The use of captive reinsurers by commercial life insurers has recently garnered a lot of attention. Following the financial crisis, life insurers have increasingly used captives to finance the perceived “reserve redundancies” associated with XXX¹ and AXXX² reserves (reserve requirements for universal life products employing secondary guarantees). These captive reinsurance transactions free up capital the insurers can use to help gain a competitive edge in the marketplace. Concerns over captive reinsurance transactions have led regulators to develop a draft white paper titled, Captives and Special Purpose Vehicles³ (White Paper). This article will examine some of the preliminary findings in the White Paper, as well as its conclusions and recommendations.

**Captive**

Historically, captives were originally established as an insurance company by one or more non-insurance companies to insure the risks of its owner (or owners). Captives are essentially a form of self-insurance, whereby the insurer is owned wholly by the insured. They are formed to cover a wide range of risks. Practically every risk underwritten by a commercial insurer can be provided by a captive. The type of entity forming a traditional captive varies from a major multinational corporation—the vast majority of Fortune 500 companies have captive subsidiaries—to a nonprofit organization.

Once established, the captive operates like any commercial insurance company and is subject to state regulatory requirements, including reporting, capital and reserve requirements. However, because captives were traditionally insuring the risks of their owners, the regulatory requirements for captives are generally less stringent than for other commercial insurers. Currently, more than 30 states, the District of Columbia and the U.S. Virgin Islands allow captives to domicile and form in their respective jurisdictions. The number of captive domiciles has increased significantly in recent years.

For more on captives, including the types of captives and the origin and domicile of captives, please see “Recent Developments in the Captive Insurance Industry” published in the January 2012 CIPR Newsletter.⁴

(Continued on page 3)

¹ Used to describe the actuarial reserves required to be held under the NAIC Valuation of Life Insurance Policies Model Regulation (#830), which is more commonly referred to as Regulation XXX (or, more simply, XXX).
² Used to describe the actuarial reserves required to be held under the NAIC Actuarial Guideline XXXVIII—The Application of the Valuation of Life Insurance Policies Model Regulation (AG 38), which is more commonly referred to as AXXX.
³ Drafted by the NAIC Captive and Special Purpose Vehicle Use (E) Subgroup.
⁴ www.naic.org/cipr_newsletter_archive/vol2_captive.htm.
CIPR NEWSLETTER INTRODUCTION

By Eric Nordman, CIPR Director

We are pleased to provide the latest issue of the Center for Insurance Policy and Research (CIPR) Newsletter. Our goal is to provide thought leadership and information for an audience including U.S. and international regulators, state and federal policy makers, lawmakers, academics, researchers and consumers on the latest regulatory activities and key issues, trends and risks affecting the insurance industry. We want to provide you with insight into the major challenges facing the regulatory community and to promote a greater understanding of a wide range of national and international developments in the insurance world.

This issue includes seven articles we hope are of great interest to many of our readers. We begin with a timely discussion of life insurer-owned captives. Concerns over captive reinsurance transactions have led regulators to develop a draft white paper on insurers’ use of captives and special purpose vehicles. Shanique Hall, CIPR Manager, and Dan Daveline, Assistant Director, Financial Regulatory Services, examine some of the regulatory concerns with life insurer-owned captives and the draft white papers conclusions and recommendations.

Hurricane deductibles, which have become a hot topic following Superstorm Sandy, are the subject of our second article. Shanique Hall writes about the different types of hurricane deductibles and discusses some of the issues that arose following Sandy. Shanique Hall also provides a summary of the joint report issued by the Steering Committee of the U.S.-EU Dialogue Project. The joint report, which was released in December 2012, summarizes the key commonalities and differences between insurance regulatory regimes in the United States and the European Union.

Another timely article, which I contributed, explores whether acts of terrorism are insurable. The recent attack at the Boston Marathon reminds us terrorism is never far away. The article also discusses the Terrorism Risk Insurance Act which is currently set to expire on December 31, 2014.

Anne Obersteadt, CIPR Senior Researcher, discusses how a new market for managing longevity risk is emerging. She provides a comprehensive overview of longevity risk and explores emerging solutions for longevity risk protection, including the driving factors behind and the regulatory concerns about these solutions.

This edition also features an article on how the CIPR is diligently working to improve its public offerings and become the go-to website for regulatory and public policy information. Shanique Hall discusses how the CIPR website is central to the communication of NAIC research and public policy activities and describes some of the valuable research tools the website offers for regulators, consumers, industry and academia.

We close with the NAIC Research and Actuarial Department data at a glance article. This quarter, a look at the top ten writers for homeowners’ insurance and private passenger auto insurance is included.

I hope you enjoy the Newsletter. Your comments and suggestions for improvement are always welcome.
**LIFE INSURER-OWNED CAPTIVES (CONTINUED)**

### LIFE INSURER CAPTIVES

Following articles in *The New York Times* and *The Wall Street Journal* portraying captives as a “shadow insurance industry,” the NAIC formed the Captive and Special Purpose Vehicle (SPV) Use Subgroup (Subgroup) under the Financial Condition (E) Committee in early 2012. The Subgroup was charged to study insurers’ use of captives and SPVs to transfer risk in relation to existing state laws and regulations. The Subgroup’s focus and concerns do not relate to the traditional self-insurance captive structure but, rather, to the use of captives and SPVs by life insurance companies or insurance holding companies to transfer risks off of the insurers’ books, thereby relieving themselves of conservative reserve requirements.

The Subgroup began to study whether the existing regulatory framework for captives is appropriate for regulating an insurance company or SPV that is reinsuring insurance risks. A confidential regulator-only request for comment was sent to state insurance regulators in all 50 states and the District of Columbia with respect to their respective states’ laws on captives and SPVs. Results from the survey suggested that, while commercial insurers cede business to captives for a variety of reasons, the majority use of captive/SPVs by commercial insurers was related to the financing of XXX and AXXX reserve redundancies. Thus, the Subgroup concluded that it appears the use of captives may be more prevalent among life insurers than other lines of business.

The introduction of Regulation XXX by the NAIC in February 2001 sparked the creation of various XXX reserve funding securitization structures to help ease conservative reserving standards. Triple-X reserves require conservative assumptions and valuation methodologies for determining the level of statutory “excess reserves” required to fulfill long-term premium rate guarantees on life insurance policies. These conservative assumptions can result in higher reserve levels than were previously maintained and have fueled a significant expansion in captive reinsurers and through affiliated SPVs, such as insurance securitizations. Following the financial crisis, these transactions became more common, when life insurers recognized the ability or costs associated with using securitization to finance these redundancies had materially changed.

Under the transactions with a captive, the commercial life insurer cedes its XXX and/or AXXX reserves to the captive. The captive assumes the full statutory reserve liability and secures those reserves through various means. The ceding insurer regulator and the captive regulator require the insurer to determine the economic reserves (or actual expected losses) associated with the obligations and to obtain a third-party actuarial review to ascertain such value. These economic reserves, plus a small margin for adverse development, must be secured by traditional high-quality assets held by the ceding company. Reserves the company has determined redundant are required to be secured by a letter of credit (LOC) to the benefit of the ceding company.

### REGULATORY CONCERNS / WHITE PAPER

The Subgroup identified a number of regulatory concerns associated with the broadened use of captive reinsurance transactions. The primary concern is that these transactions are being used to circumvent statutory accounting reserve requirements. Of particular concern is the use of LOCs to support captives. Statutory accounting requirements limit the types of assets that can count as admitted assets. An LOC is not an admitted asset under statutory accounting; however, some states allow captive insurers to count a LOC as an admitted asset. Thus, a life insurer can improve its balance sheet and preserve capital resources by transferring the XXX and AXXX reserves to their captive. Other concerns are that such transactions are not as transparent as they should be and the lack of consistency, as each state has implemented its own unique regulatory structure for captives.

The Subgroup began working on the White Paper in 2012, which summarizes its findings of the survey. In an effort to reach a stronger consensus among regulators and to seek input from the industry, the White Paper was released for public comment prior to the NAIC 2012 Fall National Meeting. Based on comments received, the White Paper was subsequently redrafted and re-exposed in March 2013 for a 45-day public comment period.

The revised draft makes the following recommendations regarding the regulation of captives and SPVs to the Financial Condition (E) Committee for their consideration and/or further possible study.

1. **Accounting Considerations**

With the recent adoption of the Valuation Manual to provide for a principle-based approach for valuing life insurance reserves, and more immediately changes made to *Actuarial Guideline XXXVIII—The Application of the Valuation of Life Insurance Policies Model Regulation* (AG 38) by the NAIC in 2012, concerns with perceived reserve redundancies should be addressed. Under a principle-based approach, the impetus to form new captives and SPVs in these

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1 Thirty-five states responded to the survey. Summary of the responses can be found at www.naic.org/documents/committees_e_cspv_sg_related_docs_survey_results_march_2012.pdf.
instances should be eliminated. However, the Subgroup recommends a separate subgroup be formed to develop possible solutions for addressing any remaining XXX and AXXX perceived redundancies issues.

2. Confidentiality
The Subgroup recommends the issue of confidentiality be studied more closely, in particular, greater clarity regarding the specific reason for and against the use of confidentially for such entities. In addition, because each jurisdiction has implemented its own unique structure for captives, the Subgroup notes a framework might need to be developed that would provide greater uniformity. Appropriate types of information that should/should not be held confidential might also need to be considered.

3. Access to Alternative Markets
The Subgroup supports the use of solutions designed to shift risk to the capital markets or provide alternative forms of business financing. The Subgroup suggests the Special Purpose Reinsurance Vehicle Model Act Model (#789) be re-evaluated and updated as necessary to reflect alternative market solutions acceptable to state insurance regulators to ensure there is a uniform framework for the implementation of alternative market solutions. In addition, the Subgroup suggests the NAIC should further encourage the states to adopt Model #789 and should consider making Model #789 an accreditation standard in those states that have an active captive and SPV market.

4. IAIS Principles, Standards and Guidance
The Subgroup recommends the NAIC closely monitor the ongoing developments with respect to International Association of Insurance Supervisors (IAIS) principles, standards and guidance. In addition, the NAIC should consider, where appropriate, enhancements to the U.S. captive and SPV regulatory framework in preparation for future Financial Sector Assessment Program (FSAP) reviews.

5. Credit for Reinsurance Model Enhancements
The Subgroup recommends transactions involving conditional LOCs or parental guarantees effectively permit assets to support reinsurance recoverables, either as collateral or as capital, in forms that may otherwise inconsistent with requirements under the credit for reinsurance models or other financial solvency requirements applicable to U.S.-domiciles commercial assuming insurers. Moreover, consideration should be given to further study the effects of, and potential limits on, the variability in qualified LOCs or any other security that might not provide the intended protections provided within Model #785.

6. Disclosure and Transparency
The Subgroup recommends enhanced disclosure in ceding company statements regarding the impact of the transactions on the financial position of the ceding insurers. The Subgroup suggests disclosure requirements be enhanced in this area within the Note to Financial Statement 10M.

The Subgroup recommends the development of guidance in the Financial Analysis Handbook for the states’ review and ongoing analysis of transactions involving captives and SPVs, including specific considerations of such transactions when performing holding company analysis.

● CONCLUSION
Life insurers in the United States have long debated the reserve redundancies associated with XXX and AXXX. This concern was recognized by insurance regulators in the mid-2000s with the NAIC principle-based reserving (PBR) project. This project has recently resulted in the NAIC’s adoption of a Valuation Manual, which, once adopted by the states, will specifically address the concern, but doing so in a comprehensive manner to allow similar “principles” to be used with other products in the future. However, PBR will not be effective for a number of years as there are numerous implementation issues to be addressed before it is operational.

At the NAIC 2012 Fall National Meeting, the NAIC’s adoption of PBR included a commitment to address issues with captive use by life insurers. Regulators generally agreed that, under a principle-based approach, rather than using captives or other SPVs, concerns with the level of reserves should be addressed within the traditional insurance solvency system, even if it means carving out a temporary niche to address an immediate problem. The NAIC also recently adopted revisions to AG 38 that address these concerns in a more immediate manner.

The Subgroup continues its work on the White Paper. Following the exposure period and any additional redrafting, it is expected the Subgroup will submit the White Paper to the Financial Condition (E) Committee, which, in turn, will determine next steps.

For more on the FSAP see www.naic.org/cipr_topics/topic_fsap.htm.
The Debate Over Hurricane Deductibles

By Shanique Hall, CIPR Manager

The devastating effects of Superstorm Sandy, which made landfall Oct. 29, 2012, along the Northeast coast, brought the technical distinction of hurricane and named storm deductibles to the forefront. This distinction is important, as it can have significant impact on how much homeowners (and insurers) must pay for losses. Hurricane Andrew in 1992 and subsequent hurricanes have caused insurers to take steps to mitigate future losses in hurricane-prone areas. In recent years, many insurers have added hurricane and named storm deductibles tied to a percentage of the home’s insured value. This article will examine the different types of hurricane deductibles and some of the issues that arose following Superstorm Sandy.

Types of Property Deductibles

A deductible is the amount of loss paid by the policyholder before any loss is paid by the insurer. For most “perils” (such as fire damage and theft), the standard deductible is a flat dollar amount (e.g., $500 or $1,000). This means a policyholder would be responsible to pay the flat dollar amount out of pocket for a loss.

In many coastal states, homeowners insurance policies also include deductibles that apply only to damage caused by hurricanes. A hurricane, or named storm, deductible is applied separately from standard perils deductibles and is typically a higher dollar amount, meaning a policyholder would be responsible for a larger portion of any loss. It can be expressed as a fixed dollar deductible or, more commonly, as a percentage of the home’s insured value, which can vary from 1% to as high as 10%.

For example, with a percentage deductible, if a home is insured for $200,000 with a 2% hurricane deductible, the policyholder would have to pay the first $4,000 needed to repair the home if the loss was caused by a hurricane or named storm. A 10% deductible on that same policy means a policyholder is responsible for the first $20,000 of a claim. In some areas, policyholders might have the option of paying a higher premium in return for a higher flat dollar amount deductible, although in some high-risk areas, the percentage deductible might be mandatory from the insurer’s perspective.

Although definitions vary, a hurricane deductible typically applies to damage solely from a hurricane as categorized by the National Weather Service or U.S. National Hurricane Center. A named storm deductible applies to a weather event declared as a hurricane, typhoon, tropical storm or cyclone by the U.S. National Weather Service, the U.S. National Hurricane Center or the U.S. National Oceanic and Atmospheric Administration, and where a number or “name” has been applied (e.g., Hurricane Andrew, Superstorm Sandy, etc.). Any loss must have been caused or resulted from the named storm event.

Some policies also include a windstorm or wind/hail deductible. These usually apply to any kind of damage from a wind or hail event. For example, if a tree falls on a policyholder’s roof on a windy day, the claim would be subject to the wind deductible. Flood damage, however, is covered only if a separate flood insurance policy was purchased, generally from the National Flood Insurance Program or from a private company.

Whether a hurricane, named storm or windstorm deductible applies to a claim depends on the applicable “trigger” selected by the insurance company. These deductibles apply only if certain parameters spelled out in the insurance contract are met, which are often proscribed or limited in state law. While there are similarities among the state laws, no two laws are identical as triggers vary from state to state, as well as from insurer to insurer.

Origin of Hurricane Deductibles

In the mid-1990s, insurers began to implement hurricane and percentage deductibles in coastal states. The origination of these deductibles can be traced back to Hurricane Andrew. At the time, Andrew was the most expensive storm in U.S. history, far exceeding the losses caused by the previous most costly storm (Hurricane Hugo in 1989). After the extraordinary losses of Andrew, reinsurance became more expensive and less available, and reinsurers began encouraging primary insurers to take steps to better manage their catastrophe risk. One of the answers for insurers was to limit potential losses through higher deductibles, transferring risk back to the policyholder.

Hurricane deductibles are part of a broad effort by insurers to keep insurance coverage available and affordable. The number of extreme weather events has dramatically increased over the last decades. At the same time, more and more people and businesses have moved closer to shorelines, and property values have generally increased. Hurricane deductibles were introduced as a risk-sharing mechanism, by having the policyholder bear more of the risk, without raising overall premiums to unaffordable levels.

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The Debate over Hurricane Deductibles (continued)

deductibles also give property owners the incentive to protect their property (e.g., installing storm doors or special windows and storm shutters that can withstand high winds).

The following states currently have some form of hurricane deductible in place: Alabama, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Louisiana, Maine, Maryland, Massachusetts, Mississippi, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, South Carolina, Texas and Virginia. Other states allow insurers to include hurricane deductibles in property insurance products.

**Superstorm Sandy**

Superstorm Sandy raised awareness about hurricane deductibles and the higher out-of-pocket costs that may apply. Sandy’s storm surge and high winds flooded New York City and coastal communities. The storm left millions without power and caused an estimated $20 billion to $50 billion in damage. It is expected Superstorm Sandy will be the third most costly natural disaster in U.S. history after Hurricane Katrina and Hurricane Andrew.

Sandy was a unique megastorm: according to meteorologists, it was a tropical storm, combined with a winter storm, combined with frigid Canadian air, combined with a high tide. It was designated a hurricane for much of the time it traveled up the Atlantic coast and hurricane warnings were issued. However, before Sandy made landfall, she was downgraded by the National Weather Service from a Category 1 hurricane to a post-tropical cyclone, the designation for storms maxing out with 73 mph winds. Sandy lacked the sustained wind speeds of 75 miles per hour necessary to qualify as a hurricane when it hit the East Coast.

Noting Sandy’s diminished status, several governors issued statements that insurers must treat Sandy as a tropical storm and not a hurricane. They insisted policyholders should not have to pay hurricane or named storm deductibles on insurance claims stemming from Sandy, and urged insurance companies to fully compensate their policyholders. Officials contend the deductibles were not triggered because Sandy was not classified as a hurricane when it made landfall.

New York Gov. Andrew Cuomo said, “Homeowners should not have to pay hurricane deductibles for damage caused by the storm and insurers should understand the Department of Financial Services will be monitoring how claims are handled.” Connecticut Gov. Dannel Malloy and New Jersey Gov. Chris Christie also said the lower deductibles would apply to homes in their states.

The no-hurricane deductible order lessens some of the financial burden associated with Sandy by shifting a portion of the claim costs back to insurers.

**Insurer and Consumer Issues**

Both insurers and consumers have issues with the use of hurricane deductibles. Insurers are concerned about the clarity of state laws and the actions of state officials that might limit the use of hurricane deductibles. Insurers want to know the policy provisions containing hurricane deductibles will be enforced so they can rely on the expected loss costs used as the building block for their rates.

Consumers are concerned about what (to them) seems an unjustified cost-shifting at a time when they can least afford it. Consumers also complain about lack of meaningful disclosure regarding the deductibles. They would like meaningful disclosure so they can know what they are buying and prepare for funding the portion of a loss not transferred to the insurer. The NAIC is working on improving transparency and readability of policies and disclosures through the Property and Casualty Insurance (C) Committee and its working groups.

To address these issues, one of the possible solutions NAIC is exploring is the introduction of pre-tax deductible savings accounts. Conceptually, the savings account would allow a homeowner to pre-fund disaster-related costs in a tax-free or tax-deferred manner. The Property and Casualty Insurance (C) Committee will explore the implications of deductible savings accounts to determine whether the NAIC should support legislation to allow or encourage them.

**Summary**

Superstorm Sandy’s unique nature could result in future policy changes and possible changes to state hurricane deductible laws. Shortly after Superstorm Sandy, New York legislators introduced a bill (S01760/A01222) seeking to cap the percentage-based hurricane deductibles for homeowners in New York state at $1,500. The bill also seeks to establish that hurricane deductibles shall only be applicable to losses incurred in windstorms with speeds greater than 125 miles per hour. This is likely to be a hotly debated topic going forward for insurers and homeowners, as percentage deductibles could begin to be introduced for other property insurance perils (e.g., wildfires).
U.S.-EU DIALOGUE PROJECT: A COMPARISON OF THE TWO REGULATORY REGIMES AND THE WAY FORWARD

By Shanique Hall, CIPR Manager*

For more than a decade, the NAIC and state insurance regulators have regularly taken part in on-going U.S.-EU (European Union) insurance regulatory dialogues on various issues of mutual regulatory concern. Together, the U.S. and the EU oversee more than 70% of the global insurance market. The global financial crisis has proven that better cross-border cooperation and regulatory modernization is important so that our regulatory communities are better equipped to face challenges that arise. These recurring dialogues have been critical to harmonizing regulatory approaches where appropriate and fostering regulator trust and mutual understanding between our respective jurisdictions. They have also established the basis on which to build new cooperation projects.

In early 2012, the NAIC, the Federal Insurance Office (FIO), the European Insurance and Occupational Pensions Authority (EIOPA) and the European Commission (EC) initiated a U.S.-EU Dialogue Project (Project) to deepen insight into the overall design, function and objectives of the key aspects of the insurance regulatory regimes in the U.S. and EU, and to identify important characteristics of both regimes. The Project builds on the ongoing U.S.-E.U. dialogue and is being led by a Steering Committee that includes three top supervisory officials from the U.S. and three from the EU.

The Steering Committee committed to a series of discussions to improve their understanding of each other’s regulatory systems. In addition to having several meetings in person and via phone, the Steering Committee identified the following seven topics that members agreed were important to a sound regulatory regime, the protection of policyholders and financial stability:

1. Professional secrecy and confidentiality;
2. Group supervision;
3. Solvency and capital requirements;
4. Reinsurance and collateral requirements;
5. Supervisory reporting, data collection and analysis and disclosure;
6. Supervisory peer reviews; and
7. Independent third-party reviews and supervisory on-site inspections.

The Steering Committee established several technical committees (TCs) comprised of insurance experts for each of the seven topics to objectively compare the two systems. The TCs were tasked with preparing objective, fact-based reports that identify areas of alignment and differences between the two regulatory systems. The discussions focused on a comparison of the seven core principles identified in the state-based system in the U.S. Insurance Financial Solvency Framework and the three-pillar approach of the Solvency II Directive in Europe, including the rules that are currently under development for Solvency II implementation.

In September 2012, a compilation of the seven technical reports was exposed for public review and comment. The reports explain the work and findings of each of the respective committees in their efforts to compare and contrast the two regulatory systems. The Steering Committee held public hearings Oct. 12, 2012, in Washington, D.C., and Oct. 16, 2012, in Belgium to offer participants a chance to comment on the draft report. Following the public hearings, the report was revised to increase accuracy and provide clarification of certain content. In December 2012, a revised report, “Comparing Certain Aspects on the Insurance Supervisory and Regulatory Regimes in the European Union and the United States,” was released.

The report represents an important crossroads on the path toward greater mutual understanding and cooperation. Overall, the TCs found that many of the policy objectives were quite similar among the two regulatory systems. Although there were some notable differences, the similarities between the two regimes were greater than anticipated. Examples of some of the key observations from the Project are outlined below. The full report can be found on the NAIC website.1

1. Professional Secrecy and Confidentiality
   • Both regimes seek to balance the objective of maintaining professional secrecy with appropriate flexibility to share information with other supervisory authorities with a legitimate and material interest in the information. Key differences in structural approach can be observed. In the EU, the basic presumption incorporated in insurance legislation is that nearly all information acquired by the supervisory authorities in the course of their activities is bound by the obligation of professional secrecy. In the U.S., state laws generally

* Special thanks to NAIC staff/TC experts for their contributions and assistance to this article.

1 www.naic.org/documents/eu_us_dialogue_report_121220.pdf

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provide for the confidentiality of certain information submitted to, obtained by or otherwise in the possession of an insurance department. The approach is more often focused on protecting specific information from being available for public inspection.

- Both regimes include general authorizations to share confidential information with other financial regulators, law enforcement officials and other governmental bodies in need of such information to perform their duties. Confidential information may only be disclosed to such persons if they can maintain confidentiality and/or demonstrate their ability to protect such information from disclosure when the information is in their possession.

- Both regimes allow for regulators to enter into agreements or memoranda of understanding (MoUs) with counterparts in other jurisdictions to facilitate the sharing of confidential information. Both regimes provide broad discretion to regulators to establish the terms of such agreements, including the verification of each regulator’s ability to maintain the confidentiality of information received from another jurisdiction.

- Moreover, both regimes address the issue of potential sharing of information with third parties, but achieve similar outcomes in different ways. EU member state requirements that the recipient of confidential information obtain explicit permission from the originating source before sharing with another regulator are often developed as a result of legal constraints under the EU directives, while U.S. state insurance regulators are bound by general legal requirements to respect the confidentiality of information under the laws of the providing jurisdiction and the memorialization of this respect in written confidentiality agreements.

2. Group Supervision

- Under Solvency II, the scope of group supervision includes all entities within the entire group, regulated or otherwise, on a global basis; however, authority outside of the group capital requirement is limited to entities located within the European Economic Area. In the U.S., group supervision includes all entities within the entire group, but authority is limited to U.S.-based insurers and the focus of group supervision is on analyzing the financial condition of the group from the perspective of its potential impact on the regulated insurers.

- In the EU, group supervisors have authority over nondomiciled and non-regulated entities in the group, but most of this authority is from the perspective of the group capital requirement. In the U.S., insurance regulators do not have the same authority, but they have significant powers over the legal entity insurer and also have unlimited authority with regard to gathering and examining any information from the holding company system. In addition, it should be noted that U.S. insurance regulators use a “lead state” concept, which provides a means for the states to defer their authority to analyze and examine holding company information to a chosen group-wide U.S. lead supervisor.

- In terms of reporting at the group level, Solvency II requires reporting of group information similar to the reporting on legal entity insurers. In the U.S., there is much more extensive reporting on legal entity insurers, which includes reporting on all transactions between the insurer and other members of the holding company system, but other group information is limited to the basic financial statements and notes thereon of the consolidated group, or similar information on all entities within the group.

- Solvency II contains an explicit group capital requirement, whereas there is no similar requirement in the U.S.

- Both regimes have an Own Risk and Solvency Assessment (ORSA) requirement that is similar in concept, but the EU requirements are more prescriptive than the current U.S. ORSA requirements. In addition, small insurers in the U.S. will not be required to conduct an ORSA. A similar exemption was not identified for EU insurers.

3. Solvency and Capital Requirements

- The U.S. system relies on risk-based capital (RBC), a single calculation that produces four levels of regulatory capital used to apply escalating levels of action, but is not considered an indicator of relative financial strength.

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2 In general terms, a “group” refers to more than one company that consists as part of a corporate family by virtue of ownership or affiliation. Generally speaking, an insurance group is comprised of two or more insurers, but there could be other legal entities involved, including holding companies; subsidiaries or affiliates, such as agencies, service providers or third-party administrators whose business is tangential to that of the member insurers; and other entities whose business is unrelated to the insurance operations of the group.
4. Reinsurance and Collateral Requirements

- The SCR formula includes all quantifiable risks calibrated to a single statistical benchmark for SCR and another single benchmark for MCR. Only risks that are material for the industry are included in the RBC formula and are calibrated to varying statistical benchmarks. Currency risk and catastrophe risk are excluded from RBC, although there are plans to include catastrophe risk as part of the NAIC Solvency Modernization Initiative (SMI).

- The state-based regime in the U.S. and Solvency II both deviate from general accounting treatment. Regulatory reporting in the U.S. is required to follow statutory accounting principles (SAP), which is based on a framework that is developed around U.S. generally accepted accounting principles (GAAP) and establish more of a “winding-up” valuation. In the EU, solvency assessment of a company is based on a “market consistent,” or economic, balance sheet. Assets and liabilities are valued at fair value and the basic framework is based on International Financial Reporting Standards (IFRS). This tends to make available capital more subject to year-to-year variation under Solvency II.

- Both regimes have specific requirements for reinsurance ceded by domestic insurers to foreign reinsurers and have recently established frameworks for reviewing the reinsurance solvency and supervisory regimes of other jurisdictions. However, there are key differences between the two regimes with respect to the requirements for recognition of reinsurance ceded to foreign reinsurers, and the frameworks for reviewing the regulatory regimes of foreign jurisdictions are different.

- In the EU, member states are prohibited from requiring collateral in relation to reinsurance arrangements entered into with companies situated in equivalent third countries (reinsurance arrangements with these companies would be treated in the same manner as reinsurance arrangements concluded with EU reinsurers). Under the U.S. state-based regime, the 2011 amendments to the NAIC Credit for Reinsurance Model Law (#785) and Credit for Reinsurance Model Regulation (#786) (NAIC credit for reinsurance models) serve to reduce the prior reinsurance collateral requirements for non-U.S. licensed reinsurers that are licensed and domiciled in qualified jurisdictions, and those reinsurers will be required to post collateral according to their assigned rating.

- In the EU, decisions on third-country equivalence in relation to reinsurance are effective across the EU and cannot be overridden by member states, while in the U.S., collateral reduction is optional on the part of the states. If a state enacts reinsurance collateral reduction measures, those measures would be required to be substantially similar (i.e., similar in force and no less effective) to the key elements of the NAIC models.

- Currently, 11 U.S. states have enacted reduced collateral provisions (California, Connecticut, Delaware, Florida, Georgia, Indiana, Louisiana, New York, New Jersey, Pennsylvania, and Virginia), with other states currently considering proposals.

5. Supervisory Reporting, Data Collection and Analysis and Disclosure

- The U.S. system has a mature harmonized reporting, data collection and analysis function that has been administered by the NAIC for years; it has evolved and will continue to do so. In the EU, while national reporting

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systems are also mature and continuously improving, Solvency II will put in place for the first time a harmonized prudential reporting and data-collection process across EU member states that, when fully operational and once matured with experience, should function in a similar way as that utilized by the state-based regime in the U.S.

- There are some differences in regard to reporting requirements, particularly with respect to governance issues. The EU includes a detailed description of the system of governance and risk management; while the U.S. state-based regime prefers the monitoring to occur mostly through on-site examination processes. In the future, this will be enhanced on the U.S. side with ORSA and enterprise risk management (ERM) reports.

- Concerning reporting requirements for groups, the approach is somewhat different between the two regimes. In the U.S. state-based regime, groups submit holding company filings, which are distinct from requirements of individual undertakings. In the EU, groups will file reports that are similar to those required for individual undertakings.

6. Supervisory Peer Reviews

- The NAIC Financial Regulation Standards and Accreditation Program includes a standardized scope with formal topical standards that is continually updated as necessary. Reviews of the standards are performed on a rotational basis. The areas forming the subject of the review do not, generally, change. Additional standards may be added for relevant changes in the insurance industry and/or the regulatory environment. The Financial Regulation Standards and Accreditation Program and its related processes have resulted in standards that are effectively obligatory. EU peer reviews are thematic in nature, examining subjects/issues that fall within the legal remit of EIOPA. The topics forming the subject of the reviews change, but the EU measures, which are rigorous in nature, on which they may be based (e.g., regulations, directives and guidelines), will not generally change, but can be updated where necessary. Any significant issues identified will be revisited during the follow-up process (aspects may also be considered as part of a subsequent review).

- The NAIC Financial Regulation Standards and Accreditation Program is voluntary and conducted by non-regulators. Although the program is voluntary, there is a high degree of participation in the program; currently, all 50 states, the District of Columbia and Puerto Rico are accredited. In contrast, the EIOPA regulation requires all member states to conduct periodic reviews and those reviews are conducted by member states, not EIOPA staff.

7. Independent Third-Party Review and Supervisory On-Site Inspections

- Under Solvency II, EU insurers must maintain an internal audit function. There is no independent audit function currently required under state or U.S. laws or regulations; however, insurers listed with the New York Stock Exchange (NYSE) are required by the terms of membership on the NYSE to have an internal audit function.

- In regard to the frequency of on-site examinations, the U.S. state-based regime requires a full-scope financial examination at least once every five years. The EU does not have a frequency requirement for examinations.

- The U.S. provides insurers with the opportunity to review, comment on and appeal the findings of on-site evaluations. In addition, the NAIC Model Law on Examinations (#390) specifies the process to make the report available to the public for review. There are also requirements for the examination report to be shared with other states. Examination reports are considered public documents, and many state insurance departments regularly post them on their websites. Under Solvency II, regulators are not required to share the examination report.

- Also, although both regimes require actuarial reports, the prescribed minimum content and distribution of reports are different. In the U.S., actuaries are required by state insurance regulations to release a public opinion, along with other reports that are restricted to the company and supervisors. In the EU, there is no public opinion, but internal reports can be accessed by supervisors.

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WAY FORWARD

Based on the report, the Steering Committee also agreed on a “Way Forward” plan, which outlines the common objectives and initiatives for the future. A detailed project plan to operationalize these objectives and initiatives in the Way Forward plan is being developed in early 2013 to be pursued over the next five years. The Way Forward plan seeks coordination and consistency between the two regimes on each of the seven topics.

Specifically, the high-level common objectives are to:

- Promote the free flow of information between EU and U.S. supervisors under conditions of professional secrecy by removing the barriers to the exchanges of information;
- Establish a robust regime for group supervision, which would include a clear allocation of tasks, responsibilities and authority amongst supervisors, a holistic approach to the determination of the solvency and financial condition of the group, greater cooperation and coordination of supervisors within colleges and efficient enforcement measures;
- Further develop an approach to valuation that more accurately reflects the risk profile of companies and capital requirements that are fully risk-based;
- Work to achieve a consistent approach within each jurisdiction and examine the further reduction and possible removal of collateral requirements in both jurisdictions;
- Pursue greater coordination in relation to the monitoring of the solvency and financial condition of solo entities and groups through the analysis of supervisory reporting;
- Ensure the consistent application of prudential requirements and commitment to supervisory best practices through different peer review processes that ensure an independent view of the jurisdiction being examined; and
- Ensure consistency and effectiveness in the supervision of solo entities and groups.
IS TERRORISM AN INSURABLE RISK?

By Eric Nordman, Director of Regulatory Services and CIPR

In the United States, the watershed moment for acts of terrorism came swiftly on Sept. 11, 2001. On that morning, four commercial airliners were hijacked and used as explosive devices with devastating results. Lower Manhattan was ablaze, with the attacks resulting in destruction of the iconic twin towers of the World Trade Center, along with other buildings. The loss of life was a staggering 2,606 in New York City alone. One of the four planes struck the Pentagon, causing significant damage and 125 deaths. The final plane crashed in a Pennsylvania cornfield after heroic efforts of passengers thwarted the hijackers’ efforts to cause even more death and destruction to populated areas. There were 246 passengers and crew on the four airlines along with 19 hijackers for a total of 2,996 deaths that day. Insured losses (primarily commercial property and life insurance claims) reached a staggering amount exceeding $30 billion at the time. The world as we then knew it was forever changed.

Insurers reacted to the magnitude of the loss as they often do when catastrophes occur. They said they would cover the property and loss of life as provided in the current policy forms. However, they also noted that providing coverage of acts of terrorism in the future would be less likely. They then proceeded to cancel policies for perceived terrorism targets, draft exclusions and contract limitations and generally do what they could to mitigate their exposure to loss from acts of terrorism. The purpose of this article is to discuss the federal Terrorism Risk Insurance Act and its renewals in light of the most recent sunset, which will occur Dec. 31, 2014. The article will also discuss the question of whether acts of terrorism are insurable.

The Terrorism Risk Insurance Program

The Terrorism Risk Insurance Act of 2002 created the Terrorism Risk Insurance Program (TRIP) within the U.S. Department of the Treasury. The original act was intended as a temporary federal program where the federal government shared the risk of terrorism losses with commercial property/casualty insurers. The act was intended to provide a level of consumer protection by ensuring the availability and affordability of insurance covering foreign acts of terrorism. The original program was to sunset in three years. However, the U.S. Congress has adopted two extensions to the program: one for a two-year extension and one for a seven-year extension. The original act and the first extension did not provide coverage for domestic acts of terrorism. The 2007 extension added that coverage.

The current TRIP provides a complicated hierarchy of steps that must be met before an insurer is eligible for reimbursement under the program. It starts with a certification process. The first threshold to meet is for an act of terrorism to be “certified.” For certification, the act of terrorism must occur in the United States or on a U.S. air carrier or U.S. sea-going vessel. The terrorist act must also exceed $5 million in insured losses. The certification is done jointly by the secretary of the Treasury, the U.S. secretary of state and the U.S. attorney general.

The second step is for the insurance industry’s aggregate certified insured losses to exceed $100 million. If the losses do not exceed that threshold, then there is no federal share in the loss.

Even if the certification occurs and the aggregate certified insured losses exceed $100 million, there are limitations to the types of insurance coverage that qualify for reimbursement under TRIP. The program covers only commercial lines property/casualty insurance and there are some limitations specified in the law. There is no coverage for federal crop insurance, private crop or livestock insurance, private mortgage insurance, title insurance, financial guaranty insurance, medical professional liability insurance, flood insurance, reinsurance and life insurance products. Generally, the thinking behind these exclusions is that it would be difficult, or even impossible, for a terrorist to create a loss that would be covered by the specified types policies.

Assuming the first three steps are met, an insurer can submit a claim under the program. Before the federal government will participate in the loss, the insurer must meet its deductible obligations under the program. The current deductible is set at 20% of the insurer’s annual direct earned premiums for the covered lines of business.

The fifth step is where there is a payment made by the federal government. Once the loss is certified, the aggregate certified insured losses exceed $100 million and the insurer has met its 20% deductible obligations, then the federal government will pay 85% of the losses above the deductible amount. There is a sixth step that adds some uncertainty back into the mix. If the total amount of losses exceeds $100 billion, then the federal contribution ends, as there is a cap built into the legislation. Presumably, if that occurs, Congress will determine if more funds should be allocated to the program.

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**INSURABILITY OF ACTS OF TERRORISM**

The recent successful terrorist attack near the finish line of the Boston Marathon reminds us that terrorism is never far away. Property damage estimates were unavailable at the time this was written. Thus, it is unknown whether the event will become a certified act of terrorism. Even if the event is certified, it is unlikely aggregate certified insured losses will exceed the $100 million threshold needed to trigger any payment by the federal government under TRIP. The attack caused several deaths and close to 200 injuries.

Several planned attacks have been foiled in recent years. The common thread in the Boston Marathon attack and the other recent unsuccessful attacks is the use of improvised explosive devices (IEDs). The IED is intended to produce mass casualties and strike fear in the citizens. Perhaps the best publicized of the unsuccessful attempts is the May 2010 car bomb in New York City’s Times Square. Other unsuccessful attacks include:

- An undetonated IED discovered by authorities on the parade route of a planned Martin Luther King, Jr. Unity Marchs in Seattle, WA (2011);
- A foiled plot to detonate a car bomb at the annual Christmas Tree Lighting Ceremony in Portland, OR (November 2010);
- A foiled plot to attack the Washington, DC, Metrorail system (October 2010); and
- A foiled plot to attack the New York City subway using IEDs (September 2009).

From an insurance perspective, providing coverage for acts of terrorism is less than ideal. The insurance mechanism works best for events that are predictable. Things that occur frequently and are of low severity are most predictable and, therefore, the easiest for insurers to price. For example, auto physical damage is a predictable line of business. Many auto accidents occur each day and the most an insurer must pay is well known based on the cost to repair or replace the vehicle, which is easy to ascertain. Contrast that with acts of terrorism, which, thankfully, occur infrequently, are of unpredictable origin and range from modest damage to potentially billions of dollars in losses.

When faced with this level of uncertainty, insurers must rely on computer modeling to develop a price for the product. Modeling for terrorism losses is in its infancy. As a result, and all things being equal, insurers would prefer to underwrite coverages that are more predictable. Thus, insurers tend to shy away from providing coverage for acts of terrorism voluntarily. The TRIP provides insurers with the assurance they need to allow them to offer coverage for acts of terrorism. The TRIP gives insurers a boundary on their ultimate costs of insuring the risk. It provides the maximum probable loss statistic for ratemaking and solvency purposes. It is perhaps one of the most successful and least costly federal programs operating today. A small staff is involved in rulemaking and managing the program. There is a recoupment mechanism so, in most cases, losses paid for by the program would be reimbursed by a policyholder surcharge in future years.

Several studies have been conducted to evaluate the insurance markets for acts of terrorism. The President’s Working Group on Financial Markets has published studies in 2006 (Terrorism Risk Insurance) and 2010 (Market Conditions for Terrorism Risk Insurance). These studies found that the cost of terrorism insurance was high following the events of 9/11, but it has come down some since then. The President’s Working Group on Financial Markets found that the private insurance market’s appetite for voluntarily offering terrorism coverage has improved, but its estimates regarding the level of capacity the industry is willing to devote to the terrorism risk are in the $6 billion to $8 billion range. This level of capitalization is inadequate to serve the needs of American businesses.

**CONCLUSION**

While insurers are slightly more willing and able to insure acts of terrorism today than they were in 2002, the terrorism risk is challenging. While not completely uninsurable, there is not a sufficient private market available to serve the appetite for coverage from American businesses. Thus, if the TRIP is allowed to sunset at the end of 2014, we can expect many insurers to exclude or significantly limit coverage for acts of terrorism in property and liability insurance policies.

A timely renewal of TRIP by the U.S. Congress would avoid market dislocations and save considerable time and expense for insurers and insurance regulators. As they did for recent renewals, regulators expect insurers to file contingency endorsements for policies issued on or after Jan. 2, 2014. All of this effort and expense could be avoided if Congress were to act on a TRIP renewal this year.
MANAGING LONGEVITY RISK

By Anne Obersteedt, CIPR Senior Researcher*

**INTRODUCTION**
While the need to manage investment risk has long been a focal point, there is now growing awareness of the need to manage longevity risk. This growing awareness is predicated on employers’ and individuals’ increasing exposure to longevity risk and their need to mitigate it. The increase in exposure is rooted in changing demographics, a shift in who bears the responsibility of sufficient retirement income, uncertainty of government benefits and economic volatility. Insurers’ experience with underwriting products exposed to longevity risk makes them a natural concern about these solutions.

**WHAT IS LONGEVITY RISK?**
Longevity risk refers to the risk that actual survival rates and life expectancy will exceed expectations or pricing assumptions, resulting in greater-than-anticipated retirement cash flow needs. For individuals, longevity risk is the risk of outliving one’s assets, resulting in a lower standard of living, or a return to employment. For those institutions that provide covered individuals with guaranteed retirement income, longevity risk is the risk of underestimating survival rates, resulting in increased liabilities to sufficiently cover promised payments. Institutions that face longevity risk include defined benefit pension plan providers, (re) insurance companies, the federal government and certain financial institutions.

**DRIVERS OF LONGEVITY RISK PROTECTION DEMAND**

* **Aging Population**
A key driver in the growing need to address longevity risk is the increasing percentage of people that are approaching or entering retirement. Here in the U.S., the aging of our population is largely attributed to baby boomers (i.e., those born between 1946 and 1964). According to the U.S. Census Bureau, the oldest baby boomers began reaching retirement age in 2011. Moreover, those reaching retirement age are expected to grow considerably through 2050. The 65-and-older population is projected to make up one-fifth of the population by 2030 and will more than double from 2010 to 2050—jumping from an estimated 40.2 million to 88 million people. Figure 1 illustrates the growth of the elderly population from 1910–2050.¹

The older the U.S. population, the more resources that are needed to sustain retirement, health and other living needs. Presently, this need is magnified by the current economic volatility, low interest-rate environment and increasing longevity. From 2010 to 2030, the old-age dependency ratio is projected to rise from 22% to 35%.² These statistics indicate that, for every senior, there are currently about five working-age citizens to support government system services, such as Social Security, Medicare and Medicaid, which will drop to roughly three working-age citizens in 2030. The result will place significant strain on the financing of these services.

* **Increasing Life Expectancy**
At the same time a growing proportion of the population is reaching retirement age, it is also living longer. In 1902, persons 65 years of age were expected to live an additional 11.9 years.³ By 2008, their life expectancy had grown to 18.7 years past the age of 65. The U.S. average life expectancy at birth increased 62% from 47.3 years in 1902 to 76.8 in 2000, with expectations that it will reach 79.5 in 2020.⁴

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² Ibid.

* Special thanks to Rob Esson and Larry Bruning for providing background information and edits to this article.
Mortality trends are an important factor in life expectancy. That is, as death rates decrease over time, life expectancy is improved. Mortality rates declined greatly in the first half of the 20th century as advances in public health saw the control of illness from microbes. In the latter half of the century, advances in the treatment of internal causes, such as biological degenerative and genic diseases, greatly increased life expectancies.

**Shift in Who Bears Responsibility of Sufficient Retirement Income**

The number of employees covered by defined benefit pension plans has been shrinking steadily in recent years. Three decades ago, most employees depended on annuity payments from their employer-provided defined benefit program and Social Security. Since that time, employers have made a gradual shift from defined benefit to defined contribution plans. From 1980 to 2008, private pension plan participants fell from 38% to 20% and private defined contribution plan participants increased from 8% to 31%. Additionally, many employers are freezing pensions as an initial step in phasing out defined-benefit pensions and replacing them with defined contribution plans.

The move away from defined benefit plans in favor of defined contribution plans has shifted the responsibility of ensuring a sufficient retirement income stream from employers to individuals (and, ultimately, as provider of last resort, governments). Additionally, individuals face uncertainty in the benefits that they can plan to receive in retirement from Social Security. As a result, individuals’ exposure to investment and longevity risks has increased at a time when market volatility has stressed retirement assets.

**Defined Benefit Plan Underfunding and Rising Obligations**

Facing increasing pension fund liabilities and funding deficits, many pension plans are increasingly looking toward risk-transfer mechanisms to reduce their pension obligations. Pension shortfalls during 2012 of $418 billion and $4.6 trillion have been estimated for the top 1,000 U.S. corporations and U.S. public pension plans, respectively.6,7 Future funding needs appear to be on an upward trajectory, as low interest rates may force large private pension plans to ease funding deficits with an additional $400 billion from 2011 to 2015.8

Additionally, stricter disclosure and funding rules from the federal Pension Protection Act of 2006 are expected to increase liability recognition and funding needs. Furthermore, new mortality improvement projection scales and base rate mortality tables are expected by 2015. The recognition of longevity risk, and any resulting increase in pension liabilities, as companies incorporate these new scales and tables, could put greater strain on liability funding needs. It could also expose companies to potential negative valuation assessments, thus increasing their desire to reduce exposure to longevity risk and seek mitigating solutions.

**Longevity Risk Solutions**

**Longevity Risk Transfer Mechanisms for Institutions**

The need for relief from liabilities exposed to longevity risk has created an emerging market with innovative market-based risk transfer solutions. There are three broad longevity risk transfer mechanisms: a buy-out, a buy-in, and a longevity swap. Additionally, securities (such as longevity bonds) and indexes may emerge to facilitate longevity risk hedging. A more complete description of these risk transfer mechanisms is included in the shaded box on page 16.

In general, pension plans de-risk their portfolios by transferring longevity risk through a buy-out, buy-in, or longevity insurance transaction with a counterparty. In this case, the pension plan would be a buyer of longevity risk protection and the counterparty (insurer or bank) would be a seller of longevity risk protection. Insurers also enter into agreements with reinsurers to assume part of their longevity risk. In this case, the insurer would be the buyer and the reinsurer would be the seller. Longevity swap participants usually include (re)insurers and banks as either buyers or sellers.

Sellers of longevity risk protection can limit the amount of longevity risk they assume from buyers of longevity risk protection by offloading it after purchase to the capital markets, to (re)insurers, or to both. This was done in 2011, when Rolls Royce transferred $3 billion in pension liabilities to Deutsche Bank who, in turn, transferred portions of it to a group of reinsurers.9 Additionally, sellers of longevity risk can hedge their longevity risk directly through capital market transactions. Hedging provides an effective way to reduce volatility within portfolio outcomes. Given the growing need for institutions to protect against longevity, the use of capital market solutions (such as forward contracts, longevity hedging, swaps and securitizations) are expected to increase.

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A buy-out involves the sale and transfer of all of a pension plan’s assets and liabilities in return for a single premium payment. Insurers usually issue a group annuity contract as part of a buy-out. This transaction provides the insurer with complete ability to control and manage the underlying assets. However, it also leaves the insurer exposed to all asset related risks, such as investment, credit, and inflation risk, as well as longevity risk.

A buy-in transaction allows for more flexibility in that the underlying assets remain with the pension plan manager, who pays a single premium in exchange for periodic payments that match those of its pension obligations. The insurance company issues an annuity that is kept on the pension plan’s financial books and provides the retirement income benefit. A buy-in provides for partial risk transfer, with the buyer retaining liability for ultimate payment to annuitants.

Longevity insurance (longevity swap) replaces the unknown cost of future obligations with the purchase of a known liability. The buyer of longevity risk protection (pension plan or (re)insurer) pays a fixed periodic premium based on mortality assumptions to the swap counterparty (an investment bank or (re)insurer). The swap counterparty in turn pays a floating premium to the buyer of longevity risk protection based on the difference between actual and expected mortality experience. An index swap is an emerging type of longevity swap in which mortality rates are based on the experience of an index rather than the portfolio.

Longevity bonds are a future possibility and would be used by pension plans and (re)insurers to hedge their portfolios against longevity risk. The bonds would be correlated to an index of a given population. The buyer would receive a higher coupon payment when survivorship in the population is high, thereby offsetting its higher obligation payments.

In the same year, Dutch insurer Aegon sought to hedge its annuities by transferring €12 billion in longevity risk to Deutsche Bank through a longevity swap. The company cited the size of the transaction in its decision to use the capital markets instead of reinsurance, implicating insufficient insurance capacity for the size of its transaction. The transaction was unique not only in its size, but also in that it used an index-based modeling approach that proved to be appealing to capital market participants looking to diversify their sovereign or corporate credit risk holdings.12

Longevity Risk Solutions for Individuals
Insurers provide the majority of products designed to help individuals manage the risk they will outlive their assets. Individuals without defined benefit plans can ensure lifetime income by purchasing annuities within their defined contribution plans and personal retirement accounts. They can also purchase a single premium immediate annuity by taking a full or partial distribution from their defined contribution plan upon retirement or through other lump sum savings.

However, it should be noted that until 2012, when the U.S. federal government issued new regulations, plan participants had to choose between annuitizing their full distribution or not annuitizing at all. The new rules also relax minimum distribution age requirements to encourage retirement plans to offer longevity annuities (deferred annuities) among their investment plan choices. Additionally, employees will now be able to purchase annuities sold in their employer’s pension fund with funds from their defined contribution plan. The flexibility and ease of access afforded under the new federal regulations are expected to increase annuity demand and supply.

Insurers have introduced many new product designs to accommodate the growing demand for lifetime income. Over the past decade, most of this innovation came from adding variable annuity living benefit riders, such as guaranteed minimum income benefits (GMIBs) and guaranteed lifetime withdrawal benefits (GMWBs). These products have the advantage of providing income protection and investment flexibility. In 2008, contingent deferred annuities (CDAs) were introduced to the market as a way to isolate the longevity risk protection. Their benefits are similar to variable annuities with guaranteed lifetime withdrawal benefits

(GLWBs) in that they provide protection against outliving ones assets. CDAs allow investment managers to protect their investments against longevity risk without actually purchasing a variable annuity. Unlike variable annuities, the underlying investment funds (or covered assets) linked to CDAs are not held in an insurance company’s separate accounts. Therefore, individuals retain ownership and greater control over their invested assets.

Insurers market CDAs to advisors of mutual funds, separate managed accounts and brokers of fee-based products. Given the large volume of funds coming through these accounts, the CDA market has the potential to significantly boost insurers’ sales volumes. However, advisor interest in CDAs has been weak, due in part to the uncertainties that come with an emerging product. Insurance companies and regulators are still working toward creating a regulatory and operating framework that establishes clear guidelines for supervisory authority, applicable regulations and information transparency.

**REGULATORY IMPLICATIONS OF THE RISKS INHERENT IN LONGEVITY PRODUCTS AND TRANSFER MECHANISMS**

*Regulatory Activities*

As the longevity risk market continues to innovate and develop new products, insurance regulators are evaluating the adequacy of the current regulatory framework in place to govern these products. Specifically, regulators are working towards answering questions surrounding the supervisory authority, sufficiency of current laws and regulations, suitability, consumer protection, solvency, transparency, and potential contagion risk of emerging products. To address these concerns, many domestic and international work streams have been established to study the related issues and their implications on and across the various financial sectors.

In 2012, the Joint Forum \(^{13}\) established a work stream to examine the potential for contagion issues in the longevity risk market. The Joint Forum’s Risk Assessment and Capital Working Group is expected to finalize a report on the cross-sectorial aspects of the longevity risk transfer market during 2013. State insurance regulators, working through the NAIC, assist the Joint Forum in this work by participating in discussions and commenting on papers related to this work. The Joint Forum recognizes that the potential size of the longevity risk transfer market is such that, if improperly controlled and monitored, excessive build-up of risk could occur in one or more sectors, with the potential for harm to the financial system.

State insurance regulators, through the NAIC, are currently studying issues surrounding CDAs in an effort to recommend a regulatory structure. As stated earlier, CDAs are new products designed to provide longevity protection. However, their regulation has varied by state, with some of the states not allowing them at all. Questions surrounding product classification and applicability of existing regulations on reserving, solvency, regulatory authority and consumer protections are being considered by the NAIC Contingent Deferred Annuity (A) Working Group as it formulates its recommendations. In addition, the Life Risk Based Capital (E) Working Group will consider whether there should be an explicit and separate factor for longevity risk in 2013.

The U.S. Securities and Exchange Commissioner (SEC) is currently accepting CDA filings, as securities and insurers are already filing CDAs with the SEC. State insurance regulators are working with the SEC and the Financial Industry Regulatory Authority (FINRA) to get a better understanding of their review process and how they view their respective regulatory roles. They are also working in tandem with the SEC and FINRA to evaluate the adequacy of current disclosure rules, especially given the significant impact that policyholder behavior has on CDA benefits and costs. Similar concerns exist for variable annuities with living benefit guarantees.

Other federal regulatory activities include developing strategies to increase the use of annuities in defined contribution plans. The new federal guidelines make it easier for individuals to purchase annuities. However, retirement plan sponsors are reluctant to offer annuity products due to concern over their fiduciary responsibilities for selecting an annuity provider under the federal Employee Retirement Income Security Act (ERISA). To calm apprehensions, the White House Council of Economic Advisors (CEA) and the U.S. Department of Labor (DOL) have asked state insurance regulators for assistance in providing employers with the information necessary to substantiate the soundness of annuity providers under the DOL safe harbor rule. State insurance regulators will be working through the NAIC ERISA Retirement Income (A) Working Group to see what the states might be able to provide that would help employers meet their fiduciary obligations.

As new products designed to provide protection against longevity roll out, regulators will need to gain a deep level of understanding of the inherent risks. Concerns on the

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\(^{13}\) For more on the Joint Forum see: www.naic.org/cipr_topics/topic_joint_forum.htm

(Continued on page 18)
Managing Longevity Risk (continued)

ability of participants to adequately control their exposure to a risk that is difficult to quantify and mitigate will need to be addressed. Below is a list of some of the issues and risks inherent in the longevity risk market and their implications on the regulatory structure of the insurance industry.

Difficulty Quantifying Longevity
How to accurately predict mortality rates has been a widely debated and contentious subject. Many experts predict the rate of mortality improvements to moderate in the future. They point out that survival rates for the younger populations may have reached their upper boundaries, although all such prior predictions have been wrong. Nonetheless, given this and the significant advances in limiting mortality from extrinsic activities, many experts argue that continued mortality reductions would need to stem mostly from mitigating intrinsic causes of the biological process of aging.

Although advances in such activities as stem cell research and cloning biological parts hold promises to do just that, they are in their infancy and are not expected to impact longevity in the near future. Other experts predict a sharp increase in life expectancies, with a predicted life expectancy at birth of 100 in the year 2060.14 Still others argue that there are limits to a human’s life span and question whether these limits have been met.

Capacity and Capital Adequacy
The longevity risk market is currently in its infancy. However, given the level of current pension obligations, it has the potential to reach enormous proportions. Global longevity exposure from pension funds (90%) and insurance contracts (10%) has been estimated at $21 trillion of asset protection.15 Regulators are concerned that the potential enormity of longevity exposure could be beyond the capacity of the insurance industry.

There are also concerns that longevity risk products, if improperly sold and priced, could exhaust the capacity of state guaranty funds or not qualify for protection under certain state laws. To this effect, the National Organization of Life and Health Insurance Guaranty Associations (NOLHGA) has been examining if contingent deferred annuities would be eligible for coverage under the NAIC Life and Health Insurance Guaranty Association Model Act (#520).

Protecting policyholders and helping ensure the financial stability of the insurance industry requires that life re( insurers) appropriately account for longevity risk within their capital models. However, current factor-based capital models fail to effectively consider longevity trends and standard stochastic mortality models fail to incorporate portfolio-specific characteristics. Moreover, prospective life tables projecting longevity have not been updated frequently enough and often underestimate improving mortality rates. This underestimation of life expectancies can lead to substantial underfunding of liabilities. One study has suggested that outdated mortality tables have resulted in a 12% understatement of pension liabilities for a typical male participant.16 The issue, in part, is due to the difficulty in quantifying the uncertainties inherent in such a long-tailed risk and the impact of future interest rates. Additionally, national tables in many jurisdictions tend to be based on aggregated population data that lack pertinent demographic and socioeconomic data.

U.S. statutory risk-based capital (RBC) models also fail to adequately account for longevity risk, as they lack a charge specific to this risk. As such, state insurance regulators are now looking into adding such a charge to the NAIC RBC calculation. A longevity risk charge would help ensure that insurers keep sufficient capital to account for the longevity risk embedded in their contracts. It also forces insurers to assess their capacity limits for taking on additional longevity risk.

The incorporation of dynamic assumptions and variables under principle-based stochastic models is expected to provide better capital estimates, but, in the specific instance, would need to incorporate explicit longevity assumptions. Insurance contracts issued in and beyond 2015 will likely be subject to principle-based reserving (PBR). PBR reflects a paradigm shift from a strictly formulaic method to a more dynamic method that will require companies to use experience studies in their reserving analysis. It will also mandate that insurers share their experience data with statistical agents who compile the data for use by the Society of Actuaries in their published experience tables.

Counterparty and Concentration Risk
As the recent financial crisis demonstrated, counterparty risk can present significant dangers. Longevity risk-transfer mechanisms allow pension plans, re( insurers) and investment banks to “de-risk” their portfolios, but add counterparty default risk. The ability to ensure the strength of

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counterparties (potentially over extended periods), the sufficiency of collateral posted for security and the transparency of secondary trading transactions is of key concern to state insurance regulators. Reliance on third-party investment management, particularly in partial risk transfers, also presents concerns about market risk and the ability of the counterparty to accurately reserve for future obligations. Requirements that assets be kept as a segregated fund or that an agreed-upon investment strategy be followed can help to mitigate these risks.

Additional state insurance regulatory concerns include insurers’ ability to project appropriate withdrawal rates to protect against policyholders withdrawing too much money. This is of particular concern with buy-in transactions, as they involve a full transfer. Regulators also have concerns that insurers’ fees from buy-in transactions (such as CDAs) are sufficient to support their guarantees. Careful review of policies by regulators when they are filed, together with the appropriate capital charges, will help to secure appropriate pricing and product design.

Investment banks participating in the longevity risk market typically offload their assumed risks through securitizations sold to (re)insurers and investors looking to diversify their portfolios. Although it is not completely clear yet exactly who these investors will be, it is likely to include large fund managers and brokers. There is potential for these large players to unknowingly create interconnected counterparty risk or concentration risk by redistributing the very same risk to those that sought to divest from it, thereby creating a spiral effect. Counterparty exposure to tail risk from sudden increases in mortality rates, as would occur in a longevity swap, could also pose an unforeseen risk.

**Basis Risk**

The ability to quantify and manage residual basis risk that results from actual portfolio mortality trends is also of concern to state insurance regulators. Basis risk is the residual risk from two offsetting risks that are not perfectly matched. Life (re)insurers can hedge large books of mortality-based business with longevity risk, as unanticipated increases in death claims would be expected to be offset by a lack of claims from unanticipated increases in longevity. The hedge is imperfect, however, as populations are not homogeneous between books of business, leaving the insurer exposed to basis risk.  

The insurance industry also faces basis risk in the difference between the mortality trends of national and industry indices and the actual mortality and longevity experienced in their book of business. This discrepancy arrives from the use of selection criteria insurers use to accept policyholders. Likewise, the variance between actual mortality trends and those of aggregated indexes would expose investors to basis risk and create opaqueness in the assumptions insurers use for hedging strategies. Additionally, the likelihood that those pension plans seeking longevity relief would be experiencing longer mortality rate trends than their counterparts exposes (re)insurers and investment banks to adverse exposure when entering risk-transfer agreements.

**Conclusion**

Life insurers’ experience with managing life contingent products and their natural hedge against longevity risk make them an obvious player in the search for longevity solutions. However, the potential enormity of this exposure could have significant consequences for the industry if not controlled. Risk sharing with reinsurers and capital market participants may be inevitable. This brings additional concerns that the continual transfer of longevity risk between capital market participants from a wide array of institutions and sectors could create significant regulatory challenges in the insurance sector and, in the worst cases, the wider financial system. These challenges can be mitigated through regulations already in place that restrict hedging and other investment activities, as well as through transparency and future limits on distribution. Capacity and capital adequacy concerns will need to be managed by state insurance regulators by ensuring appropriate longevity risk charges and modeling assumptions. Furthermore, third-party risks can be managed by mandating transparent liability data and investment strategies. Finally, regulators must ensure that insurers use appropriate risk control mechanisms and suitable product design.

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17 Ibid.
CIPR WEBSITE EXPANDS REGULATORY SUPPORT SERVICES

By Shanique (Nikki) Hall, CIPR Manager

In a concerted effort to become the go-to site for regulatory and public policy information, the NAIC’s Center for Insurance Policy and Research (CIPR) is diligently working to improve its public offerings. The CIPR was established in 2009 to leverage the resources of several NAIC departments in order to support the collection and dissemination of information and analysis for use by state and federal officials, agencies, policymakers and insurance consumers. The formation of the CIPR expands regulatory support services by distributing the research and analysis that takes place within NAIC.

To achieve this mission, the CIPR publishes a quarterly CIPR Newsletter, as well as special reports and studies to provide the public with information on developing trends in the insurance industry and to enhance the awareness and understanding of key insurance issues. In addition, the CIPR hosts four annual events that offer a forum for opinion and discussion on major insurance regulatory issues. This article will discuss some of the recent improvements made that we hope will help meet that goal.

♦ CIPR WEBSITE
Central to the communication of NAIC research and public policy activities is the CIPR website, which is a recent enhancement to the NAIC home page. Within the CIPR site is a host of information on current insurance regulatory developments, ongoing CIPR projects and coverage of a wide range of insurance topics and issues. Moreover, content from the Government Relations division of the NAIC—such as issue briefs and Congressional testimony—has been added to the CIPR site to serve as a central point of information-gathering.

The CIPR site is divided into four principle areas: (1) Home; (2) Key Issues; (3) Special Reports and Studies; and (4) Statistics. The CIPR home page is where you can find what’s new on the site, including the most recent CIPR Newsletter. Also available on the home page is information on upcoming and past CIPR events; including, presentations, audio and handout material from the events. Our goal is to make it easy for the user to locate topical information on insurance and insurance regulatory topics.

♦ KEY ISSUES
A recent enhancement to the CIPR site is its A–Z Topic listing of key insurance issues. The A–Z Topic listing contains a wealth of information on a wide range of regulatory and insurance industry-specific topics. It is a great research tool for regulators, consumers, industry and academia. Each topic page includes a detailed summary of the topic and issues, and is supported by reference documents, including links to presentations, speeches, NAIC news releases and actions, articles and special reports. References to the current NAIC committee task force or working group active on the topic is also included, as well as an NAIC contact for any questions.

Currently, there are more than 80 topics included in the A–Z Topic listing, such as: accreditation, flood insurance, the EU-U.S. Dialogue Project, insurance-linked securities, natural catastrophes and workers’ compensation. The A–Z Topic listing is steadily growing; more than 40 topics were added in 2012 and another 40 (or more) are expected to be added to the listing this year.

♦ SPECIAL REPORTS AND STUDIES
The CIPR site also provides access to special reports and studies on major regulatory and public policy issues in insurance. Here you will find studies written by CIPR distinguished scholars and researchers; former NAIC CEO Therese M. Vaughan, Ph.D.; insurance industry experts; academics; and other NAIC staff. Selected articles from the Journal of Insurance are also available.

Moreover, NAIC Industry Snapshots and Analysis Reports were recently made available on the CIPR site. Produced by the Financial Regulatory Services Department, these reports provide an overview of insurer statutory filings and assist consumers in better understanding developing trends in the insurance industry. They cover the property/casualty, title, life, fraternal and health insurance industries.

♦ STATISTICS
The NAIC Statistics page is another pivotal element of the CIPR site. This page provides a collection of key facts and market trends for a particular state, such as: the number of insurance companies in each state; the number of captive insurance companies in the states; total direct premium; select insurance department data for the states; cost of regulation in the states; insurance industry employment in each state; and gross domestic product for the states. For comparison, national key facts and trends are also available. In addition, premium volumes for the 50 largest markets worldwide, as well as sample reports from the NAIC Research and Actuarial Department, are also provided.

♦ SUMMARY
We hope you will make use of these tools. The CIPR is always open to suggestions. If you have an issue you believe we should cover, please let us know. Send your suggestions, compliments (we like those) and criticisms to shall@naic.org.
This issue features direct written premiums, market shares and pure loss ratios for the homeowners and private passenger auto (PPA) lines. The PPA line includes liability and physical damage. The data is taken from the “Exhibit of Premiums and Losses” from the NAIC property/casualty annual statement. Comparisons can be made between 2011 and 2012 data. The direct loss ratio for the homeowners line improved just under 17 points over the past year, going from 75.76 in 2011 to 58.86 in 2012 (Figure 1). This is likely the result of a significant decrease in catastrophe losses paid in 2012 from 2011 levels. The 2012 pure loss ratio for homeowners is approximately equal to that of 2010. The PPA line experienced a minimal improvement, decreasing by approximately one point over the past year (Figure 2 on the following page). Market shares among companies did not vary to a large degree. The same 10 insurers made up the top 10 in 2011 and 2012, in both the auto and homeowners lines.

The NAIC publishes market share reports for various types of insurance. Data in this article are based on the 2012 Market Share Reports for Property/Casualty Groups and Companies.¹ The report contains data on the top 125 groups/companies writing each of the property/casualty lines of business. Additionally, the report provides the top 10 groups by state. For more detailed information on a particular line of business, market share by line reports provide 99% of the market share by state for each property/casualty line of business.

### Figure 1: 2012 Top 10 Market Share—Homeowners*

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<td>STATE FARM GRP</td>
<td>15,894,342,416</td>
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<td>ALLSTATE INS GRP</td>
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<td>UNITED SERV AUTOMOBILE ASSN GRP</td>
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<td>CHUBB INC GRP</td>
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<td>10064</td>
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<td><strong>INDUSTRY TOTAL</strong></td>
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<td>58.86</td>
<td>75.76</td>
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*This data includes line 4 of the 2012 Property/Casualty Annual Statement.

¹For more information about this data, please contact a member of the NAIC Research and Actuarial Department. More information can be found online at: [www.naic.org/research_actuarial_dept.htm](http://www.naic.org/research_actuarial_dept.htm)
### Figure 2: 2012 Top 10 Market Share—Total Private Passenger*

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<td><strong>INDUSTRY TOTAL</strong></td>
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<td>66.36</td>
<td>67.52</td>
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*This data includes lines 19.1, 19.2, and 21.1 of the 2012 Property/Casualty Annual Statement.*
The National Association of Insurance Commissioners (NAIC) is the U.S. standard-setting and regulatory support organization created and governed by the chief insurance regulators from the 50 states, the District of Columbia and five U.S. territories. Through the NAIC, state insurance regulators establish standards and best practices, conduct peer review, and coordinate their regulatory oversight. NAIC staff supports these efforts and represents the collective views of state regulators domestically and internationally. NAIC members, together with the central resources of the NAIC, form the national system of state-based insurance regulation in the U.S. For more information, visit www.naic.org.

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