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The Role of Swiss Actuaries

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"The first duty of a human being is to assume the right functional relationship to society—more briefly, to find your real job, and do it."— Charlotte Perkins Gilman

Switzerland is small country in Western Europe, known—among other things—for its neutrality. Many international organizations are based in Switzerland. The United Nations has a main office in Geneva. Its predecessor organization, the League of Nations, was also headquartered in Geneva. Besides its prominence in the international arena, Switzerland bases its economy on certain industries. It is a main player in financial services on a global scale. And it is the country where influential organizations are headquartered, like the Bank of International Settlements (and the Basel Commission on Banking Supervision), the International Association of Insurance Supervisors, and the Geneva Association.

As nonmember of the European Union (EU), Switzerland has its own regulatory insurance solvency standard, the Swiss Solvency Test (SST), which was adopted in full in 2011 well before the EU's Solvency II enactment of January 2016. SST is in itself a success story: it was probably the first regulatory economic capital paradigm to be put in place, in a joint effort of authorities, industry and academics. This was no small feat, considering the size and diversity of the insurance industry. Annual direct premiums are about USD 65 billion or 10 percent of GDP, in a country of 8.3 million. On a premium per capita basis, Switzerland ranks at the top of the European list.

What are the roles of Swiss actuaries in this seemingly large insurance universe?

First, let's have a look at the educational path of a Swiss actuary. Actuarial education in Switzerland is based on a curriculum established by the Swiss Association of Actuaries (SAA). A candidate may take courses at the Federal Swiss Institute of Technology (ETH) to validate any or all of the 14 required areas of knowledge that range from computer science to professionalism. After the candidate files an application with the SAA, a committee decides what subjects need to be tested in a "colloquium." The final requisite is to have at least three years of relevant actuarial practice. The title of "Actuary SAA" is then awarded and a diploma is presented at the annual meeting of the SAA, held in the first week of September.

RiskLab, a research center on quantitative risk management, was founded, some 20 years ago, at the ETH. RiskLab has served as an interface between academia, industry, and regulators. The excellent academic ETH environment coupled with the intellectual and physical nearness of the financial and insurance industry in Zurich—in-

cluding regulators—provide the ideal scene for fruitful discussions. This "alliance" is probably unique in the world. Therefore, it is not surprising that the SST was implemented in a relatively short timeframe.

The majority of the 769 fully-qualified actuaries of the SAA work in Zurich. It is common to bump into many friends and colleagues at industry conferences. A good half of the membership attend the SAA annual meeting, and partake in the legendary banquet that takes place at the end of the first conference day.

As continuing education is concerned, the SAA has its own rules, and many events and courses are available to fulfill the requirements. In particular, every summer a one-week Swiss Summer School is organized by the SAA and the University of Lausanne, where a faculty of two to three invited academicians and practitioners focus on a single topic. This year's theme is "Quantitative Risk Management," featuring the authors of a book by the same title. In the last few editions, Prof. Bühlmann, a pioneer of credibility theory and honorary president of the SAA, has presented certificates of completion at a farewell ceremony.

Insurance companies are the main employers of actuaries. But it is common to find statisticians, physicists, mathematicians and quants performing actuarial functions. With the recent growth in popularity of predictive analytics and big data, there is a widening of areas of practice. It is my impression, however, that actuaries do not necessarily form an elite group in the same sense as in the Anglo-Saxon insurance world. For instance, the role of appointed actuary defined by FINMA, the Swiss regulator, can be fulfilled by either SAA actuaries or individuals with equivalent credentials (but not necessarily actuaries).

Interestingly the actuarial function gained popularity with the passing of the Solvency II Directive that in some sense has had an influence on the Swiss insurance legislation. Article 48 of the Directive states that:

"The actuarial function shall be carried out by persons who have knowledge of actuarial and financial mathematics, commensurate with the nature, scale and complexity of the risks inherent in the business of the insurance or reinsurance undertaking, and who are able to demonstrate their relevant experience with applicable professional and other standards."

For example, one of the tasks of the actuarial function is to ensure the appropriateness of the methodologies and underlying models used as well as the assumptions made in the calculation of reserves. It is assumed that other analytical professions, with the appropriate training, are equally able to carry out the task.

Although the above scope is somewhat limited to the determination of solvency capital requirements and best-estimates of technical provisions or reserves, it is also applicable to other functions that are typically of the actuary's domain, such as ratemaking, cash flow testing and experience studies.

The SAA is a member of the Actuarial Association of Europe, an organization of 36 member associations in 35 European countries. The Actuarial Association of Europe represents over 21,000 actuaries, and provides advice and opinions to the various organizations of the European Union on actuarial issues in European legislation. Actuaries who belong to any of these 36 associations benefit from mutual recognition agreements, facilitating work mobility within Europe.

Zurich is a world class financial center and attracts many actuaries from abroad, including non-Europeans from the Society of Actuaries (49 members), the Casualty Actuarial Society (26 members), the Institute of Actuaries of Australia (11 members), the Actuarial Society of South Africa, and the Institute of Actuaries of Japan. I even know a member of the Actuarial Society of Benin currently employed by a large reinsurer.

Traditional actuarial roles have expanded greatly, while other professionals play roles in risk management in the banking and insurance industries, as well as in product design and development, financial reporting, reinsurance, and other areas of practice, including academia. It is interesting to see an explosion in the growth of membership in other credentials in Switzerland, like CFA and PRM, who find their way in the ranks of banks and insurance companies.

The Swiss Association of Actuaries, founded in 1905, has produced scores of contributors to the actuarial body of knowledge, following perhaps the steps of Euler, the Bernoulli brothers and other forefathers. Its members form a strong community that has been enhanced by the participation of actuaries from other actuarial associations worldwide.

The growth of Zurich as a world class financial center and the close collaboration of academics, regulators and the industry, has contributed to the development of new and innovative areas of financial practice and research.

I have attested a few differences in actuarial curricula among members of the International Actuarial Association. But perhaps the salient feature of the actuarial practice in Switzerland is the diversity of roles played by actuaries and other professionals that fulfill the actuarial function. ■

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