the qualified examination
	· Book introduction (from books read by members in 2017)
	· Actuaries' relay talks (Series Part.4)
No.104	· On the award of The Japan Academy (Nippon Gakushi-in) Prize for
	Mr. Shigeo Kusuoka
	· OECD / JFSA / ADBI Roundtable on Insurance and Retirement
	Saving in Asia- Japan (International Relations Committee)
	· Participation in "Network Of Excellence (NOE) on Risk Research"
	(ERM Committee)
	• The 8 <sup>th</sup> regular meeting report in 2017
	• The 9 <sup>th</sup> regular meeting report in 2017
	• The 10 <sup>th</sup> regular meeting report in 2017
	• Introduction of 2016/2017 Emerging Risks Survey (ERM Committee)
	· 2017 Continuing Professional Development / CPD units achievement
	report
	· Introduction of committees' activities (Annual Meeting Committee)
	· Actuaries' relay talks (Series Part.5)
No.105	<ica2018 berlin="" report=""> (ICA2026 Organizing Committee, IAJ</ica2018>
<special issue="" of<="" td=""><td>Secretariat)</td></special>	Secretariat)
ICA2018Berlin	① ICA2018 Berlin
>	② VICA2018 Public Viewing
	3 Towards ICA2026 Tokyo (2018 Annual Meeting)
	• The 1st regular meeting report in 2018
	• The 2 <sup>nd</sup> regular meeting report in 2018
	• The 3 <sup>rd</sup> regular meeting report in 2018
	• Report of IRFRC-APRIA 2018 Joint Conference (ERM Committee)
	• The 46 <sup>th</sup> ASEA Seminar report (ASEA Division, IAJ Secretariat)

	· Column ~ A high-school student's visit to IAJ
	Report of "Suugaku Koshien 2018 (The National Math
	Championship)" (PR Committee)
	Rest in peace - Mr. Toshihiko Shoji (Ex-Chair of Actuary Journal
	Editing Division)
	· Book introduction
	· Introduction of committees' activities (Insurance Accounting
	Division)
	· Actuaries' relay talks (Series Part.6)
No.106	• The 7 <sup>th</sup> regular meeting report in 2018 (Holiday Symposium)
<special issue="" of<="" td=""><td>"Actuaries and Data Science"</td></special>	"Actuaries and Data Science"
Data Science >	Data Science on Accounting
	<ul> <li>Data Science techniques</li> </ul>
	Actuaries' role in Data Science
	• Translation of "Big Data and the Role of the Actuary" (Foreign
	Literature Study Group)
	• The 4 <sup>th</sup> regular meeting report in 2018
	• The 6 <sup>th</sup> regular meeting report in 2018
	• Roundtable discussion by the participants of the 7 <sup>th</sup> Actuary Special
	Seminar $\sim$ What we think now after 25 years $\sim$
	· 2018 Actuary Seminar report (Actuary Seminar Division, PR
	Committee, Kansai Committee)
	• Introduction of committees' activities (Insurance Regulation Division)
G 1. 1. F. 1''	· Actuaries' relay talks (Series Part.7)
Special Edition	<lectures></lectures>
<risks and<="" td=""><td>• Our approach towards the improvement of cyber tolerance ~ by</td></risks>	• Our approach towards the improvement of cyber tolerance ~ by
Insurance	financial institutions and Financial Supervisory Authority
No.15 >	• ERM documents translation by Joint Industry-Academic Project
	<contribution></contribution>
	Describing the development of ISAP6
	AGLM: an extension of GLM for actuarial practice using data
	science techniques
	<paper></paper>
	Economic IRR and Its Application

- 4 2018 Qualification Examination Question Collection
- (5) 2017 Annual Meeting Report Collection2018 Annual Meeting Report Collection