

Discussion Paper on Actuaries in Banking and Financial Management

Prepared by the Casualty Actuarial Society
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I. Introduction

A. Background

During the last Presidents' Forum held in Rio, six priority topics were identified for further exploration. The topics were identified as key issues facing the profession and opportunities for actuaries.

Individuals volunteered to take the lead on developing papers on the topics for discussion at the next Presidents' Forum scheduled for May 28, 2006 in Paris.

Paul Braithwaite, President of the Casualty Actuarial Society, volunteered to lead the development of the topic on **Actuaries in Banking and Financial Management**. This paper has been prepared to facilitate the discussion of the topic.

B. Research for the Paper

CAS President, Paul Braithwaite, CAS Executive Director, Cynthia Ziegler, CAS Director of Communications and Research, Mike Boa, and CAS Research Manager/Librarian, Erika Davis, formed a task force charged with researching the existence of actuaries in banking and financial management. A short questionnaire was developed and sent via e-mail to a list of IAA member organizations. Responses were received from 22 organizations, and the responses are organized in the attached table. The responding countries include:

- | | |
|--------------|-------------------|
| a. Argentina | l. India |
| b. Australia | m. Israel |
| c. Croatia | n. Japan |
| d. Egypt | o. Mexico |
| e. Estonia | p. New Zealand |
| f. Georgia | q. Romania |
| g. Germany | r. Singapore |
| h. Greece | s. Sweden |
| i. Hong Kong | t. Switzerland |
| j. Hungary | u. United Kingdom |
| k. Iceland | v. Ukraine |

The task force also reviewed literature to identify papers that have already been developed on the topic. A Bibliography of these resources is also attached to the paper.

II. Use of Actuaries in Banking and Finance

A. History

Historically, most actuaries have worked within the insurance industry. There have been movements in recent years, particularly in places like Australia, France, Mexico, and the United Kingdom, to apply the work of actuaries to the banking and financial services industries

According to a 1999 article by Paul Thornton in *The Banker*, “Actuaries are well equipped to deal with certain kinds of problems that commercial banks frequently encounter. Actuaries after all, are well-versed in the management of financial risks and uncertainties. While few actuaries actually work in the banking sector, this may change in the future as banks and insurance companies begin integrating their operations. Areas where the skills of actuaries could be put to good use include asset-liability management, market risk, and product pricing.”

Nearly seven years after *The Banker* article was published, there is substantial evidence that actuaries are making the in-roads that Thornton predicted. Three strong examples are illustrated by Australia, the United Kingdom, and Mexico.

1. Australia

In Australia, there is 1126 member of the Institute of Actuaries of Australia. More than 10% of the membership (155 members) is working in banking/finance industries. Specific positions held by these actuaries include: Stockbrokers, Fund Managers, Research Managers, Analysts, and various senior executive positions. Actuarial consultants are also filling these roles on behalf of clients.

Duties being performed include asset and liability management, research, marketing, risk assessment, project management, product design, assisting with investment policy, and advising on the distribution of profits.

Having already defined financial services as a traditional field for actuaries, the profession in Australia is moving into new area such as: climate change, information technology, genetics, telecommunications, and energy pricing.

2. United Kingdom

The Institute of Actuaries has articulated a vision that states, “Actuaries will work in a much wider range of businesses than at present. The actuarial training will be highly attractive as a basis for a career in finance with its distinctive emphasis on questions of financial and other uncertainty. The profession will be known for its objective and responsible views on current issues.”

The Institute goes on to state that, “To achieve this vision, some significant changes have been and are being made. A new education strategy has been launched to reflect the skills with which future actuaries need to be equipped, and to bring up to date the structure of the examination requirements, the qualifications provided and the way in which attainment of skills and knowledge is assessed. The new education system launched in 2005 has a greater emphasis on investment, and sees the introduction of subjects such as corporate finance, banking, and healthcare, and the provision of a choice of topics according to the area of work in which the student intends to practice.”

Currently, there are 6870 members of the Institute and 1297 are working in banking and finance. Of these, the majority are employed with Investment Managers, Investment Banks, and Retail Banks.

The United Kingdom’s focus on actuaries in the investment arena partly stems from the profession’s development in the late 1990’s of an “Investment Strategy for the Actuarial Profession.”

3. Mexico

In Mexico, it is estimated that there are 13,000 actuaries that are mainly trained in mathematics, statistics, demographics and finance. Most work in insurance companies and pensions that may be defined as, “traditional positions” for actuaries. However, numerous actuaries work in other areas that may be defined as, “non-traditional positions.” Throughout their studies actuaries discovered new areas of interest and specialized in them. The labor market has continued to expand and diversify and today approximately 3000 actuaries work in the “non-traditional positions” they have created in banking and finance.

The niche of banking and finance truly embraces the intrinsic qualities that characterize actuaries: being specialists in risk and consequences thereof, providing mathematical and statistical tools, and having a mental structure that allows them to address complex problems and find the most suitable technical solution. As a result, actuaries have found themselves working in private and commercial banks, investment firms, brokerage firms, World Bank, and the government.

III. Future

A. Conclusion

There are several success stories from around the world of actuaries moving in to the banking and financial services industries. Although there are differences in the extent to which actuaries have made such in-roads in various countries, as illustrated in the attached table, there is wide-spread agreement that the actuarial skill set can bring value to these industries.

B. Discussion

This paper and attachments have served to summarize the current state of actuarial work in the banking and financial services industries around the world. Further work is needed to:

- Identify skills that non-actuaries are trained to perform that actuaries already possess,
- Identify areas in the banking and financial industries that actuaries can contribute where they traditionally have not,
- Evaluate education and continuing education programs to see what changes, if any, need to be made to enhance opportunities for actuaries, and
- Determine if the profession wants to purposefully expand into banking and finance at all.

	ARGENTINA	AUSTRALIA	CROATIA	EGYPT	ESTONIA	GEORGIA
Interviewed	Eduardo Melinsky, Professor Regular Titular del Area Actuarial, Universidad de Buenos Aires	Ken Guthrie, Director, Professional Education, Institute of Actuaries of Australia	Tatjana Racic-Zilbar	Mohamed F. Amer, Actuary, Fellow Society of Actuaries, Associate Institute of Actuaries	Tarmo Koll, ERGO Kindlustuse AS, Vastutav aktuaar	Alexander Omanadze
# of Actuaries Working	600 diplomas 160 fellows	1126	49 Fellows	10	21	9
# of Actuaries Working in Finance/Banking	300	155	1	10	0	6
Type of Financial Institutions	Banks, Stock Exchange Brokerage Firms, Pension Fund Administration Companies and Insurance	Banks, Merchant Banks, Insurance Brokers	National Bank of Croatia	Insurance Companies and Social Insurance		Insurance companies mostly; also pension schemes and insurance supervision service
Specific Positions Held	Independent Professionals as Actuaries, Financial Managers, Chief Assistant Actuaries, Capital Market Research	Stockbrokers, Fund Managers, Insurers, Actuarial Consultancies, Approved/Appointed Actuary, Research Manager, Analyst, Chief Risk Officer, Senior Executive, Principal		Consulting Actuaries		Currently only two of the Georgian insurance companies have an actuary on staff.
Duties Performed	Product development, profitability analysis, financial projections, marketing	Pricing, asset and liability management, data mining, reserving, claims management, research, marketing, risk assessment, general management, project management, product design, assisting with investment policy, advising on the distribution of profits	Statistical analysis	Valuation and pricing		Statistical analysis of insurance portfolios and reinsurance treaties, calculation of insurance reserves, participation in product design, corporate planning. Most demand for actuarial work is in the field of pensions.
Education	The Faculty of Economics of the University of Buenos Aires. The Syllabus was recently recognized by the IAA.	Bachelors, Honors of Masters degrees in Economics, Mathematics, Statistics, Actuarial Studies plus the completion of the Professional Actuarial Education Program	Exams set by University (Postgraduate) and set by the CAA (Insurance Law, Insurance Accounting, Insurance Practice in Croatia, Professionalism) Mathematical or economics background for most actuaries.	Associates or Fellows of United States Society of Actuaries or British Institute of Actuaries		About half of our practicing members majored in economics and half in mathematics; this is different with student members, because the majority is studying mathematics at their universities.
Future Opportunities		Actuaries are constantly expanding in to new fields such as climate change, IT, genetics, telecommunications and energy pricing			The demand for actuaries is concentrated entirely in the insurance market, which is about 35 million US dollars (0.6% of GDP).	Work in the field of social security and government healthcare programs, as they are under major reforms now. Also our association is aiming at promotion of the profession in bank industry, to ensure the positions of actuarial profession against other related professions.
Other				20 students are writing exams. Cairo University and Cairo American University are providing actuarial courses.		The demand for actuaries is concentrated entirely in the insurance market, which is about 35 million US dollars (0.6% of GDP).

	GERMANY	GREECE	HONG KONG	HUNGARY	ICELAND	INDIA
Interviewed	Birgit Kaiser, Deutsche Aktuarvereinigung e.V.	C. J. Koutsopoulos, Fellow of the Hellenic Actuarial Society	Patricia Kum, Coordinator, The Actuarial Society of Hong Kong	Gabor Hanok, Member of the Board of the Hungarian Actuarial Society	Bjarni Thordarson Member of the Council of IAA	Liyaquat Khan, Chairperson – International Relations Board, Actuarial Society of India
# of Actuaries Working	2450	80	276 Fellows 104 Associates 146 Students	150	17	Fellows 235 Associates 131 Student Members 5000
# of Actuaries Working in Finance/Banking	25	5	14	120	0	Fellows 1 Associates 1 Students 10
Type of Financial Institutions	Thrift Institutions and Pension Benefits	Banks	Bank (Merchant and Investment, Treasury), Financial and Asset Management Company, Investment and Securities Company	Insurance Companies, Pension Funds, Banks (plus non-industry: supervisory authority, auditors, social security, education)	Bjarni Thordarson Member of the Council of IAA	Banks
Specific Positions Held		“Banc assurance Business” – the design of life products and promotion of same through banks	Managing Director, Chief Financial Officer, Regional/Department Head, Legal Advisor, Assistant Manager, Accounting Supervisor, Analyst	Some 40 as Chief Actuaries of Insurance Companies and Pension Funds		Indian Banking Regulator, Government, Securities
Duties Performed	Product design and pricing, asset-liability-management and accounting, risk hedging and controlling		General corporate management, investment management, sales/marketing, product development, performance measurement, accounting, legal advisor	Valuation, solvency calculation, premium calculation, reporting, EV calculation, LAT, ALM		Research/statistics, securities analysis
Education		Fellows of the Hellenic Actuarial Society and the Groupe Consultatif Actuariel Europeen. The Hellenic Actuarial Society has its own training and qualification program (some 600 hours of courses and a total of 33 hours of professional examinations). This program is in full compliance with the IAA standards and with the (much more stringent) Groupe Consultatif training syllabus.	Of those practicing in the financial institutions, 3 are student members while others have attained fellowship or associateship from various actuarial bodies like the US (SOA), UK (Institute) and Australia (Institute). One of them is also a CFA. As for academic degrees, some possess: PhD, MEc, MA, BSc or BCom	Post graduate actuarial degree		Fellow of the Actuarial Society of India
Future Opportunities						The Actuarial Society of India is focusing on educating Actuaries for financial sector and has diploma level and fellowship level courses in finance and banking.
Other						

	ISRAEL	JAPAN	MEXICO	NEW ZEALAND	ROMANIA	SINGAPORE
Interviewed	Ofer Brandt, FIA, FILAA, President of the Israeli Actuarial Association	Tomio Murata, General Secretary of the Institute of Actuaries of Japan	Jose Luis Suarez, President of CONAC and Jose Muriel AMAC	Ian New. Head of Product Risk Management, Westpac	Adrian Allott	Andrew Linfoot, President SAS
# of Actuaries Working	100 full actuaries and 98 part qualified	1151 Fellows 764 Associates 1675 Students	13,000	98 Fellows	65 Trainees 3 Qualified	60 Fellows
# of Actuaries Working in Finance/Banking	100	191 Fellows 91 Associates 144 Students	3000	Most working in finance/banking industry primarily work in the life insurance subsidiaries, and some have an involvement in funds management. One in banking.	1	3
Type of Financial Institutions	Insurance Companies, Provident Funds, Pension Funds, Banks, Unit Trusts	Trust Banks	Private and Commercial Banks, Investment Firms, Brokerage Firms, World Bank, Government	The major trading banks own life insurance subsidiaries and manufacture their own products. Also involved in mutual funds.	Bank	Investment Funds
Specific Positions Held	Most actuaries are working in insurance companies (life and non-life) and pension fund, one bank started to employ actuaries to implement new need for giving best advice, given by banks to customer for selling pension	Pension Actuaries	Vice Minister of the IRS, CEO of Banco Mexico, Financial Managers, Financial Assistance	Chief Actuary, Valuation Actuary, Head of Product Risk Management,		CEO and Product Manager
Duties Performed	Pricing, valuation reporting, reserving, ALM, risk management	Pension ALM, pension plan consulting, financial verification, actuarial revaluation	Calculations for risk, promulgating rules, analyzing internal and external debt and reserving for same	Life insurance pricing, product development, valuation, financial management, risk management		Management and product development
Education	fellowships from the SOA and the BIA. The rest are educated via Israeli university degree together with complementary professional exams set by the Israeli Association.		Actuarial qualification, MBA or Masters in Finance – universities drive the diversity of actuarial careers by offering specializations along with the actuarial science degrees.	Fellows of the Institute of Australia or the London Institutes of Actuaries	Basic level undergraduate course – aligned to IAA requirements.	Degree, Fellowship
Future Opportunities				There is a potential for NZ actuaries to be influenced by involvement of actuaries within the Australian parent banks.		
Other						

	SWEDEN	SWITZERLAND	UK	UKRAINE
Interviewed	Malcolm Campbell, Global Financial Solutions	Marc Chuard, President of the Swiss Association of Actuaries	Mark Symons, Finance, Investment & Risk Management Board	Yuriy Krvavych, Head Actuary, PhD, The Hollard Insurance Company Pty Ltd
# of Actuaries Working	200	1000 active and retired	6870	20
# of Actuaries Working in Finance/Banking	3	Fewer than 20	1297 working in banking and finance	20 actuaries work in the industry, although two of which are academics
Type of Financial Institutions	Banks		184 Investment Mgr. 142 Investment Banks 130 Retail Bank or Building Society	Insurance Companies
Specific Positions Held	Risk management		377 Investment Management 138 Investment Banking – advisory, finance 122 Investment Analysis 154 Investment Management 15 Investment Trading 35 Provision of finance	Actuarial/management positions; about 50% of actuaries occupy senior managerial positions and thus are much less exposed to actuarial work
Duties Performed	Risk analysis and ALM		Institutional, equity, bond, real estate and other investment, construction of indices, some aspects of asset-liability modeling studies for pension schemes and other institutional funds...	The role of a casualty actuary is quite limited in Ukraine; this is due to weak regulation of PC insurance industry in Ukraine; on the other hand, life insurance actuaries are primarily involved in pricing and reserving
Education	Actuarial examinations			All actuaries hold at least MSc in one of the following disciplines: mathematics, statistics, physics, economics and finance; three of them hold PhD
Future Opportunities			Future opportunities as Quantitative Risk Management	
Other				

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