



The development of the actuarial profession in emerging economies

Actuarial Conference for Insurance Supervisors, Ohrid, June 2014

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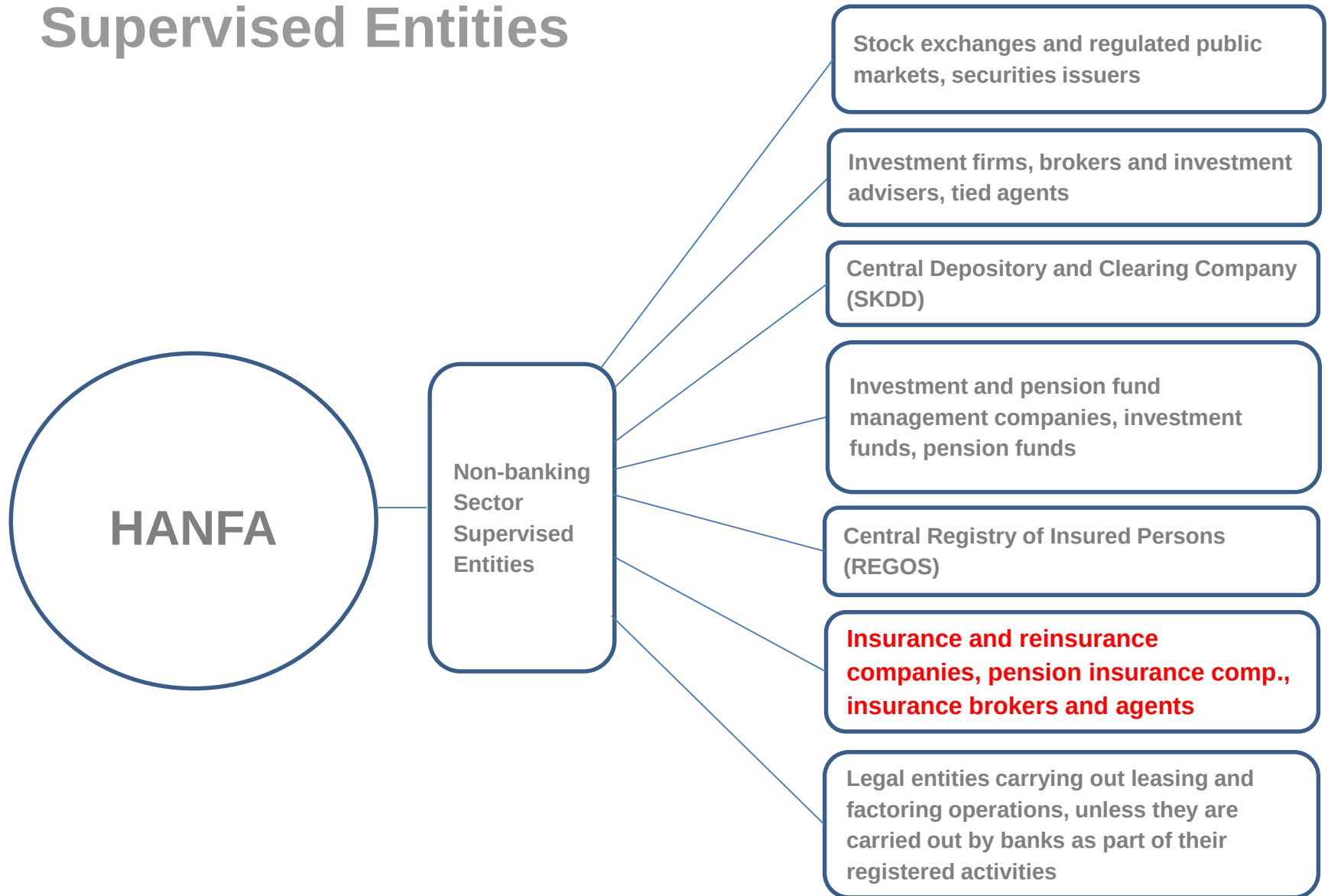
Member of the Board

Croatian Financial Services Supervisory Agency (HANFA)

HANFA - General Data

- HANFA was established on 1 January 2006 (by virtue of the entry into force of the Act on the Croatian Financial Services Supervisory Agency)
- Legal successor of:
 - Croatian Securities Commission
 - Agency for Supervision of Pension Funds and Insurance
 - Insurance Companies Supervisory Authority
- Independent legal person with public authority, accountable to the Croatian Parliament
- Sources of funding:
 - fees charged to supervised entities
 - fees paid for services provided by HANFA
 - state budget (last resort)

Supervised Entities



Number of insurance and reinsurance companies on the market on 31 Dec 2013

LIFE	7
NON-LIFE	10
COMPOSITE	9
REINSURANCE	1
TOTAL	27

GWP insurance and reinsurance 2012 and 2013 (000 EUR)

	2012	2013	Index 2013 / 2012 (%)
<i>Insurance companies</i>	1.173.209	1.180.128	100.59%
- Life	310.858	326.701	105.10%
- Non life	862.351	853.427	98.97%
<i>Reinsurance companies</i>	56.680	52.104	91.93%
TOTAL	1.229.889	1.232.232	100.19%

Insurance Companies' Total Assets
≈ 4.8 billion EUR

European actuarial academy

an initiative of the 'Deutsche Aktuarvereinigung', the Dutch 'Actuariel Genootschap',
the 'Schweizerische Aktuarvereinigung' and the 'Aktuarvereinigung Österreichs'

The development of the actuarial profession in emerging economies

Prof. Dr. Martin Balleer, Germany

*Actuarial Conference for Insurance
Supervisors, Ohrid, Macedonia, June 2014*





Procedure

Steps to implement an efficient actuarial infrastructure

1. implementing an actuarial education and training system to strengthen actuarial competence
2. developing an actuarial society and using it as an efficient bridge to international actuarial competence and community
3. implementing an actuarial competence and governance within the companies and implementing a Responsible Actuary system
4. developing legal and actuarial standards as guidelines for an efficient risk management and serious management
5. developing actuarial competence within supervisory authority



Developing a national education system

1. Full education offered and fully managed by the national actuarial association (Examples: UK, NL, Germany).
2. University driven education for actuarial foundation complemented by and in cooperation with the national actuarial association with regard to actuarial practice, that cannot be taught by universities (example: Switzerland). This is recommended for emerging countries.

Comments:

- Universities should accept the international education syllabus ! Very important !
- Universities could open its organisational infrastructure for practitioners to teach actuarial practice (example: Switzerland)
- It is very important to offer post graduate academic courses for those who haven't studied actuarial science in order to enhance the potential of actuaries
- Most countries require a study in mathematics. If not, the education system should integrate mathematical knowledge as it is required at universities with regard to actuarial science (UK, NL).



Establishing a national actuarial society in emerging countries

- Developing an actuarial education and training
 - It is the greatest bottleneck for small emerging countries to implement a national education system on the level that is accepted by the core syllabus of the IAA and aae
 - Start-up with a cooperation served by a developed society (for example UK, neighbour society)
- Defining Codes of Conduct
- To implement a disciplinary process
- To provide actuarial guidance
 - In high developed countries published by the actuarial societies; in emerging countries it should be started by the regulator step by step in cooperation with the actuarial society, if established



Responsible (appointed) actuary: Principle duties

- to appoint a special responsibility within the company ensuring sound actuarial practise
- to supervise long term fulfilling obligations to the policyholders practising serious risk management in premiums and reserves
- to provide advice and information to the companies and the supervisor enabling a better insight in the risk situation of the companies and improving efficiency of risk control

Comment: It's of great importance in emerging markets to develop the function of a responsible actuary within the companies, if possible, in order to strengthen the companies' and national actuarial competence.



Actuarial competence of supervisory authorities

- Installation of a competent actuarial function is necessary to supervise companies:
 - Solvency II or equivalent solvency requirements and international accounting require actuarial competence
 - Life and health insurance follows actuarial principles
 - Non-life insurance is increasingly influenced by actuarial techniques (statistics, claims reserves)
 - Actuarial know-how is needed to analyse reinsurance underwriting
- Deep understanding of risk management is necessary to supervise risk management processes of the companies (risk based supervision)

Consequence: High investment in education and training.



Actuarial competence of supervisory authorities

Licensing of actuaries

- In many countries actuaries are registered by a legal institution if they have passed some exams or shown a sufficient competence that is proved. The criteria of licensing vary from country to country depending on the legislation and the development of an actuarial profession. If there exist a full membership of IAA or aae the criteria of full membership should be adopted.
- In other countries the actuarial association defines the criteria for fully qualified actuaries based on the Core Syllabus of the IAA or aae – without licensed by a legal institution.

Actuarial Profession in Croatia

Role of the Actuaries

Duties of a Certified / Appointed Actuary (Insurance Act)

- Shall verify that premium tariffs and technical provisions are calculated in accordance with the rules of the actuarial profession and regulation in force and that premiums and technical provisions that are set aside are sufficient to ensure that all liabilities of the insurance undertaking under the insurance contracts are covered at all times.
- The management board shall provide the certified actuary with all the data needed to perform his/her duties.
- Shall submit to the supervisory board and the management board, together with the opinion on the annual report, a report on the findings of the certified actuary with regard to his/her control in the previous financial year. The report must primarily cover the reasons for issue of a favourable opinion, an opinion with a reservation or an unfavourable opinion of the certified actuary on the annual report.

Duties of a Certified / Appointed Actuary (Insurance Act)

- Where, in the course of his/her duties, a certified actuary establishes that premium tariffs or technical provisions are not calculated or formed in accordance with the rules, or that they are calculated or formed in such a manner that payment of the insurance undertaking's liabilities under the insurance contracts is questionable, he/she must forthwith inform the management board of the insurance undertaking. If the management board fails to take into consideration the certified actuary's report in an appropriate manner, the certified actuary must immediately inform the supervisory authorities thereof.
- The management board shall take measures to bring the operations into line with the certified actuary's report.
- If the management board fails to take measures pursuant to the report, the certified actuary must without delay, inform the supervisory authority thereof.
- If a certified actuary ceases to perform his/her duties at the insurance undertaking, he/she must inform the supervisory authorities within eight days thereof.

HANFA - Ordinances

APPOINTED CERTIFIED ACTUARY

- verifies premium rates and technical provisions
- draws up opinions on premium rates and technical provisions (annually)
- signs calculation of capital adequacy and solvency margin
 - proposing bonuses for with-profit-policies
 - monitoring the adequacy of reinsurance
 - Independent actuary in audit

Actuarial Profession in Croatia

Actuarial Education and Licensing

Role of the Certified Actuaries (Insurance Act)

- a certified actuary is a person authorised by the supervisory authority to perform duties of a certified actuary;
- the supervisory authority issues authorisation to perform duties of a certified actuary if the applicant meets the following requirements:
 1. good command of the Croatian language;
 2. he/she has successfully passed examinations and/or tests of technical knowledge required to perform duties of the certified actuary in accordance with the training programme of international or European actuarial associations;
 3. he/she has never been validly sentenced to imprisonment on account of commitment of a crime against property and the economy;
 4. he/she has never had his/her authorisation to perform duties of a certified actuary revoked.

HANFA - Ordinance on the requirements for professional training and examination of professional knowledge required to perform duties of a certified actuary

CONDITIONS FOR CERTIFIED ACTUARIES

(Certification issued by the Croatian Financial Services Supervisory Agency)

- education in line with GC or IAA
university degree + **post-graduate Specialist Master's Degree + additional exams (accounting, law, practice, professionalism in Croatia)**
or equivalent education
- **3-year experience in work on actuarial jobs**
 - licence not withdrawn before
 - not convicted of economic crimes
 - speaks Croatian language
- *ordinary member of actuarial association – used to be condition*

Certified actuaries

Number, as at May 2014*	99
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*average: 3.67 per company
(but not a real number, because a lot of actuaries are managers,
board members etc.)

Education Providers

- education in line with GC or IAA
university degree + **post-graduate Specialist Master's Degree + additional exams (accounting, law, practice, professionalism in Croatia)**
or equivalent education

BASIC AND ADVANCED EDUCATION IN ACTUARIAL MATHEMATICS (1998 - 2001)

Department of Mathematics, Zagreb University
in cooperation with the CAA

in cooperation with **the Institute and Faculty of Actuaries,
Government Actuary's Department and Know-How Fund, London, UK**

- **first generation of educated licenced actuaries in Croatia (26 persons)**
- 4 colleagues finished similar education in Budapest and Bratislava (1993 – 1995)

Education Providers

- education in line with GC or IAA
university degree + **post-graduate Specialist Master's Degree** +
additional exams (accounting, law, practice, professionalism in Croatia)
or equivalent education

ACTUARIAL MATHEMATICS Postgraduate Specialist Master's Degree

first started in January 2003, **organized every
2 years (5th and 6th generation in progress, ≈ 20 students on average)**

Department of Mathematics, Zagreb University
in cooperation with the CAA

Education Providers

- education in line with GC or IAA
university degree + post-graduate Specialist Master's Degree +
additional exams (accounting, law, practice, professionalism in Croatia)
or equivalent education

Additional exams organized by HANFA,

but HANFA also recognizes exams
organized by the Croatian Actuarial Association

(accounting, law, practice and professionalism in Croatia)

Actuarial Education

GCEA		IAA	POSTGRADUATE ACTUARIAL EDUCATION + 4 ADDITIONAL EXAMS
	STAGE 0: PRELIMINARY STAGE		
1.	Mathematics		
2.	Probability and Statistics	Probability and Mathematical Statistics	Probability and Mathematical Statistics
3.	Stochastic Processes		Stochastic Modelling
4.	Computing		
5.	Economics	Economics	Economics
6.	Accounting and Financial Reports		
7.	Structures and Legislative Instruments of the European Union		
8.	Communication Skills		
9.	Language Skills		

Actuarial Education (cont.)

GCEA		IAA	POSTGRADUATE ACTUARIAL EDUCATION + 4 ADDITIONAL EXAMS
	STAGE 1: ACTUARIAL FOUNDATION STAGE		
10.	Financial Mathematics	Financial Mathematics	Financial Mathematics
11.	Survival Models	Modelling, Actuarial Mathematics, Statistical Methods	Survival Models
12.	Contingencies		Actuarial Mathematics I
13.	Risk Mathematics		Actuarial Mathematics II
14.	Finance and financial markets	Investment and Asset Management	Investment and Asset Management
	STAGE 2: GENERALISED APPLICATIONS STAGE		
15.	Life Insurance	Principles of Actuarial Management	Life Insurance
16.	General Insurance		Nonlife Insurance
17.	Pensions		Pension Insurance
18.	Living Benefits		Health Insurance
	STAGE 3: COUNTRY SPECIFIC AND SPECIALIST STAGE		
(a)	Country specific terms		
(b)	Country specific commercial and legislative environment	Accounting	Insurance Law, Insurance Accounting
(c)	Practical application of principles within the context of (b)		Insurance Practice in Croatia
		Professionalism	Professionalism

Actuarial Profession in Croatia

Professional Association

Croatian Actuarial Association

CAA – HAD = HRVATSKO AKTUARSKO DRUŠTVO

PROFESSIONAL ASSOCIATION FOUNDED 1 Apr 1996

GOALS:

- promotion, development and marketing of actuarial science
- promotion, development and marketing of actuarial profession
 - promotion of practical application of actuarial science
- promotion of professional development and education of actuaries

FULL MEMBER OF IAA - INTERNATIONAL ACTUARIAL ASSOCIATION
(6/2005, PREVIOUSLY ASSOCIATE MEMBER SINCE 6/1998)

FULL MEMBER OF GC - GROUPE CONSULTATIF
(10/2011, OBSERVER MEMBER SINCE 10/1999)
(European Union Actuarial Consultative Group, today The Actuarial
Association of Europe- **AAE**)

www.aktuari.hr

Croatian Actuarial Association

ARTICLES OF ASSOCIATION (1996, AMENDED 2003)

CODE OF CONDUCT (2002, AMENDED 2008)

DISCIPLINARY PROCEDURES (2002, AMENDED 2008, 2012)

GOOD COOPERATION WITH:

- MINISTRY OF FINANCE
- CROATIAN FINANCIAL SERVICES SUPERVISORY AGENCY
 - CROATIAN INSURANCE BUREAU
- Department of Mathematics, Zagreb University

(BASIC AND ADVANCED COURSES IN ACTUARIAL MATHEMATICS (1998 - 2001);
ACTUARIAL MATHEMATICS Postgraduate Specialist Master's Degree (2003 -))

**“ACTUARY” INTRODUCED IN NATIONAL CLASSIFICATION OF PROFESSIONS
(1998)**

Croatian Actuarial Association

CONDITIONS FOR ORDINARY MEMBERS (STATUTE)	since 2003	OLD
Scientific or practical involvement in actuarial work	+	+
Accepts the Articles of Association and acts accordingly	+	+
University degree math and 3 years on actuarial jobs	-	+ or
University degree economy and 5 years on actuarial jobs	-	+ or
University degree physics and 5 years on actuarial jobs	-	+ or
University degree technical and 5 years on actuarial jobs	-	+ or
Special actuarial training and at least 1 year on actuarial jobs	-	+ or
Education in line with GC and IAA recognised by CAA	+	-
University degree	+	-
Experience in actuarial work for at least 2 years	+	-

Croatian Actuarial Association

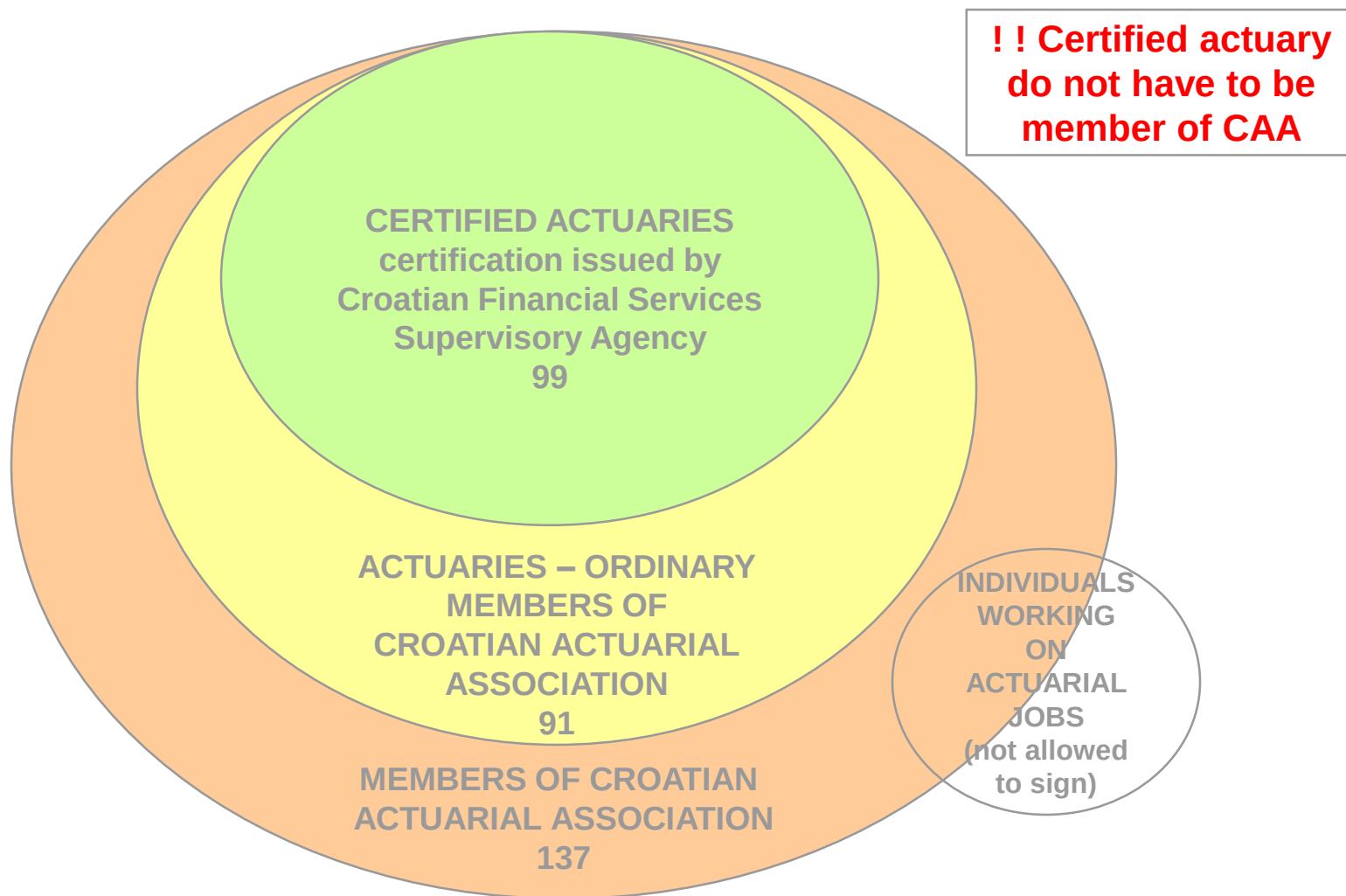
ASSOCIATE MEMBERS

- PERSONS ATTENDING ACTUARIAL EDUCATION OR PERFORMING ACTUARIAL JOBS BUT NOT FULFILLING CONDITIONS FOR ORDINARY MEMBER
- ANY PERSON INTERESTED IN ACTUARIAL WORK

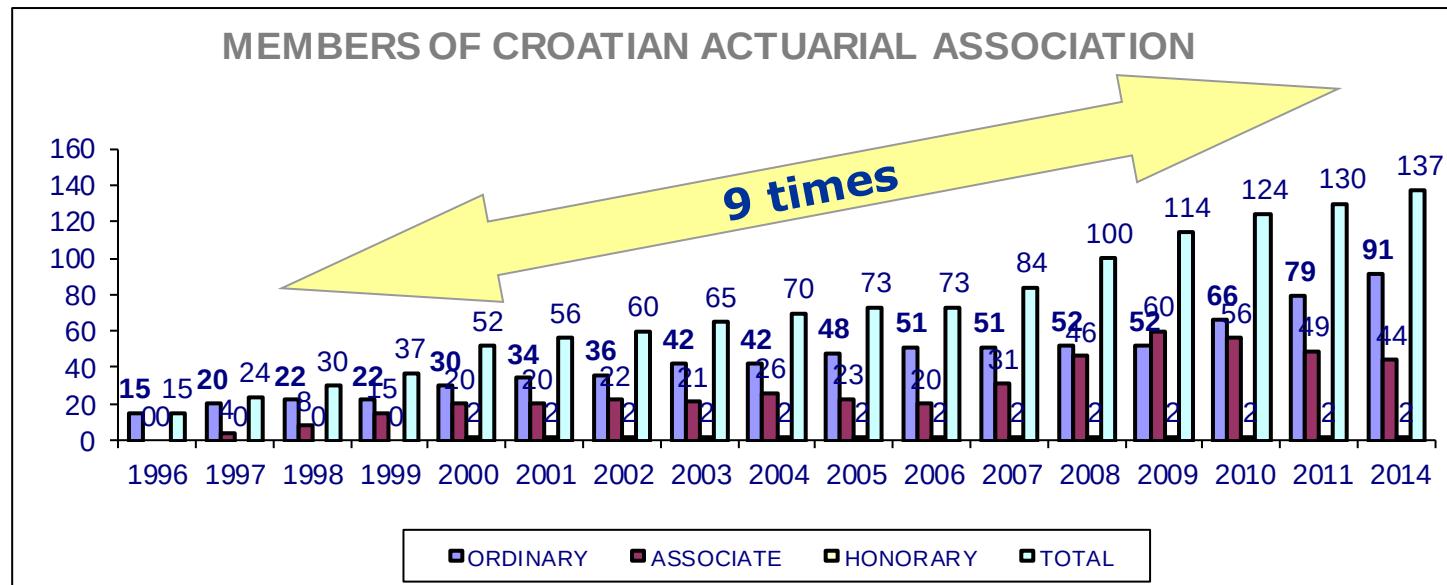
HONORARY MEMBERS

- PERSONS SUPPORTING CAA
- PERSONS SUPPORTING DEVELOPMENT OF ACTUARIAL SCIENCE AND ITS APPLICATIONS

Actuarial Profession in Croatia



Croatian Actuarial Association



Croatian Actuarial Association – Other Activities

Cooperation

Since 2011 intensive work of the Solvency II Working Group with members from HAD (CAA), HANFA and insurance associations.

Cooperation with the International Actuarial Association

- April 2004: [Sixth International Professional Meeting of Leaders of the Actuarial Profession in Central and Eastern Europe BUILDING A GLOBAL ACTUARIAL PROFESSION](#) in organization of International Actuarial Association, Dubrovnik
- September 2011: Meeting IAA (Council and Committee Meetings and Presidents' Forum), Zagreb
- October 2011: International actuarial meeting, Zagreb

Conferences and seminars

Actuarial Profession in Croatia

Continual Education and Training

CAA - Continuous Professional Development

- introduced in 2006 as mandatory
- 14 hours of formal education (or 28 in 2 years or 42 in 3 years)
 - **work for CAA**
 - **professional seminars, conventions, meetings**
 - **writing papers or books**
 - **lecturing**
 - **communication and other soft skills seminars...**
 - 52 hours of informal education
 - reading, informal research and education
 - Internet discussions on actuarial topics
 - organization of professional meetings
 - education for employer's needs....
- annual report of members' activities to the CPD Committee
- each activity max 7.5 hours per year, except professional seminars, other education 5 hours max

- **CAA organizes 2-5 seminars per year (14 hours minimum)**
- **in cooperation with European Actuarial Academy, Croatian Insurance Bureau, reinsurance companies, ...**
- Solvency II, liability adequacy testing and IFRS 4, stochastic methods of claim reserving, product management ...

CAA - Activities and Education

Conferences and seminars

- 1999: Seminar „Theory of risk modeling and loss distributions“
- September 2002: Seminar „Role of actuaries in pension system reform“ - organization with Trade Partners UK and The commercial section of UK Embassy, CAA and Pension funds supervisor
- 10.-12.11.2005: Seminar „International accounting standards (IAS) and Solvency II“ - cooperation with European Actuarial Academy
- 9.-10.11.2006: Seminar „Liability Adequacy Testing & IFRS 4“ (56 participants)
- 20.09.2007: Seminar „Introduction to Embedded Value“ organization CAA and Insurance institute (48 participants)
- 10.-11.12.2007: Seminar „IFRS 4 & Liability Adequacy Testing“ (66 participants)
- 8.12.2008: Seminar „Solvency II“ – organization CAA and Deloitte (more than 80 participants)
- 1.-2.12.2008: Seminar „Actuarial Modelling of Unit Linked Insurance Policies“ – organization CAA, Croatian Insurance Bureau and SCOR Global Life (66 participants)

CAA - Activities and Education

Conferences and seminars

- 3.-6.6.2009: Seminar "Product Management and Development for Insurance Companies" – organization CAA and European Actuarial Academy (45 participants)
- 14.7.2009: Seminar „Enterprise Risk Management (ERM): A driving force for the insurance industry“ – organization CAA, SCOR Global Life CE and Croatian Insurance Bureau
- 19.11.2009: Seminar „Solvency II“ – organization CAA and Insurance Institute
- 30.09.2010: seminar „Solvency II“- organization CAA and Insurance Institute (more than 100 participants)
- 25.- 26.11.2010 and 29.- 30.11.2010: Seminar „Stochastic Methods of Claims Reserving“ – organization European Actuarial Academy and CAA (76 participants)

CAA - Activities and Education

Conferences and seminars

- 9.6.2011: workshop „Solvency II - QIS5“ – organization CAA and Croatian Insurance Bureau in cooperation with Munich Re (80 participants)
- October and December 2011: seminars in relation with Solvency II implementation and QIS 5 conduction – organization CAA and Croatian Insurance Bureau
- 11.7.2012: workshop „Implication of Test-Achats on the Croatian insurance market” – organization CAA and Croatian Insurance Bureau
- 4.- 5.10.2012: Seminar „Modelling; Actuarial methods for evaluating the prospective cost of solutions; Solvency II“
- 18.- 20.6.2013: Seminar „Stochastic Modeling – Theory and Reality from an Actuarial Perspective“– organization CAA and European Actuarial Academy
- 19.9.2013: workshop „ORSA“– organization CAA, AON Benfield and Croatian Insurance Bureau
- ...

Actuarial Profession in Croatia

Key Issues

Actuarial Profession in Croatia

KEY ISSUES

- Solvency II and Risk management
 - Preparatory phase
 - Guidelines and standards
 - Stress test
- CERA - enterprise risk management credential for actuaries (EAA and DAV initiative, CAA considers joining)
- small number of active members (locally and internationally)
 - limited financial resources

Thank you for your attention

www.hanfa.hr