

A PUBLIC POLICY MONOGRAPH

Role of the Actuary Under Federal Risk and Insurance Oversight

December 2010

American Academy of Actuaries
Financial Regulatory Reform Task Force



AMERICAN ACADEMY *of* ACTUARIES

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Developed by the
Financial Regulatory Reform Task Force
of the American Academy of Actuaries



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The American Academy of Actuaries is a professional association with over 17,000 members, whose mission is to assist public policymakers by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

2010 Financial Regulatory Reform Task Force

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Section I. Executive Summary

For more than 130 years, the insurance industry in the United States has been regulated almost exclusively by the individual states. Financial services reform legislation passed by the U.S. Congress in 2010 provides a greater role for the federal government in the monitoring and oversight of the financial services industry as a whole, including the insurance industry. This monograph focuses seeks to focus attention on a missing element of that legislation—specifically, a direct role for the actuarial profession under the new regulations.

This monograph has been prepared by the American Academy of Actuaries’¹ Financial Regulatory Reform Task Force to identify the important function that the actuarial profession currently serves in insurance regulation and oversight and the role the profession also can provide in ensuring the effectiveness of a federal regulatory or oversight framework concerned with the management of systemic risk.

Our views on these subjects are based on the strong belief that actuaries can provide valuable input into the design and implementation of any federal program tasked with monitoring risks to the solvency of the financial services industry. Actuaries are qualified by education, training, and experience to analyze, assess, and assist in managing the range of risks to which the financial services industry is exposed, particularly the insurance sector. The contributions of the actuarial profession therefore will be essential in ensuring the development and implementation of effective insurance industry oversight.

The actuarial profession today regularly provides input to insurance regulators concerning the design and implementation of regulations dealing with insurer solvency, including required minimum reserve levels and risk-based capital requirements. Actuaries also are employed in other sectors of the financial services industry beyond the insurance sector, including pension funding, healthcare, and investment banking. As a result of this wide-ranging expertise and training, the actuarial profession’s strong focus on the identification, quantification, and management of financial risk will be critical to the development and implementation of legislation and regulations that are appropriately consistent across the spectrum of the financial services industry.

Just as the insurance industry and the current system of state regulation depend upon the skills of actuaries, a federal system of regulation and oversight of the insurance industry also will need to utilize actuarial expertise. To achieve this, the Academy recommends that the following be reflected in the development of the Federal Insurance Office (FIO) and the regulations establishing the system of ongoing oversight of the financial services industry, including the insurance sector and the reports to be developed by the FIO:

¹ The American Academy of Actuaries (“Academy”) is a 17,000-member professional association whose mission is to serve the public on behalf of the U.S. actuarial profession. The Academy assists public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

1. Establish an Office of the Actuary with responsibility for supporting the preparation of reports and the development and implementation of regulations relating to the insurance industry. This office should be housed within the FIO. To obtain the greatest advantage of their unique and varying skills, actuaries also should serve in the Office of Financial Research (OFR), thus supporting regulatory efforts across the financial services spectrum.
2. The Office of the Actuary should be tasked with supporting the FIO, the OFR, the Federal Systemic Risk Regulator, and other related offices in identifying systemically significant financial institutions, developing and managing required databases, conducting research, and assisting in the measurement and management of financial risks.
3. The Office of the Actuary should serve as the liaison between the federal insurance and financial oversight offices and functional state insurance regulators, as well as international regulators.

By including these components in any federal structure of regulatory oversight of the insurance industry will be essential to preserving the overall solvency and financial integrity of the financial services industry.

Section II of this monograph provides information on a financial security programs and the role of actuaries in them. Section III provides background on the actuarial profession, and the role of the actuary in helping shape financial legislation. Section IV of this monograph provides more detailed information regarding each of the components outlined above.

Section II. The Role of Actuaries in Financial Security, Risk Quantification, and Management

Financial Security

Individuals, families, communities, and businesses all are exposed to risks that can have devastating consequences to financial security. These risks include:

- Property damage and loss from earthquakes, accidents, fire, and storms;
- Loss of income and medical expenses from poor health, disability, industrial accidents, and disease or premature death;
- Hospital, medical, and dental health care expenses
- Insufficient assets to fund retirement or long-term care needs;
- Liability arising from operating a business, performing a service, driving a vehicle, or personal actions;
- Loss due to counterparties' (including reinsurers for insurance companies) non-performance of obligations;
- Loss due to unexpected movements in exchange rates;
- Shareholder and other legal suits;
- Changes in the legal/socio-economic environment that could lead to increased insurance costs.

The financial consequences of these risks can be avoided, reduced, or transferred. For any particular person(s) or business, it can be difficult to predict the likelihood or impact of a specific peril. To address these and similar situations, financial security programs manage the risk and mitigate any adverse financial consequences.

Insurance is one of the most widely utilized components of a sound financial security program. By combining risk-sharing and risk-classification techniques, an insurance policy facilitates the transfer of potentially large financial consequences that an individual or entity might incur to all the insured members of a group.

The actuary prices and oversees the continued financial health of these financial security programs, quantifies the financial and insurance risks the programs are mitigating or transferring, and determines optimal approaches for insurance companies, industry, or other entities (e.g., pension plans, investment banks, and other financial services providers) to manage these risks. For insurance companies, those roles include the following:

Risk Quantification

Insurance companies are primarily in the business of providing products (insurance policies) that will facilitate the management of financial risks associated with insurable events, such as those detailed above. By amassing statistical data and utilizing mathematical models, actuaries quantify the risks assumed by insurers through these products and determine the price required (premiums) for the assumption of these risks. In addition, actuaries continually monitor the cash

flows of insurance companies and estimate the amount of assets necessary to ensure that policy claims are paid as they come due.

Risk Management

To survive and prosper as institutions, insurance companies must manage the risks created by the financial products they sell to individuals and businesses. To this end, insurers have implemented extensive risk-management practices, including risk identification, risk measurement, and risk management methodologies. Managing investment risk is a significant part of the management of overall company risk, since an insurer's products often require that assets be accumulated over time to fund future claim payments made to policyholders. The management of this investment component requires a clear understanding of asset liability matching and investment management techniques. Actuaries have the expertise to manage the insurance and investment risks inherent in the financial products that insurers sell, allowing them to fulfill their obligations to their customers.

Section III. The Actuarial Profession in Today's World

What is an Actuary?

Actuaries are experts in various aspects of the quantification of risk, in the design and pricing of insurance products, and in the management of financial security programs—all to maintain these programs on a sound financial basis. As a result, actuaries specialize in many different areas outside traditional insurance pricing, such as asset liability management, investment management, risk management (including the design and administration of hedging programs), and the appropriate funding of required loss reserves and pension liabilities.

Actuaries' knowledge of business, economics, finance, mathematics, and statistics enables them to evaluate the financial implications of uncertain future events, such as death, sickness, injury, disability, extreme medical costs, or property loss. An undergraduate degree in one of these academic areas typically is the start of the academic training for an actuary. In addition, a rigorous examination process over the course of several years is required to obtain a professional designation in the actuarial profession.

Actuaries often participate in setting company policies with respect to product and financial strategy. They often are called on to explain complex technical issues to company executives, government officials, shareholders, policyholders, or the public. As a result of their specific training and expertise, qualified actuaries can bridge the gap between the language of risk management in the insurance industry and its many constituencies— including legislators, regulators, investors, and the public.

Actuaries are employed both within the insurance industry by consulting firms, insurance companies, and regulatory agencies, and by many non-insurance financial services companies, such as investment banks, securities firms, and rating agencies. Due to the complexity of financial security programs, actuaries typically choose a specialty and will develop significant expertise in a particular practice area emphasizing one or more of the following: risk management, annuities, health insurance, life insurance, property and casualty insurance, or pensions.

Actuaries contribute to setting company policies with respect to product and financial strategy and are often called on to explain complex technical issues to company executives, government officials, shareholders, policyholders, or the public. As a result of their specific training and expertise, qualified actuaries can bridge the gap between the language of risk management in the insurance industry and its many constituencies including legislators, regulators, investors and the public.

Below are examples of specific functions performed by actuaries within the financial services industry.

Functions Performed by Actuaries in Financial Services Risk Evaluation

Development and Implementation of Risk-Based Capital Requirements

Risk -based capital requirements have been established by state regulators since 1993.

Risk-based capital requirements for all lines of insurance were developed and implemented in 1993. These capital levels, along with the state regulatory intervention authority that goes with them, have served the insurance industry well by providing regulators with the information and authority to identify and rehabilitate weaker insurance companies before a catastrophic bankruptcy occurs.

The minimum reserve and risk-based capital requirements initially were based solely on the application of specified factors to key items related to the company financials (e.g., statutory reserves, face amount of insurance in force, and other items). These formulaic reserve and capital requirements have been updated on an ongoing basis and actuaries, based on their research and knowledge and understanding of financial risk, contribute significantly to that process.

In recent years, there has been an increase in the number of insurance products offered with complex benefits. With the introduction of these complex benefits, the methodologies employed by actuaries to determine appropriate reserve and capital levels have evolved, becoming more dynamic and better reflective of the actual risks of insurers.

Creation and Pricing of Insurance Securitization Transactions

Since insurance-linked securities transactions, such as the securitization of insurance cash flows, began to appear in the capital markets, actuaries have been employed in increasing numbers by investment banks, rating agencies, and the insurance industry to assist in the evaluation of financial product risks. The role of the actuary in this sector has been to quantify independently the financial risks under alternate scenarios and to calculate required capital levels. These financial risks include both investment and insurance elements.

State and International Insurance Regulation

Actuaries have a long history of supporting the development and enforcement of laws and regulations, both directly as employees and on a consulting basis to state insurance departments and international regulatory bodies. State insurance departments employ actuaries to perform functions such as:

- Examination of adequacy of reserves and other liabilities as part of the periodic state financial exam review process;
- Review of company surplus levels in relation to contractual obligations of the company;
- Review of insurance company filings and submissions for compliance with state laws and regulations related to actuarial matters. For example, actuaries review property and casualty, accident, and health form and rate filings. They also review initial and renewal rate filings, for compliance with applicable laws and/or regulations;
- Development of current valuations for companies under examination, in liquidation or in conservatorship status;
- Support of state regulators and legislators in implementing laws and/or regulations of an actuarial nature;

- Representation of their state at the National Association of Insurance Commissioners level to ensure uniformity in the development of model laws and/or regulations involving actuarial issues;
- Assistance at the state level with implementing federal mandates of an actuarial nature (long-term care, Medicare supplement, Patient Protection and Affordable Care Act, etc.).

Actuaries also are employed internationally in providing similar support to the regulatory process of individual countries. Since there is no single international insurance regulator, the role of the actuary in the development of international protocols often is more advisory, such as through the International Actuarial Association (IAA)². Actuaries involved in this process provide input to the International Association of Insurance Supervisors (IAIS)³ on issues such as:

- Required minimum solvency requirements;
- Accounting for solvency purposes;
- Enterprise risk management and corporate governance;
- Reinsurance standards.

In addition, actuaries provide important input to the International Accounting Standards Board (IASB) which is responsible for developing International Financial Reporting Standards (IFRS)⁴. There currently are at least three task forces of the actuarial profession commenting on and modeling the proposed changes to US Generally Accepted Accounting Principles (GAAP) that would be required of insurance companies should current attempts to merge International Financial Reporting Standards and US GAAP be successful. A representative of the IAA sits on the IASB's Insurance Working Group and the Financial Instruments Working Group. Panels from the IAA have given educational presentations to the IASB on several occasions, and committees of both the IAA and the Academy provide extensive comments to both the IAIS and the IASB on documents they release for comment.

Staffing of the FIO and other parts of a federal insurance regulatory infrastructure should include qualified actuaries to interact effectively with foreign counterparts in the discussion of international regulatory issues related to prudential oversight and other regulatory matters. Details regarding the actuary's involvement with state regulation, which we view as a model for any federal structure, can be found in Appendix F.

Analyzing Financial Insurance Programs

² International Actuarial Association (IAA) website:

<http://www.actuaries.org/index.cfm?LANG=EN&DSP=ABOUT&ACT=INDEX>

³ International Association of Insurance Supervisors (IAIS) website:

<http://www.iaisweb.org/index.cfm?pageID=28>

⁴ International Financial Reporting Standards (IFRS) website:

<http://www.ifrs.org/The+organisation/IASCF+and+IASB.htm>

Actuaries already play a key role in monitoring insurance products that provide protection of principal and/or interest for many types of credit instruments. Municipal and corporate bond insurance serves an essential function in the U.S. economy. By providing protection to investors, bond insurance facilitates increased liquidity and encourages investment in the economic infrastructure.

The analysis of potential future losses for bond insurers is critical for investors to ensure that their principal is safe. Actuaries play a key role in this function by analyzing the potential impact of future loss events, thus providing additional certainty that there will be sufficient funds available to pay off required obligations. This is in stark contrast to the absence of a role for actuaries in the pricing and risk- management of credit default swaps.

Providing Actuarial Expertise in Federal Agencies

Actuaries currently provide their expertise across a multitude of areas within existing federal agencies, including the Social Security Administration, Centers for Medicare and Medicaid Services, the Internal Revenue Service, the Department of the Treasury, the Department of Health and Human Services, the Federal Housing Authority, the Department of Energy, the Department of Defense, the Government Accountability Office, the Department of Agriculture, the Office of Personnel Management, and the Department of Labor, the Social Security Administration, and the Pension Benefit Guaranty Corp.

Gathering and Analyzing Financial Data

Federal oversight of the insurance industry will require the accumulation of substantial data, some of which may not be currently available. Actuaries necessarily utilize vast amounts of financial data in their work and therefore are in the forefront of the design and accumulation of insurance industry data. Familiarity with the data currently available from the insurance sector, coupled with an understanding of the data that will be required in the future to manage the risks from new and more complex products, will be instrumental in any program to effectively oversee the insurance industry.

Unique to the U.S. insurance industry are two major statistical agencies: the Insurance Services Office and the National Council on Compensation Insurance. As members of these organizations, actuaries have taken a lead role in the development of industry studies and the collection of detailed information that is submitted by virtually all insurers in the United States for their non-life lines of business (e.g., auto and homeowner's insurance). The data from these studies are used both in the design of new policies and in the rating of insurance.

In addition, the Society of Actuaries collects insurance industry data and conducts regular studies of experience for various insurance product risk factors including mortality, morbidity, and lapse. These data collection processes provide a viable model as to how data can be collected for financial monitoring purposes. Because of their role in defining and accumulating industry- wide data, actuaries are uniquely qualified to design useful financial data collections for financial monitoring purposes.

Additional information about the actuarial profession, the Academy, and related organizations can be found in Appendices A-D.

Section IV. Role of the Actuary in Federal Insurance Regulation and Oversight

Financially sound insurance companies could not exist without actuaries, who are recognized within the industry as the experts in quantifying and managing financial security risks. The actuarial profession similarly supports in crucial ways the sound operation and structure of insurance regulation and oversight.

The Academy is the professional organization through which the actuarial profession has educated public policy makers in insurance and financial security risk. Its goal has been to produce actuarially sound regulations that protect both the solvency of financial security systems and the interests of all policyholders, consistent with the objectives of its constituencies.

Role of the Actuary under Federal Oversight of the Insurance Industry

To ensure that the regulatory system protects all stakeholders, it is essential that the actuarial functions and related reporting responsibilities continue under the federal oversight structure. Based upon the Academy's analysis of the legislation recently passed, however, a specific role for the actuary has not been clearly defined.

The Task Force therefore recommends that the actuarial role and responsibilities be defined clearly by incorporating the following essential actuarial components into any laws that implement a federal insurance regulatory system.

1. The Office of the Actuary be established.

A chief actuary should be responsible for staffing the Office of the Actuary with actuarial specialists to facilitate the effective performance of the regulatory and oversight function related to insurance.

2. The Office of the Actuary should support the development of regulations related to financial risks.

The Office of the Actuary should advise the FIO, the OFR, and the Federal Systemic Risk Regulator on all public policy and regulatory reviews related to financial risks.

The responsibilities of this office should include the following functions:

- Identification of issues or gaps in regulation that could contribute to systemic risk in the financial services industry;
- Identification of systemically important insurance companies;
- Development of risk metrics to aid in monitoring systemic risk;
- Identification of the data requirements associated with risk metrics.

3. The Office of the Actuary should serve as a liaison between federal agencies and functional state insurance regulators, as well as their international counterparts.

The particular knowledge and skill sets of many actuaries, including their experience in complying with current regulatory requirements and interacting with regulatory authorities, can provide an important link between state regulators and federal authorities seeking to better understand and control risks in the financial sector of the economy, including the insurance industry. This linkage is vital in ensuring that the relationship with state regulators supports the federal systemic risk regulator in optimizing the effectiveness of the regulatory process.

In addition, since insurance is a global business and many U.S. companies have subsidiaries and/or branches overseas, the actions of financial services companies both inside and outside of the country can have a significant effect on their ability to satisfy their obligations in the United States.

U.S. actuaries regularly work for and with international insurers, whether through their domestic holdings or abroad, and because of that experience are knowledgeable regarding the following important international financial monitoring functions:

- Tracking international events that could impair significantly foreign insurers active in the United States;
- Monitoring the economic viability of international reinsurers;
- Coordinating with other actuarial organizations in other countries to research and seek out available statistical information for solvency monitoring purposes and;
- Understanding the differences between statutory and GAAP⁵ accounting in the United States as compared to the financial accounting systems of other countries as it relates to solvency.

In summary, a significant role for actuaries is essential to the development and implementation of effective federal legislation related to financial risks.

⁵ The common set of accounting principles, standards, and procedures that companies use to compile their financial statements. GAAP are a combination of authoritative standards (set by policy boards) and are the commonly accepted ways of recording and reporting accounting information.

APPENDIX A – The American Academy of Actuaries

The American Academy of Actuaries is a professional association with over 17,000 members, whose mission is to serve the public on behalf of the U.S. actuarial profession. The Academy assists public policymakers at all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also establishes and maintains qualification standards for actuaries issuing statements of actuarial opinion in the U.S., and houses and supports the Actuarial Standards Board and the Actuarial Board for Counseling and Discipline (discussed in Appendices B and C, respectively). It proactively identifies and addresses issues on behalf of the public in matters where actuarial science provides a unique understanding. Globally, the Academy coordinates the representation of the U.S. profession.

Actuaries must meet educational and other requirements to obtain membership in the Academy. Applicants can satisfy the education component by attaining any of the following credentials:

- Associateship in the Casualty Actuarial Society or the Society of Actuaries.
- M.S.P.A. or F.S.P.A. in the American Society of Pension Professionals and Actuaries.
- Membership in the Conference of Consulting Actuaries.
- Enrolled Actuary status under Title III, Section C of the Employee Retirement Income Security Act of 1974.
- Fellowship in the Canadian Institute of Actuaries, the Institute and Faculty of Actuaries and the Institute of Actuaries of Australia.
- Membership in the Colegio Nacional de Actuarios in Mexico.

An applicant may also submit other actuarial educational credentials to the Academy for consideration in satisfying the education component of admission.

In addition to the education requirement, applicants must be of good moral character and professional integrity, and certify their willingness to comply with the Qualification Standards, Actuarial Standards of Practice, and the Code of Professional Conduct. Residents of the U.S. for fewer than 3 years and nonresidents must also certify their familiarity with U.S. laws and practices in their actuarial practice area.

APPENDIX B – The Actuarial Standards Board

The Actuarial Standards Board (ASB) establishes and improves standards of actuarial practice. These Actuarial Standards of Practice (ASOPs) identify what the actuary should consider, document, and disclose when performing an actuarial assignment. The ASB's goal is to set standards for appropriate practice for the United States.

Creation or revision of an ASOP by the ASB typically is a significant undertaking involving the following process:

1. Review and evaluation of current and emerging practices;
2. Determination of appropriate guidance;
3. Publication of an exposure draft to obtain input from actuaries and other interested parties; and
4. Consideration of all comments received and publication of a final standard or another exposure draft.

Standards of practice assure the public that actuaries are professionally accountable. At the same time, they provide actuaries with a basis for ensuring that their work will conform to appropriate practices. Standards of practice also demonstrate to regulatory authorities that they can depend on the actuarial profession to act effectively in the public interest. Such standards, coupled with a disciplinary process to enforce them, show that the profession governs itself and takes an active interest in protecting the public.

APPENDIX C – The Actuarial Board for Counseling and Discipline

The Actuarial Board for Counseling and Discipline (ABCD) was established by the U.S. actuarial organizations to strengthen members' adherence to applicable standards of ethical and professional conduct.

The ABCD has two primary functions:

- It responds to actuaries' requests for guidance on professional issues.
- It considers complaints about possible violations of the actuarial Code(s) of Professional Conduct and, when appropriate, makes disciplinary recommendations to the relevant actuarial organizations. The ABCD may also counsel an actuary in conjunction with, or in lieu of, a recommendation of discipline.

The ABCD's members also conduct educational outreach efforts, which include making presentations and writing articles in actuarial publications to help actuaries, regulators, and other stakeholders become more familiar with the ABCD's work.

APPENDIX D – Other U. S. –based Actuarial Organizations

There are four other major U.S.-based actuarial organizations that provide services to actuaries. These organizations address specific areas of interest or need to actuaries in their area of specialization. These organizations are the American Society of Pension Professionals and Actuaries (ASPPA), the Casualty Actuarial Society (CAS), the Conference of Consulting Actuaries (CCA), and the Society of Actuaries (SOA). The primary purpose of each of these organizations is described below.

American Society of Pension Professionals and Actuaries (ASPPA)

ASPPA is a national organization for career retirement plan professionals. The purpose of ASPPA is to educate retirement plan and benefits professionals and to preserve and enhance the private pension system.

www.asppa.org

The Casualty Actuary Society (CAS)

The Casualty Actuarial Society is a professional organization whose purpose is the advancement of the body of knowledge of actuarial science applied to property, casualty, and similar risk exposures. This is accomplished through communicating with the public affected by insurance as well as presenting and discussing papers, attending seminars and workshops, conducting research, and maintaining a comprehensive library collection.

www.casact.org

The Conference of Consulting Actuaries (CCA)

The Conference of Consulting Actuaries advances the practice of actuarial consultants by serving the professional needs of consulting actuaries and by promoting members' views within the actuarial profession. This is accomplished by providing educational forums for consulting

actuaries to enhance their skills, ensuring members are represented in issues affecting their practices and clients, and promoting and enforcing professional standards.

www.ccactuaries.org

The Society of Actuaries (SOA)

The Society of Actuaries is an educational, research, and professional organization for actuaries in the United States and Canada. The SOA's mission is to advance actuarial knowledge and to enhance the ability of actuaries to provide expert advice and relevant solutions for financial, business, and societal problems involving uncertain future events.

www.soa.org

APPENDIX E – Actuarial Training and Practice

Actuaries typically possess a strong background in topics such as mathematics, economics, statistics, and finance. An undergraduate degree in one of these areas, or in actuarial science (as is offered at some schools), frequently provides the foundation for a career as an actuary. Actuaries earn professional designations after successful completion of a rigorous examination process over the course of several years. The Society of Actuaries (SOA) and the Casualty Actuarial Society (CAS) sponsor the examinations. An actuary successfully completing the SOA's examination process is awarded the credential of Associate of the Society of Actuaries (ASA) and, after passing additional exams, Fellow of the Society of Actuaries (FSA). Similarly, actuaries earn the designations of Associate of the Casualty Actuarial Society (ACAS) and Fellow of the Casualty Actuarial Society (FCAS) through the CAS examination process. Generally, individuals who achieve an FSA designation work with life, health or pension product lines and an individual with an FCAS would generally work with property and casualty and health coverages.

In 2007, the SOA announced a new professional credential focused on enterprise risk management. The Chartered Enterprise Risk Analyst (CERA) designation is a new international credential encompassing the most comprehensive and rigorous demonstration of enterprise risk management (ERM) expertise available. The CERA credential stems from the same rigorous process through which actuaries earn the ASA and FSA. In addition to the high recognition of actuarial credentials among employers in insurance, reinsurance and consulting markets, a CERA is a member of a professional organization with a code of ethics, professional standards, education requirements and discipline.

In addition to the requirements for attaining professional designation, actuaries must satisfy continuing education requirements in relevant areas, including professionalism, in order to issue statements of actuarial opinion.

In their professional roles, actuaries are essential to the measurement and management of risk in financial security programs. Actuaries are involved in assessing risk, designing insurance programs, establishing prices for these programs, and ensuring that these plans are maintained on a sound financial basis. Actuaries make use of their broad knowledge of business, economics, finance, mathematics, and statistics to analyze the risks related to various contingencies and perils.

Many actuaries are employed in the insurance industry, for insurance companies, health care organizations, consulting firms, or regulatory agencies. Actuaries are also employed in other non-insurance financial services institutions such as banks and securities firms as well as for the federal government (e.g., the Centers for Medicare and Medicaid Services, General Accounting Office, Pension Benefit Guaranty Corporation, Railroad Retirement Board, and Social Security Administration). Actuaries will generally specialize in a particular insurance segment such as property/casualty or life or health insurance, or pension benefits.

Regardless of specialty, actuaries assemble and analyze data to estimate probabilities of an event taking place, such as death, sickness, injury, disability, or property loss. They also address financial questions, including those involving the level of pension contributions required to

produce a certain retirement income level or how a company should invest resources to maximize return on investment in light of potential risk. In addition, actuaries are involved in setting company policy and insurance regulations and are called upon to explain complex technical matters to company executives, government officials, shareholders, policyholders, or the public in general. Using this broad experience and knowledge base, actuaries are often heavily involved in the development of plans to enter into new lines of business or new geographic markets with existing lines of business by forecasting the financial impact under various scenarios.

APPENDIX F – Role of the Actuary in Existing State Insurance Regulation

Actuaries play a vital role in the design and operation of the insurance regulatory framework as employees of insurance regulators. Their primary responsibility is to ensure that companies within their jurisdiction have complied with the specific actuarial requirements included in the insurance regulations. Of greatest importance, these actuaries protect insurance consumers by analyzing and monitoring insurance companies to help prevent insolvencies. In addition, many serve as advisors to regulators—either individually, as interested persons, or as members of Academy committees that make recommendations to the regulatory authority.

Actuaries employed within the state regulatory system have many responsibilities, including:

- Monitoring the solvency and financial condition of domestic insurers by reviewing companies' reserves and risk-based capital calculations, and the Statements of Actuarial Opinion provided by the Appointed Actuary of each company;
- Evaluating the effectiveness of company risk management frameworks that identify, measure, monitor, and mitigate company risks from all sources;
- Reviewing product-related Actuarial Certifications for compliance with prescriptive laws and regulations;
- Evaluating the reasonableness of premiums for certain insurance plans;
- Advising the regulatory authorities on the impact to the public and others of changes in corporate structures, including acquisitions, corporate re-organizations, and mergers;
- Assisting regulatory authorities in managing the rehabilitation or liquidation process for troubled insurance companies;
- Developing and implementing changes to insurance laws and regulations concerning proper reserve levels, premium rates, accounting, and solvency requirements;
- Developing premiums by state, rate class, and geographical area;
- Monitoring reinsurer solvency;
- Developing statistical plans for industry data submission.