



SOCIETY OF ACTUARIES

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## The Development of China's Actuarial Education and Its Twenty Years' Cooperation with the SOA

By *Guangyao Liu*

**T**hirty years have passed since China began to introduce reform policies which have allowed for a more open society. The Chinese economy has gained great development in diverse areas, in which the domestic insurance industry has experienced the fastest growth. From 1978 to 2008, the number of insurance companies has grown from one to 130. Premiums have hit RMB 978.4 billion and total assets have soared to RMB 3.3 trillion. The growth rate of the insurance industry in China has accelerated, which can be seen from the accumulation of total insurance assets. It took 24 years for the industry to accumulate RMB 1 trillion in assets, another three years to grow to RMB 2 trillion, and only one year to grow by another RMB 1 trillion.

Development of actuarial theory and principles has greatly contributed to the fast growth of the insurance business. By the end of the 1980s, actuarial policies and practices had not been developed for China's market and there were no actuaries in the insurance industry in China. Actuarial Science developed in the past two decades in China. During this period, two Chinese versions of life tables were published, an improved actuarial monitoring system was put in place, and a product development system was established. The past 20 years witnessed the Chinese insurance industry moving from being monopolized by the central government to a more open market. Actuaries are a key factor in this industry, and they will play a great role in accelerating the industry's development.

When talking about the development of Chinese actuarial science, the Society of Actuaries (SOA) is definitely a chapter to review. It was the SOA that helped China to develop the first batch of

actuaries and thus drive the growth of actuarial science. Twenty years ago, only a few people in China knew about actuarial science. Among them, only one person predicted the role actuarial science would play in Chinese insurance in the future and he dedicated himself to actuarial science. Dr. Kailin Tuan is a tenured professor at Temple University in the United States. At an SOA annual meeting in Montreal, Canada in October 1987, an agreement was reached on a proposal put forward by Dr. Tuan regarding the introduction of actuarial science education to China. One month later, Harold G. Ingraham, Jr.—president of SOA at that time—and Dr. Tuan visited Nankai University and signed a cooperation protocol agreement. The main content of this agreement was that the SOA would sponsor Nankai University's offering of actuarial science courses for postgraduate students. The sponsorship was carried out in three stages, with three years for each stage. In the first phase, SOA dispatched actuaries to give lectures at Nankai University. The courses included theory of interest, actuarial mathematics, life modeling, risk management, and other relevant courses. Fifteen students attended the program. Three years later, graduating with a degree, some of them went to the Chinese insurance monitoring office as policy makers for state oversight of China's actuarial system, some took positions as college actuarial teachers to impart knowledge to students from other universities, and some became the industry pioneers for the few insurance companies in China.

Apart from introducing actuarial courses to China, the SOA set up the first actuarial exam center in

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China, at Nankai University under the sponsorship of Manulife in 1992. The center was convenient for students taking SOA exams, which improved the development of actuarial talents. Later, the SOA expanded its exam centers to Fudan University in Shanghai, Hunan College of Finance and Economics in Changsha, Renmin University of China in Beijing, Sun Yat sen University in Guangzhou, University of Science and Technology in Hefei, and Ping An Insurance Company in Shenzhen. So far, China is where the SOA has established the most exam centers in Asia. The cooperation between the SOA and Nankai University was so successful that people referred to the partnership as the Nankai SOA Cooperation Model.

The fast development of China's insurance industry and the increasingly important role that actuaries play boost the demand for local actuarial talent. In order to meet the demand of insurance companies, many Chinese universities offer relevant courses. Currently, about 20 universities have set up actuary majors with thousands of students studying the subject. Most of these universities offer postgraduate programmes in actuarial science such as Fudan University, Nankai University, Central University of Finance and Economics, Peking University. A small number of them also offer undergraduate programmes like Shanghai University of Finance and Economics and Hunan University. The majority of students take exams from at least one of the actuarial exam systems. The number of students that take SOA exams is the largest.

Similar to U.S., Chinese insurance companies consider the result of exams as an important criteria in recruitment of actuaries. For example, a life insurance company generally requires that an actuarial graduate pass the first four SOA exams when it recruits a candidate to do the valuation. As the number of actuarial graduates increases,

the number of new actuarial jobs cannot meet the demand of graduates, so many companies take passing the first four SOA exams as the prerequisite for an entry level job. According to statistics, there are about 1,000 people doing actuarial work in the field of life insurance. A great majority of them are working for life insurance companies. By the end of 2008, the number of FSAs and ASAs in China was 215 and 165 respectively. The Chinese insurance market has become the ninth largest insurance market in the world with regard to the total premium income. However, compared to western developed countries, China's insurance industry is still in its infancy. More and more actuarial graduates who study abroad and actuaries who work abroad choose to go back to China. They bring dynamism to the domestic actuarial industry. Because of their overseas education or work experience, they are highly valued by the company.

China never stops constructing its own actuarial education and exam system while at the same time introducing foreign actuarial systems and examinations. China's first local actuarial exam was set up in 1999. Among the first 43 fellows, 16 of them graduated from Nankai University, and about 30 of them were SOA candidates as well. When establishing our own actuarial exam systems, we always take the SOA as our blueprint. On May 9, 2008, China finally got its own actuarial organisation, the China Actuary Association (CAA), which now has more than 140 fellows (FCAA) and more than 800 associates (ACAA). The new exam system of the CAA will begin in Spring of 2011, also consisting of two levels which are Fellow and Associate. Associate level contains eight exams and one professionalism education course.

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### Exam Path to Become an Associate Member of the CAA

Subject Name	Code	Subject Name	Code
Foundations of Mathematics	A1	Life Actuarial Science	A 5
Financial Mathematics	A2	Non-life Actuarial Science	A 6
Actuarial Models	A 3	Accounting and Finance	A 7
Foundations of Economics	A 4	Actuarial Management	A 8

The Fellow level is divided into two fields which concentrate in life and non life separately. Fellow level for the life field contains three compulsory exams (FC1, FC2, FL1) and two optional ones (chosen from FC3, FC4, FL2, and FL3). Fellow level for the non life field contains four compulsory exams (FC1, FG1, FG2, FG3) and two optional ones (chosen from FC2, FC3, and FC4). A second professionalism education course is needed for both fields.

### Exam Path to Become a Fellow Member of the CAA

Code	Subject Name	Remarks
FC1	Insurance Law and Other Relevant Laws	Compulsory
FC2	Corporate Finance of Insurance Company	Compulsory
FC3	Health Insurance	Optional
FC4	Investment Science	Optional
FL1	Actuarial Practice of Individual Life and Annuity	Compulsory
FL2	Asset Liability Management	Optional
FL3	Employee Benefit Plan	Optional
FG1	Advanced Non-life Actuarial Practice	Compulsory
FG2	Non-life Pricing	Compulsory
FG3	Non-life Reserve Valuation	Compulsory

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