PERR KNIGHT

September 24, 2024

Jillian E. Thayer
Chief Legal Counsel
Arkansas Bureau of Legislative Research
State Capitol, Room 315
Little Rock, Arkansas 72201

Re: Arkansas Public School Systems & Public Buildings
Property Insurance Programs
Strategic Consulting Services – DRAFT VERSION

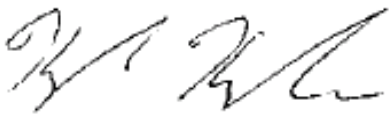
Dear Ms. Thayer:

We completed our draft strategic consulting report on the following items:

- Providing pro-forma estimates of the income statements and balance sheets for a self-insurance entity that retains property claims with various self-insurance retentions;
- Highlighting the differences between a certified self-insured entity vs. a captive insurance company; and
- Estimating the potential savings from using a captive structure to potentially retain risk above the self-insured retention.

The attached report presents the results of our analysis. We appreciate the opportunity to be of service to Arkansas Bureau of Legislative Research, and we are available to answer any questions you may have.

Sincerely,



Kyle M. Hales, ACAS, MAAA
Principal & Consulting Actuary
Director | Risk Strategies & Solutions
Perr&Knight
(708) 548-1696
khales@perrknight.com

Enclosures

September 24, 2024

PERR KNIGHT

Strategic Consulting Services

Created for: Arkansas Bureau of Legislative Research
Prepared by: Perr&Knight

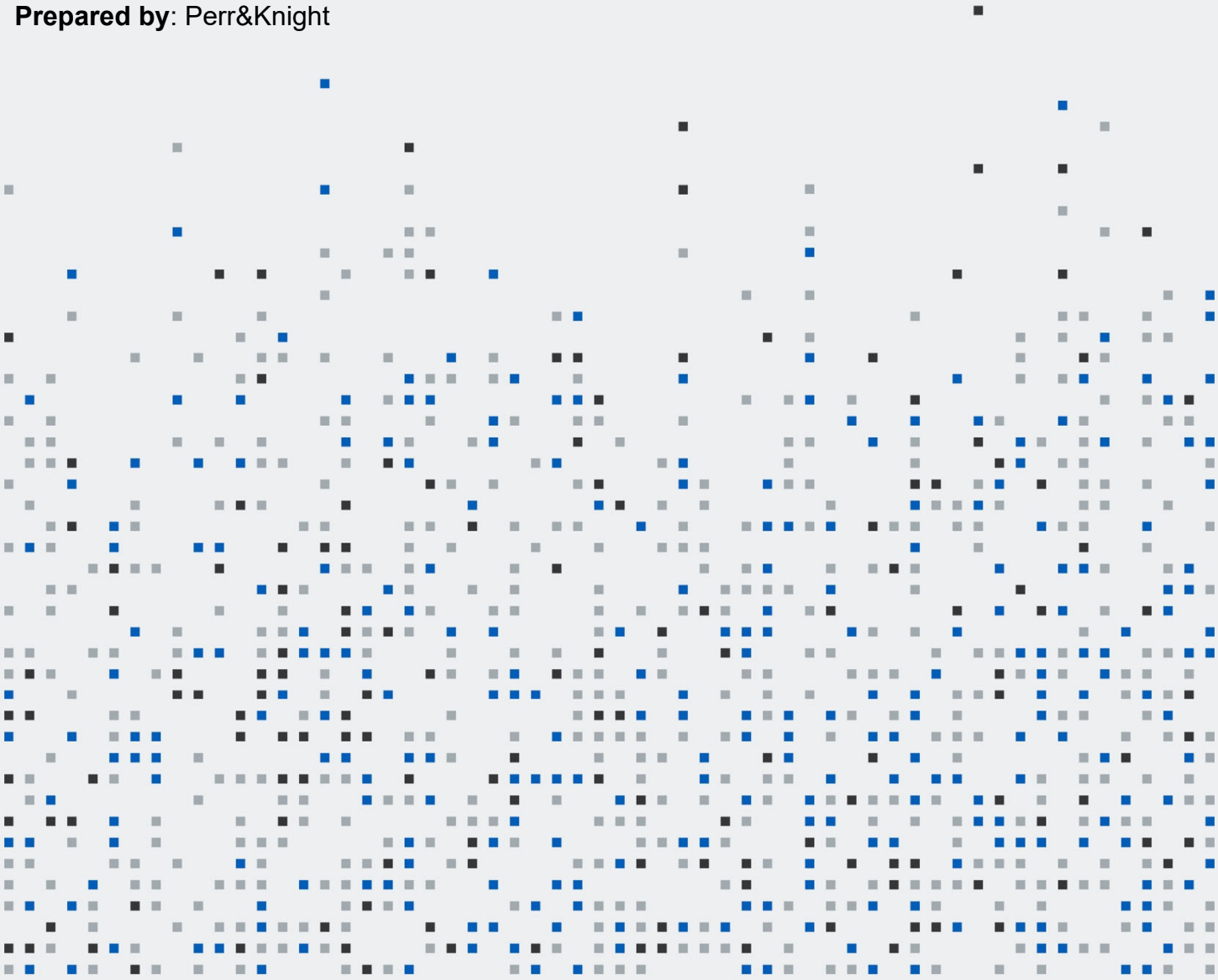


TABLE OF CONTENTS

I. EXECUTIVE SUMMARY

A. Background

The Executive Subcommittee of the Arkansas Legislative Council ("the Subcommittee") is engaged in a study with the clear intent to develop and implement a strategic plan and legitimate framework for the provision of reasonably priced property insurance coverage options for K-12 school districts and institutions of higher education facilities in the State of Arkansas on an actuarially sound basis while providing for management of the plans through a governing structure and legislative oversight ("the Study").

Currently, school districts purchase property insurance coverage through one of two separate entities: the Arkansas Public School Insurance Trust ("APSIT") administered by the Arkansas Insurance Department ("AID") or the Arkansas School Boards Association ("ASBA"). In addition, the institutions of higher education participate in a property insurance program administered by the Arkansas Insurance Department that also includes property owned and operated by state agencies, known as the Arkansas Multi-Agency Insurance Trust ("AMAIT"). For the 2023-2024 plan year, school districts faced significant increased property insurance premiums under both plans, while the AMAIT agencies faced significant premium increases for both the 2022-2023 and 2023-2024 plan years.

The Study has been ongoing since August 2023, and a determination has been made that it is in the best interests of the state for the K-12 school property insurance plans to be consolidated under one plan administered by the Arkansas Insurance Department. In addition, the Subcommittee is seeking recommendations related to best practices for administration of the plans for property owned by institutions of higher education and state government entities. Collectively, the Arkansas K-12 school districts, institutions of higher education, and state government entities will be referred to as ("the AR Public School Systems & Public Buildings" or "the Entities").

It is the objective of the Subcommittee, by entering into a contract for consulting services with Perr&Knight, to provide to the members of the Arkansas Legislative Council detailed and accurate information regarding a multi-year strategic path forward for provision of property insurance to the AR Public School Systems & Public Buildings in a manner that will provide for reasonable and predictable premium rates, as well as consistent governance of the plans and legislative oversight, funding mechanisms, and options for revisions to the current plans, including, without limitation, the possibility of implementing a self-insured structure or utilizing re-insurance, or some combination of self-insurance with reinsurance above recommended specific aggregate limits, and recommendations related to possible inclusion of state properties in any plan that is developed.

B. Scope

For the AR Public School Systems & Public Buildings property exposures we performed the following strategic consulting services.

(1) Using the results of the actuarial analysis performed by Perr&Knight dated September 24, 2024, prepared pro-forma estimates of the income statements and balance sheets for a self-insurance entity that retains property claims with the following self-insurance retentions:
   (a) $2,000,000 per occurrence, with a $50,000,000 annual aggregate;
   (b) $3,000,000 per occurrence, with a $50,000,000 annual aggregate; and
   (c) $5,000,000 per occurrence, with a $50,000,000 annual aggregate.

(2) Researched and provided an outline of the differences between a certified self-insurance entity vs. a captive insurance company.

(3) Using the reinsurance information provided to the Entities prior the fiscal year 2024/2025 insurance renewal, provided an analysis that shows the potential savings from using a captive structure to retain risk above the current self-insured retention ("SIR").

(4) Documented the results of our findings in a report that summarizes the Subcommittee's responses to key questions and presented this information to the Subcommittee at their request.

(5) Using the results of the Actuarial Analysis performed by Perr&Knight dated September 24, 2024, and items (1) through (4) above, outlined our recommended next steps.

C. Findings

Using the results of the actuarial analysis performed by Perr&Knight dated September 24, 2024, we prepared pro-forma estimates of the income statements and balance sheets for a self-insurance entity that retains property claims with the following self-insurance retentions:

- $2,000,000 per occurrence, with a $50,000,000 annual aggregate;
- $3,000,000 per occurrence, with a $50,000,000 annual aggregate; and
- $5,000,000 per occurrence, with a $50,000,000 annual aggregate.

Based on the results of the actuarial analysis, the limits above were selected to represent an appropriate amount of risk transfer to the Entities, without overexposing the Entities to adverse claims, especially in the early years of operation.

Pro-formas were prepared under expected and adverse scenarios. The required funding for Fiscal Year 1 and the initial capital contribution from the proformas are summarized in Table 1 below. These estimates reflect amounts for all three entities combined.

Table 1 - Summary of Pro-Forma Financial Estimates

Self-Insured Retention	FY 1 Required Funding	Initial Capital Contribution
$2M/$50M	$31,600,000	$50,000,000
$3M/$50M	$33,600,000	$50,000,000
$5M/$50M	$36,200,000	$50,000,000

The required funding estimates represent the first-year insurance premiums necessary to operate a self-insured entity (either a certified self-insured or a captive insurance company) at a break-even level over a five-year timeframe under an adverse scenario. The funding estimates for Fiscal Years 2 through 5 increase by 5% each year. For each retention option, the adverse scenarios were selected to be Fiscal Years 2 and 3 having loss levels that represent the actuarial 85th percentile confidence level. In other words, we assumed the Fiscal Years 2 and 3 losses will settle at amounts that are expected to be exceeded with only a 15% probability. Our selected adverse scenario assumes that the remaining three fiscal years experience expected loss levels.

The initial capital contribution of $50 million was selected to support a worst-case scenario for the self-insured entity in Year 1. The worst-case scenario is defined as losses that reach the annual aggregate limit and completely exhaust the capital. However, even in this scenario, the self-insured entity will have collected Year 1's required funding, which can be used to partially replenish the capital position for Year 2. More details on the specifics of the pro-formas can be found in Section II of this report.

In order to recommend the SIR level expected to be the most cost effective, we will need the reinsurers to quote premiums for layers exceeding each of the three per occurrence and annual aggregate limits above. We will compare the difference in premiums for coverage excess each of the three limit options to the difference in required funding levels. For example, our estimated difference in required funding for SIRs of $3M/$50M vs. $5M/$50M is $2.6M. If the difference in reinsurance premiums for these two SIRs is significantly greater than $2.6M, then we will likely recommend the higher per occurrence SIR limit of $5M.

The table below provides a high-level summary of the differences between a certified self-insurance entity vs. a captive insurance company ("the Captive").

Table 2 – High-Level Summary of Insurance Structure Differences

Aspect	Certified Self-Insured Entity	Captive Insurance Company
Ownership	Self-insured directly, no separate entity	Separate legal entity
Risk Bearing	Entity bears full risk	Captive bears risk, with potential reinsurance
Regulation	*Meets regulatory requirements for self-insurance*	*Regulated as an insurance company*
Risk Pooling	*No pooling unless part of a group self-insurance*	*Can pool risks within the group or with others*
Tax Benefits	Limited tax benefits	Potential tax advantages for premiums
Customization	Limited customization	High degree of customization
Cost Control	Direct control over costs, but potentially higher	Lower long-term costs through retained profits

Both options offer different advantages depending on the risk profile and financial goals of the parent company, with self-insurance being simpler but less flexible, while captives provide more control and potential for cost savings. Section III of this report provides additional details on the different structures.

As it pertains to the Subcommittee, the main differences between the two structures relates to the fact that the Captive operates essentially as an insurance company, subject to the same regulatory standards as other commercial carriers. Additionally, the Captive has the ability to participate in reinsurance risk pools.

Regulatory authority of the insurance industry provides several critical functions to ensure the stability, fairness, and integrity of the insurance industry. Regulatory agencies are tasked with protecting policyholders, maintaining market efficiency, and ensuring that insurers operate in a sound and transparent manner. The Captive would be subject to solvency monitoring and financial stability requirements such as capital adequacy, financial audits, and risk-based capital standards. There are also requirements for annual audits and an actuarial opinion. These safeguards are put into place to protect the overall financial well-being of the Captive and its policyholders, ensuring appropriate action is taking place, should it experience an adverse financial outcome. These protections are not required for certified self-insured entities, potentially putting them at higher risk for failure or requiring significant outside capital infusion.

Setting up the Captive as its own independent entity, regulated by the Arkansas Department of Insurance, creates financial protections not afforded to a certified self-insured entity. For example, leading up to the financial crisis of 2008, American International Group ("AIG") offered insurance products in both the property & casualty and life & retirement segments, which are regulated by the National Association of Insurance Commissioners ("NAIC"). AIG Financial Products Corp ("AIGFPC") provided derivative products and other non-insurance related financial risk management services, subject to different regulations. When the 2008 financial crisis hit, AIGFPC's financial products were in significant peril. US and European banking and other financial regulators wanted to use the capital in AIG's insurance entities to help bail out AIGFPC. However, the NAIC stepped in and protected the insurance companies' assets. The NAIC successfully argued that these funds were already separately earmarked for insurance related purposes only and it would be inappropriate to use these funds for non-insurance purposes (see the Appendix for a more detailed outline of the protections guaranteed by the NAIC to AIG's insurance operations). A similar situation could arise in Arkansas whereby funds are needed for non-insurance purposes and a certified self-insurance entity is not afforded the same protections as the Captive.

Risk pool participation affords the Entities the opportunity to strategically respond when reinsurance carriers offer unusually high premiums for excess layers. This is especially true in situations when rates vary widely by reinsurer and / or when market forces such as limited capacity drive premiums higher than actuarially appropriate.

As mentioned above, we won't be able to ascertain specific cost savings associated with the Captive retaining losses in the excess layers for the fiscal year ending 2026 until we receive next year's reinsurance premiums from the commercial carriers. However, we reviewed the fiscal year ending 2025 reinsurance premiums for the Entities and identified multiple instances where the Captive could have participated in a risk sharing pool to reduce the overall costs of insurance to the Entities.

For example, AMAIT's reinsurance renewal premiums for FYE 2025 for coverage excess $8.5M up to a $50M aggregate are as shown in Table 3 below:

Table 3 – AMAIT – FYE 2025 Reinsurance Premiums for Coverage $50M XS $8.5M

Reinsurer (Parent Company)	Limit	Pooled Percentage	Quoted Premium*	Rate per $100M of $1K TIV**
AIG	$25M	50.0%	$6,954,314	$1.102
RSUI Group Inc	$2M	4.0%	$719,091	$1.425
Berkshire Hathaway Specialty Insurance	$5M	10.0%	$1,963,749	$1.557
Chubb Ltd	$5M	10.0%	$1,323,561	$1.049
Starr International Company Inc	$3.75M	7.5%	$1,440,493	$1.522
Besso Ltd	$9.25M	18.5%	$3,728,114	$1.597
Total	$50M	100.0%	$16,129,322	$1.279
Total Excl. Berkshire Hathaway	$45M	90.0%	$14,165,573	$1.248

Notes:
** Excluding surplus lines taxes*
*** Rate per $100M of $1K TIV = Quoted Premium / AMAIT's TIV of $25.231 Billion / Limit x $100 Million*

As shown in Table 3 above, AMAIT is paying an average of $1.557 per $1,000 of TIV for each $100 million of coverage that Berkshire Hathaway Specialty Insurance ("Berkshire") is providing. This rate is 24.8% higher than the average rates of the other insurers offering coverage in the same layer. The Entities would have been in an ideal position to decline the coverage that Berkshire was offering and retain 10% of the $50 million (i.e. $5 million total) excess AMAIT's $8.5M self-insured annual aggregate, via the Captive. Starr International Insurance Company ("Starr") and Besso Ltd. ("Besso") similarly offered higher than average renewal rates. However, unlike Starr and Besso, Berkshire is not participating in any additional layers in the reinsurance tower, which makes Berkshire an ideal candidate to have been replaced by the Captive.

In the above example, should the Captive have retained this risk and priced this $5 million of excess coverage at the average of the other carriers, the reduction in overall premiums would have been over $400,000 for AMAIT. Similar opportunities existed for ASPIT's Tokio Marine Kiln ("TMK") carrier and some of the Lloyds companies for ASBA. For all three agencies combined, we're estimating the Captive would have saved the Entities a total of $1,450,000 by replacing reinsurers whose premiums for excess layers are significantly higher than the other carriers providing coverage in the same layers, and charging the average rate of the remaining carriers for the prior fiscal year ending 2025. Finally, it is likely that the actual savings would have been higher as the Captive would have needed to charge premiums just high enough to cover its expected losses and a reasonable contingency margin, which we expect would be below the average rate of the remaining carriers since the reinsurance premiums likely include amounts for

reinsurer expenses. The overhead and general expenses to run the Captive would have already been accounted for in the underlying SIR layer. Additionally, inefficiencies exist anytime risk is ceded from one entity to another, as expenses and risk loads are added to the risk transfer process, which makes it more expensive for the ceding entity to remove risk from its balance sheet.

The cost savings analysis should be performed on an annual basis as other considerations such as the Captive's prior performance, total exposure to risk, capital constraints, and overall risk appetite need to be considered when making strategic decisions as to how to optimally utilize the Captive.

II. PRO-FORMA EXHIBITS

Three versions of pro-forma estimates are provided in the exhibits section of this report, labeled Plan D. All three versions include data from all three agencies and are calculated at expected and adverse scenarios. Plans D.1 through D.3 consider the following SIRs:

- $2,000,000 per occurrence, with a $50,000,000 annual aggregate;
- $3,000,000 per occurrence, with a $50,000,000 annual aggregate; and
- $5,000,000 per occurrence, with a $50,000,000 annual aggregate.

Exhibit 1 details the pro-forma projected income statements for each limits option. The incurred loss & defense and cost containment expenses ("DCCE") are from Perr&Knight's Actuarial Analysis dated September 24, 2024. The general and administrative income and expenses are estimated based on reasonable expense loads for a captive insurance company of comparable size offering one line of coverage. The total pre-tax net underwriting profit/(loss) is calculated by adding the total pre-tax net underwriting profit/(loss) to the net pre-tax investment income as shown on Exhibit 1.

The pre-tax investment income is derived by averaging the estimated beginning and ending investable assets for each fiscal year and multiplying this by an expected pre-tax investment return rate of 3%. These investable assets include surplus and loss and DCCE reserves. Exhibit 2 provides additional details regarding these calculations.

Exhibit 3 shows the actuarially expected loss & DCCE for fiscal year ending 2026. Each subsequent fiscal accident year was increased 5% to account for loss & DCCE inflation. An adjustment was made to include a load for catastrophe losses assuming one catastrophic loss every 10 years that equals or exceeds the per occurrence limit. In other words, Plan D.1 has a per occurrence limit of $2 million. Thus, we loaded $200,000 into the expected loss & DCCE estimate to account for one catastrophe loss claim every 10 years. For the adverse scenarios, we're assuming two catastrophic losses over a 10-year period, thus we loaded 20% of the per occurrence limit into the loss & DCCE estimates at the adverse scenarios. Finally, the adverse scenarios were selected such that Fiscal Years 2 and 3 experienced adverse losses equal to the actuarial 85th percentile confidence level.

Exhibit 4 displays the historical combined loss payment patterns for the Entities. Loss development factors were selected and aggregated to determine the payment patterns used on Exhibit 3.

As mentioned above, the fiscal year ending 2026 written premiums on Exhibit 1 were selected to represent the self-insurance premiums necessary to operate a self-insured entity (either a certified self-insured or a captive insurance company) at a break-even level over a five-year

timeframe under an adverse scenario. Each subsequent fiscal year was increased by 5% to account for an increase in claims costs and expenses.

III. CERTIFIED SELF-INSURED VS. CAPTIVE STRUCTURE

A certified self-insured entity and a captive insurance company are both risk management structures used to manage insurance risks, but they operate under different frameworks and have distinct characteristics. Here's a breakdown of the key differences:

1. Definition and Structure
- Certified Self-Insured Entity:
  - A self-insured entity takes on the responsibility of paying for its own losses (typically related to health, workers' compensation, or liability claims) rather than purchasing insurance from a third-party insurer.
  - In some cases, an entity can become a certified self-insured under a regulatory framework, meaning it meets specific financial and legal criteria set by the government or regulatory body, and is authorized to self-insure.
  - The entity is directly responsible for paying claims out of its own funds, but often uses third-party administrators ("TPAs") for claims management.
- Captive Insurance Company:
  - A captive insurance company is a wholly owned subsidiary created by a parent company or group of companies to insure their own risks.
  - The captive acts as a formal insurance company that underwrites the risks of its parent or affiliated companies, collecting premiums and paying claims.
  - The captive is licensed and regulated as an insurance company, and the parent company uses it to manage its own risks, as well as to take advantage of tax benefits, cost control, and better risk management.

2.Ownership
- Certified Self-Insured Entity:
  - There is no separate entity. The company or organization self-insures directly, meaning it holds the risk and pays claims from its operating funds.
- Captive Insurance Company:
  - The captive is a separate legal entity, typically a wholly-owned subsidiary of the parent company. It operates like an insurance company, with the parent company owning the captive and providing it with the necessary capital to operate.

3. Regulation
- Certified Self-Insured Entity:
  - Self-insured entities must meet regulatory requirements set by state or national authorities, such as posting bonds, demonstrating financial solvency, or meeting reserve requirements to ensure they can cover potential claims.
  - These regulations vary by jurisdiction and type of risk.
- Captive Insurance Company:

- A captive is regulated by the insurance authorities in the jurisdiction where it is domiciled (which can be in the parent company's country or an offshore location with favorable regulatory frameworks).
- It must comply with insurance company regulations, such as capital adequacy, reserves, actuarial opinions, auditing, and reporting requirements, similar to traditional insurers.

4. Risk Pooling
- Certified Self-Insured Entity:
  - The entity assumes its own risk and does not pool risk with other companies unless it participates in a group self-insurance pool. Without reinsurance, the entity bears the full brunt of any large claims or catastrophic losses.
- Captive Insurance Company:
  - A captive can pool risks within a group of related companies or even with unrelated companies if structured as a group captive.
  - Captives often use reinsurance to transfer a portion of their risk to the broader insurance market, spreading the risk exposure and reducing potential losses.

5. Tax Implications
- Certified Self-Insured Entity:
  - A self-insured entity may not receive the same tax benefits as a captive insurer. For instance, self-insured losses are typically treated as operating expenses and are deductible only when paid, not when reserved.
- Captive Insurance Company:
  - A captive can offer potential tax advantages, such as deducting premium payments made to the captive as insurance expenses (depending on local tax laws). Additionally, captives may accumulate surplus funds from underwriting profits, which can be reinvested or returned to the parent company.

6. Flexibility and Customization
- Certified Self-Insured Entity:
  - Self-insured entities have flexibility in managing their risk, but they are limited by their financial ability to cover losses. They may also face challenges in securing stop-loss or excess insurance if needed.
- Captive Insurance Company:
  - Captives offer greater flexibility in tailoring insurance policies to meet the specific needs of the parent company, including coverage that may not be readily available or affordable in the traditional insurance market.
  - Captives can also provide coverage for multiple lines of insurance, including more niche or unique risks, and offer creative solutions like alternative risk transfer strategies.

7. Cost Control
   - Certified Self-Insured Entity:
     - A self-insured entity directly controls claims costs, but it must have strong risk management and claims handling processes to avoid large losses that can impact its financial stability.
   - Captive Insurance Company:
     - Captives give the parent company more control over premium pricing, claims handling, and investment strategies, potentially leading to lower long-term insurance costs. Captives can also accumulate underwriting profits that would otherwise go to third-party insurers.

IV. CONDITIONS AND LIMITATIONS

This strategic consulting analysis report is intended to provide insights and recommendations based on data provided by the representatives of the AR Public School Systems & Public Buildings, as well as information on the self-insurance structures and financial information of publicly owned buildings and structures in select states obtained through public channels and available at the time of its preparation. However, the following conditions and limitations should be considered when interpreting the findings and conclusions presented in this report:

1. Data Accuracy and Completeness:
    - The analysis relies on data provided by the Subcommittee and publicly available sources. While efforts have been made to ensure the accuracy and reliability of this data, we cannot guarantee its completeness or absolute accuracy.
    - Any discrepancies or errors in the data sources may impact the findings and recommendations of this report.
    - This is a draft version of this report. Additional information may surface, which will prove to be useful to the Subcommittee in their efforts to plot a course of action.

2. Scope of Analysis:
    - The scope of the analysis was defined by the Subcommittee and may not cover all aspects or areas of potential interest. Some factors relevant to the Subcommittee's strategic decisions may not have been included in the analysis due to the predefined scope.
    - The analysis is based on the information and assumptions provided as of the report date. Significant changes in market conditions, regulatory environments, or other external factors occurring after this date may affect the relevance and applicability of the recommendations.

3. Assumptions:
    - Various assumptions have been made to conduct the analysis, including but not limited to market trends, competitive behavior, economic conditions, and regulatory changes. These assumptions are based on current knowledge and best estimates but are inherently uncertain.
    - The validity of the conclusions and recommendations depends on the accuracy of these assumptions. If any assumptions prove to be incorrect, the results of the analysis may be compromised.

4. Future Projections:
    - Any forward-looking statements, projections, or forecasts included in this report are based on current information and assumptions about future events. Actual results may vary significantly from those projected due to unforeseen factors and risks.

By acknowledging these conditions and limitations, the Subcommittee can better understand the context within which this strategic consulting analysis report has been prepared and can use its findings and recommendations more effectively.

V. DISTRIBUTION AND USE

This report was prepared for the Subcommittee's internal use only for the purpose of researching and reporting on the differences between a certified self-insured entity vs. a captive insurance company , pro-forma estimates for three self-insured options , and to provide advice regarding possible changes to the structure of its current property insurance programs. This report should only be disclosed in its entirety, including all exhibits and appendices. This report is not to be used or relied on for any other purpose not listed above. Our consent to any distribution of this report to parties other than the Subcommittee shall be solely for informational purposes and does not constitute advice to such third parties. We assume no liability related to third party use of, or reliance on, this report.

*****

VI. EXHIBITS

Arkansas - Bureau of Legislative Research
Property Insurance Programs

Pro Forma Income Statement - Actuarial Central Estimate
Plan D.1 - Pooled Risks with $2M per Occurrence / $50M Annual Aggregate Retentions

			Fiscal Years Ending					
		Initial	2026	2027	2028	2029	2030	All Years
	Underwriting Income/Expense:							
(1)	Written Premium		31,600,000	33,180,000	34,839,000	36,581,000	38,410,000	174,610,000
(2)	Incurred Loss & DCCE		28,073,022	29,476,673	30,950,507	32,498,032	34,122,934	155,121,168
(3)	Underwriting Income		**3,526,978**	**3,703,327**	**3,888,493**	**4,082,968**	**4,287,066**	**19,488,832**
	General and Administrative Income/Expenses:							
(4)	Captive Set-Up & Administrative Expeneses							
(4)(a)	Program Set-Up/Ongoing Advisory Fees	250,000	325,000	341,250	358,313	376,228	395,040	2,045,830
(4)(b)	Captive Management Fees	200,000	100,000	105,000	110,250	115,763	121,551	752,563
(4)(c)	Claims Administration Fees		1,965,112	2,063,367	2,166,535	2,274,862	2,388,605	10,858,482
(4)(d)	Actuarial Fees	50,000	180,000	189,000	198,450	208,373	218,791	1,044,614
(4)(e)	Audit Fees		50,000	52,500	55,125	57,881	60,775	276,282
(4)(f)	Attorney Fees	100,000	50,000	52,500	55,125	57,881	60,775	376,282
(4)(g)	Arkansas Insurance Department Fees	25,000	25,000	26,250	27,563	28,941	30,388	163,141
(4)(h)	Premium Taxes		79,000	82,950	87,098	91,453	96,025	436,525
(4)(i)	Asset Management Fee		493,250	706,961	801,980	859,690	909,200	3,771,081
(4)(j)	Director Fees	50,000	5,000	5,000	5,250	5,513	5,788	76,551
(4)(k)	D&O Insurance		25,000	26,250	27,563	28,941	30,388	138,141
(4)(l)	Miscellaneous		10,000	10,500	11,025	11,576	12,155	55,256
(5)	Total Pre-Tax Net U/W Profit/(Loss)	(675,000)	219,616	41,798	(15,782)	(34,132)	(42,414)	(505,913)
(6)	Net Pre-Tax Investment Income		1,800,000	2,263,000	2,493,000	2,653,000	2,793,000	12,002,000
(7)	**Total Net Income Before Taxes**	**(675,000)**	**2,019,616**	**2,304,798**	**2,477,218**	**2,618,868**	**2,750,586**	**11,496,087**

Notes:
(1) Selected as the premium to effectively operate the captive at a break even level under the Adverse Scenario
(2) from Exhibit 3.1
(3) = (1) - (2)
(4) Estimated fees based on industry experience; will need to send RFPs to various vendors to formalize expenses
(5) = (3) - [Sum of (4)(a) through (4)(l)]
(6) from Exhibit 2.1
(7) = (5) + (6)

Arkansas - Bureau of Legislative Research
Property Insurance Programs

Pro Forma Income Statement - Adverse Scenario
Plan D.1 - Pooled Risks with $2M per Occurrence / $50M Annual Aggregate Retentions

			Fiscal Years Ending					
		Initial	2026	2027	2028	2029	2030	All Years
	Underwriting Income/Expense:							
(1)	Written Premium		31,600,000	33,180,000	34,839,000	36,581,000	38,410,000	174,610,000
(2)	Incurred Loss & DCCE		28,073,022	34,374,276	36,092,990	32,498,032	34,122,934	165,161,254
(3)	Underwriting Income		**3,526,978**	**(1,194,276)**	**(1,253,990)**	**4,082,968**	**4,287,066**	**9,448,746**
	General and Administrative Income/Expenses:							
(4)	Captive Set-Up & Administrative Expeneses							
(4)(a)	Program Set-Up/Ongoing Advisory Fees	250,000	325,000	341,250	358,313	376,228	395,040	2,045,830
(4)(b)	Captive Management Fees	200,000	100,000	105,000	110,250	115,763	121,551	752,563
(4)(c)	Claims Administration Fees		1,965,112	2,406,199	2,526,509	2,274,862	2,388,605	11,561,288
(4)(d)	Actuarial Fees	50,000	180,000	189,000	198,450	208,373	218,791	1,044,614
(4)(e)	Audit Fees		50,000	52,500	55,125	57,881	60,775	276,282
(4)(f)	Attorney Fees	100,000	50,000	52,500	55,125	57,881	60,775	376,282
(4)(g)	Arkansas Insurance Department Fees	25,000	25,000	26,250	27,563	28,941	30,388	163,141
(4)(h)	Premium Taxes		79,000	82,950	87,098	91,453	96,025	436,525
(4)(i)	Asset Management Fee		493,250	706,961	801,980	859,690	909,200	3,771,081
(4)(j)	Director Fees	50,000	5,000	5,000	5,250	5,513	5,788	76,551
(4)(k)	D&O Insurance		25,000	26,250	27,563	28,941	30,388	138,141
(4)(l)	Miscellaneous		10,000	10,500	11,025	11,576	12,155	55,256
(5)	Total Pre-Tax Net U/W Profit/(Loss)	(675,000)	219,616	(5,198,637)	(5,518,239)	(34,132)	(42,414)	(11,248,806)
(6)	Net Pre-Tax Investment Income		1,800,000	2,240,000	2,383,000	2,428,000	2,495,000	11,346,000
(7)	**Total Net Income Before Taxes**	**(675,000)**	**2,019,616**	**(2,958,637)**	**(3,135,239)**	**2,393,868**	**2,452,586**	**97,194**

Notes:
(1) Selected as the premium to effectively operate the captive at a break even level under the Adverse Scenario
(2) from Exhibit 3.2
(3) = (1) - (2)
(4) Estimated fees based on industry experience; will need to send RFPs to various vendors to formalize expenses
(5) = (3) - [Sum of (4)(a) through (4)(l)]
(6) from Exhibit 2.2
(7) = (5) + (6)

Arkansas - Bureau of Legislative Research
Property Insurance Programs

Pro Forma Balance Sheet - Actuarial Central Estimate
Plan D.1 - Pooled Risks with $2M per Occurrence / $50M Annual Aggregate Retentions

		Fiscal Years Ending					
	Initial	2026	2027	2028	2029	2030	All Years
(1) Written Premium		31,600,000	33,180,000	34,839,000	36,581,000	38,410,000	174,610,000
(2) Incurred Loss & DCCE		28,073,022	29,476,673	30,950,507	32,498,032	34,122,934	155,121,168
(3) CY Paid Loss & DCCE		6,921,491	21,816,667	27,426,705	30,005,887	32,381,559	118,552,309
(4) Loss & DCCE Reserves (Beginning)		-	21,151,531	28,811,538	32,335,339	34,827,484	
(5) Loss & DCCE Reserves (Ending)		21,151,531	28,811,538	32,335,339	34,827,484	36,568,858	
(6) Net Position (Beginning)	50,000,000	49,325,000	51,344,616	53,649,415	56,126,633	58,745,501	
(7) Total Pre-Tax Net U/W Profit/(Loss)	(675,000)	219,616	41,798	(15,782)	(34,132)	(42,414)	(505,913)
(8) Investable Assets (Beginning)		49,325,000	70,696,147	80,197,952	85,968,972	90,919,985	
(9) Investable Assets (Ending)		70,696,147	80,197,952	85,968,972	90,919,985	95,271,945	
(10) Average Investable Assets		60,010,574	75,447,050	83,083,462	88,444,478	93,095,965	
(11) Pre-Tax Investment Income		**1,800,000**	**2,263,000**	**2,493,000**	**2,653,000**	**2,793,000**	**12,002,000**

Notes:
(1), (7) from Exhibit 1.1
(2) and (3) from Exhibit 3.1
(4) = (5) prior fiscal year
(5) = (2) - (3) + (4)
(6) = (6) prior fiscal year + (7) + (11)
(7) from Exhibit 1.1
(8) = (9) prior fiscal year
(9) = (5) + (6) + (7)
(10) = [(8) + (9)] / 2
(11) = (10) x Investment Return Rate of 3.0%

Arkansas - Bureau of Legislative Research
Property Insurance Programs

Pro Forma Balance Sheet - Adverse Scenario
Plan D.1 - Pooled Risks with $2M per Occurrence / $50M Annual Aggregate Retentions

		Fiscal Years Ending					
	Initial	2026	2027	2028	2029	2030	All Years
(1) Written Premium		31,600,000	33,180,000	34,839,000	36,581,000	38,410,000	174,610,000
(2) Incurred Loss & DCCE		28,073,022	34,374,276	36,092,990	32,498,032	34,122,934	165,161,254
(3) CY Paid Loss & DCCE		6,921,491	23,024,186	31,232,829	33,459,444	33,420,119	128,058,068
(4) Loss & DCCE Reserves (Beginning)		-	21,151,531	32,501,621	37,361,783	36,400,371	
(5) Loss & DCCE Reserves (Ending)		21,151,531	32,501,621	37,361,783	36,400,371	37,103,186	
(6) Net Position (Beginning)	50,000,000	49,325,000	51,344,616	48,385,979	45,250,740	47,644,608	
(7) Total Pre-Tax Net U/W Profit/(Loss)	(675,000)	219,616	(5,198,637)	(5,518,239)	(34,132)	(42,414)	(11,248,806)
(8) Investable Assets (Beginning)		49,325,000	70,696,147	78,647,601	80,229,523	81,616,979	
(9) Investable Assets (Ending)		70,696,147	78,647,601	80,229,523	81,616,979	84,705,380	
(10) Average Investable Assets		60,010,574	74,671,874	79,438,562	80,923,251	83,161,180	
(11) Pre-Tax Investment Income		**1,800,000**	**2,240,000**	**2,383,000**	**2,428,000**	**2,495,000**	**11,346,000**

Notes:
(1), (7) from Exhibit 1.2
(2) and (3) from Exhibit 3.2
(4) = (5) prior fiscal year
(5) = (2) - (3) + (4)
(6) = (6) prior fiscal year + (7) + (11)
(7) from Exhibit 1.1
(8) = (9) prior fiscal year
(9) = (5) + (6) + (7)
(10) = [(8) + (9)] / 2
(11) = (10) x Investment Return Rate of 3.0%

Arkansas - Bureau of Legislative Research
Property Insurance Programs

Pro Forma Estimated Payment Patterns - Actuarial Central Estimate
Plan D.1 - Pooled Risks with $2M per Occurrence / $50M Annual Aggregate Retentions

All Programs

	(1)	(2)	(3)	(4)	(5)	(6)
(7) Loss Payment Pattern:		24.7%	51.8%	16.1%	4.3%	3.1%
FYE	Expected	Paid in Fiscal Year Ending				
Incurred	Loss & DCCE	2026	2027	2028	2029	2030
2026	28,073,022	6,921,491	14,549,101	4,519,206	1,207,846	875,378
2027	29,476,673		7,267,566	15,276,556	4,745,166	1,268,238
2028	30,950,507			7,630,944	16,040,384	4,982,424
2029	32,498,032				8,012,491	16,842,403
2030	34,122,934					8,413,116
Total	155,121,168	6,921,491	21,816,667	27,426,705	30,005,887	32,381,559

Notes:
(1) Expected Loss & DCCE from Actuarial Analyses; results have been increased by $200K to load for cat. losses
(2) through (6) = (1) x (7) for each Fiscal Year Ending
(7) from Exhibit 4
All Programs represents the estimated loss & DCCE for AMAIT, APSIT, and ASBA combined

Arkansas - Bureau of Legislative Research
Property Insurance Programs

Pro Forma Estimated Payment Patterns - Adverse Scenario
Plan D.1 - Pooled Risks with $2M per Occurrence / $50M Annual Aggregate Retentions

All Programs	(1)	(2)	(3)	(4)	(5)	(6)
(7) Loss Payment Pattern:		24.7%	51.8%	16.1%	4.3%	3.1%
FYE	Expected	Paid in Fiscal Year Ending				
Incurred	Loss & DCCE	2026	2027	2028	2029	2030
2026	28,073,022	6,921,491	14,549,101	4,519,206	1,207,846	875,378
2027	34,374,276		8,475,085	17,814,784	5,533,584	1,478,959
2028	36,092,990			8,898,839	18,705,523	5,810,263
2029	32,498,032				8,012,491	16,842,403
2030	34,122,934					8,413,116
Total	165,161,254	6,921,491	23,024,186	31,232,829	33,459,444	33,420,119

Notes:
(1) Expected Loss & DCCE from Actuarial Analyses; results have been increased by $200K to load for cat. losses
Years in red represent adverse scenarios (i.e. losses at an 85% confidence level)
(2) through (6) = (1) x (7) for each Fiscal Year Ending
(7) from Exhibit 4

Arkansas - Bureau of Legislative Research
Property Insurance Programs
Evaluated as of June 30, 2024

Cumulative Unlimited Paid Loss & ALAE
($000s Omitted)

Policy Period	Months of Development															
	9	21	33	45	57	69	81	93	105	117	129	141	153	165	177	189
7/1/08-09												8,692	8,692	8,692	8,692	8,692
7/1/09-10											9,904	9,904	9,904	9,904	9,904	
7/1/10-11										11,005	11,005	11,005	11,005	11,005		
7/1/11-12									3,838	3,838	3,838	3,838	3,838			
7/1/12-13								3,634	3,634	3,634	3,634	3,634				
7/1/13-14							10,506	10,500	10,500	10,500	10,500					
7/1/14-15						9,826	9,839	9,839	9,839	9,839						
7/1/15-16					8,036	8,036	8,036	8,036	8,036							
7/1/16-17				11,777	11,777	11,777	11,777	11,777								
7/1/17-18			15,561	16,154	16,589	16,589	16,589									
7/1/18-19		5,745	8,099	8,929	9,851	7,201										
7/1/19-20	2,118	5,689	5,710	5,722	16,523											
7/1/20-21	1,264	9,697	10,982	10,504												
7/1/21-22	2,262	25,936	40,440													
7/1/22-23	3,119	16,727														
7/1/23-24	8,387															

Loss & ALAE Development Factors

Policy Period	Months of Development															
	9:21	21:33	33:45	45:57	57:69	69:81	81:93	93:105	105:117	117:129	129:141	141:153	153:165	165:177	177:189	189:Ult
7/1/08-09												1.000	1.000	1.000	1.000	
7/1/09-10											1.000	1.000	1.000	1.000		
7/1/10-11										1.000	1.000	1.000	1.000			
7/1/11-12									1.000	1.000	1.000	1.000				
7/1/12-13								1.000	1.000	1.000	1.000					
7/1/13-14							0.999	1.000	1.000	1.000						
7/1/14-15						1.001	1.000	1.000	1.000							
7/1/15-16					1.000	1.000	1.000	1.000								
7/1/16-17				1.000	1.000	1.000	1.000									
7/1/17-18			1.038	1.027	1.000	1.000										
7/1/18-19		1.410	1.103	1.103	0.731											
7/1/19-20	2.686	1.004	1.002	2.888												
7/1/20-21	7.672	1.133	0.956													
7/1/21-22	11.465	1.559														
7/1/22-23	5.363															
Average	6.797	1.276	1.025	1.504	0.933	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Wgt. Average	6.624	1.386	1.024	1.286	0.943	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
3 Yr. Wtd.	7.880	1.383	1.015	1.395	0.931	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
Industry	1.595	1.171	1.010	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Selected	7.900	1.280	1.048	1.043	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Cumulative	11.052	1.399	1.093	1.043	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
% to Ultimate	9.0%	71.5%	91.5%	95.8%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Interpolated	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192
Cumulative	4.056	1.308	1.080	1.032	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
% to Ultimate	24.7%	76.5%	92.6%	96.9%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Arkansas - Bureau of Legislative Research
Property Insurance Programs

Pro Forma Income Statement - Actuarial Central Estimate
Plan D.2 - Pooled Risks with $3M per Occurrence / $50M Annual Aggregate Retentions

			Fiscal Years Ending					
		Initial	2026	2027	2028	2029	2030	All Years
	Underwriting Income/Expense:							
(1)	Written Premium		33,600,000	35,280,000	37,044,000	38,896,000	40,841,000	185,661,000
(2)	Incurred Loss & DCCE		29,575,407	31,054,177	32,606,886	34,237,231	35,949,092	163,422,793
(3)	Underwriting Income		**4,024,593**	**4,225,823**	**4,437,114**	**4,658,769**	**4,891,908**	**22,238,207**
	General and Administrative Income/Expenses:							
(4)	Captive Set-Up & Administrative Expeneses							
(4)(a)	Program Set-Up/Ongoing Advisory Fees	250,000	325,000	341,250	358,313	376,228	395,040	2,045,830
(4)(b)	Captive Management Fees	200,000	100,000	105,000	110,250	115,763	121,551	752,563
(4)(c)	Claims Administration Fees		2,070,278	2,173,792	2,282,482	2,396,606	2,516,436	11,439,596
(4)(d)	Actuarial Fees	50,000	180,000	189,000	198,450	208,373	218,791	1,044,614
(4)(e)	Audit Fees		50,000	52,500	55,125	57,881	60,775	276,282
(4)(f)	Attorney Fees	100,000	50,000	52,500	55,125	57,881	60,775	376,282
(4)(g)	Arkansas Insurance Department Fees	25,000	25,000	26,250	27,563	28,941	30,388	163,141
(4)(h)	Premium Taxes		84,000	88,200	92,610	97,240	102,103	464,153
(4)(i)	Asset Management Fee		493,250	722,156	825,419	889,633	945,460	3,875,917
(4)(j)	Director Fees	50,000	5,000	5,000	5,250	5,513	5,788	76,551
(4)(k)	D&O Insurance		25,000	26,250	27,563	28,941	30,388	138,141
(4)(l)	Miscellaneous		10,000	10,500	11,025	11,576	12,155	55,256
(5)	Total Pre-Tax Net U/W Profit/(Loss)	(675,000)	607,065	433,425	387,940	384,195	392,259	1,529,883
(6)	Net Pre-Tax Investment Income		1,823,000	2,321,000	2,573,000	2,753,000	2,911,000	12,381,000
(7)	**Total Net Income Before Taxes**	**(675,000)**	**2,430,065**	**2,754,425**	**2,960,940**	**3,137,195**	**3,303,259**	**13,910,883**

Notes:
(1) Selected as the premium to effectively operate the captive at a break even level under the Adverse Scenario
(2) from Exhibit 3.1
(3) = (1) - (2)
(4) Estimated fees based on industry experience; will need to send RFPs to various vendors to formalize expenses
(5) = (3) - [Sum of (4)(a) through (4)(l)]
(6) from Exhibit 2.1
(7) = (5) + (6)

Arkansas - Bureau of Legislative Research
Property Insurance Programs

Pro Forma Income Statement - Adverse Scenario
Plan D.2 - Pooled Risks with $3M per Occurrence / $50M Annual Aggregate Retentions

			Fiscal Years Ending					
		Initial	2026	2027	2028	2029	2030	All Years
	Underwriting Income/Expense:							
(1)	Written Premium		33,600,000	35,280,000	37,044,000	38,896,000	40,841,000	185,661,000
(2)	Incurred Loss & DCCE		29,575,407	36,884,330	38,728,546	34,237,231	35,949,092	175,374,605
(3)	Underwriting Income		**4,024,593**	**(1,604,330)**	**(1,684,546)**	**4,658,769**	**4,891,908**	**10,286,395**
	General and Administrative Income/Expenses:							
(4)	Captive Set-Up & Administrative Expeneses							
(4)(a)	Program Set-Up/Ongoing Advisory Fees	250,000	325,000	341,250	358,313	376,228	395,040	2,045,830
(4)(b)	Captive Management Fees	200,000	100,000	105,000	110,250	115,763	121,551	752,563
(4)(c)	Claims Administration Fees		2,070,278	2,581,903	2,710,998	2,396,606	2,516,436	12,276,222
(4)(d)	Actuarial Fees	50,000	180,000	189,000	198,450	208,373	218,791	1,044,614
(4)(e)	Audit Fees		50,000	52,500	55,125	57,881	60,775	276,282
(4)(f)	Attorney Fees	100,000	50,000	52,500	55,125	57,881	60,775	376,282
(4)(g)	Arkansas Insurance Department Fees	25,000	25,000	26,250	27,563	28,941	30,388	163,141
(4)(h)	Premium Taxes		84,000	88,200	92,610	97,240	102,103	464,153
(4)(i)	Asset Management Fee		493,250	722,156	825,419	889,633	945,460	3,875,917
(4)(j)	Director Fees	50,000	5,000	5,000	5,250	5,513	5,788	76,551
(4)(k)	D&O Insurance		25,000	26,250	27,563	28,941	30,388	138,141
(4)(l)	Miscellaneous		10,000	10,500	11,025	11,576	12,155	55,256
(5)	Total Pre-Tax Net U/W Profit/(Loss)	(675,000)	607,065	(5,804,838)	(6,162,236)	384,195	392,259	(11,258,556)
(6)	Net Pre-Tax Investment Income		1,823,000	2,294,000	2,442,000	2,484,000	2,556,000	11,599,000
(7)	**Total Net Income Before Taxes**	**(675,000)**	**2,430,065**	**(3,510,838)**	**(3,720,236)**	**2,868,195**	**2,948,259**	**340,444**

Notes:
(1) Selected as the premium to effectively operate the captive at a break even level under the Adverse Scenario
(2) from Exhibit 3.2
(3) = (1) - (2)
(4) Estimated fees based on industry experience; will need to send RFPs to various vendors to formalize expenses
(5) = (3) - [Sum of (4)(a) through (4)(l)]
(6) from Exhibit 2.2
(7) = (5) + (6)

Arkansas - Bureau of Legislative Research
Property Insurance Programs

Pro Forma Balance Sheet - Actuarial Central Estimate
Plan D.2 - Pooled Risks with $3M per Occurrence / $50M Annual Aggregate Retentions

		Fiscal Years Ending					
	Initial	2026	2027	2028	2029	2030	All Years
(1) Written Premium		33,600,000	35,280,000	37,044,000	38,896,000	40,841,000	185,661,000
(2) Incurred Loss & DCCE		29,575,407	31,054,177	32,606,886	34,237,231	35,949,092	163,422,793
(3) CY Paid Loss & DCCE		7,291,909	22,984,230	28,894,502	31,611,713	34,114,525	124,896,878
(4) Loss & DCCE Reserves (Beginning)		-	22,283,498	30,353,446	34,065,830	36,691,348	
(5) Loss & DCCE Reserves (Ending)		22,283,498	30,353,446	34,065,830	36,691,348	38,525,915	
(6) Net Position (Beginning)	50,000,000	49,325,000	51,755,065	54,509,489	57,470,429	60,607,624	
(7) Total Pre-Tax Net U/W Profit/(Loss)	(675,000)	607,065	433,425	387,940	384,195	392,259	1,529,883
(8) Investable Assets (Beginning)		49,325,000	72,215,563	82,541,935	88,963,259	94,545,972	
(9) Investable Assets (Ending)		72,215,563	82,541,935	88,963,259	94,545,972	99,525,798	
(10) Average Investable Assets		60,770,281	77,378,749	85,752,597	91,754,616	97,035,885	
(11) Pre-Tax Investment Income		**1,823,000**	**2,321,000**	**2,573,000**	**2,753,000**	**2,911,000**	**12,381,000**

Notes:
(1), (7) from Exhibit 1.1
(2) and (3) from Exhibit 3.1
(4) = (5) prior fiscal year
(5) = (2) - (3) + (4)
(6) = (6) prior fiscal year + (7) + (11)
(7) from Exhibit 1.1
(8) = (9) prior fiscal year
(9) = (5) + (6) + (7)
(10) = [(8) + (9)] / 2
(11) = (10) x Investment Return Rate of 3.0%

Arkansas - Bureau of Legislative Research
Property Insurance Programs

Pro Forma Balance Sheet - Adverse Scenario
Plan D.2 - Pooled Risks with $3M per Occurrence / $50M Annual Aggregate Retentions

		Fiscal Years Ending					
	Initial	2026	2027	2028	2029	2030	All Years
(1) Written Premium		33,600,000	35,280,000	37,044,000	38,896,000	40,841,000	185,661,000
(2) Incurred Loss & DCCE		29,575,407	36,884,330	38,728,546	34,237,231	35,949,092	175,374,605
(3) CY Paid Loss & DCCE		7,291,909	24,421,672	33,425,346	35,722,860	35,350,835	136,212,621
(4) Loss & DCCE Reserves (Beginning)		-	22,283,498	34,746,156	40,049,356	38,563,727	
(5) Loss & DCCE Reserves (Ending)		22,283,498	34,746,156	40,049,356	38,563,727	39,161,984	
(6) Net Position (Beginning)	50,000,000	49,325,000	51,755,065	48,244,226	44,523,990	47,392,185	
(7) Total Pre-Tax Net U/W Profit/(Loss)	(675,000)	607,065	(5,804,838)	(6,162,236)	384,195	392,259	(11,258,556)
(8) Investable Assets (Beginning)		49,325,000	72,215,563	80,696,382	82,131,346	83,471,912	
(9) Investable Assets (Ending)		72,215,563	80,696,382	82,131,346	83,471,912	86,946,428	
(10) Average Investable Assets		60,770,281	76,455,972	81,413,864	82,801,629	85,209,170	
(11) Pre-Tax Investment Income		**1,823,000**	**2,294,000**	**2,442,000**	**2,484,000**	**2,556,000**	**11,599,000**

Notes:
(1), (7) from Exhibit 1.2
(2) and (3) from Exhibit 3.2
(4) = (5) prior fiscal year
(5) = (2) - (3) + (4)
(6) = (6) prior fiscal year + (7) + (11)
(7) from Exhibit 1.1
(8) = (9) prior fiscal year
(9) = (5) + (6) + (7)
(10) = [(8) + (9)] / 2
(11) = (10) x Investment Return Rate of 3.0%

Arkansas - Bureau of Legislative Research
Property Insurance Programs

Pro Forma Estimated Payment Patterns - Actuarial Central Estimate
Plan D.2 - Pooled Risks with $3M per Occurrence / $50M Annual Aggregate Retentions

All Programs	(1)	(2)	(3)	(4)	(5)	(6)
(7) Loss Payment Pattern:		24.7%	51.8%	16.1%	4.3%	3.1%
FYE	Expected	Paid in Fiscal Year Ending				
Incurred	Loss & DCCE	2026	2027	2028	2029	2030
2026	29,575,407	7,291,909	15,327,726	4,761,060	1,272,486	922,226
2027	31,054,177		7,656,504	16,094,112	4,999,113	1,336,111
2028	32,606,886			8,039,329	16,898,818	5,249,069
2029	34,237,231				8,441,296	17,743,759
2030	35,949,092					8,863,361
Total	163,422,793	7,291,909	22,984,230	28,894,502	31,611,713	34,114,525

Notes:
(1) Expected Loss & DCCE from Actuarial Analyses; results have been increased by $300K to load for cat. losses
(2) through (6) = (1) x (7) for each Fiscal Year Ending
(7) from Exhibit 4
All Programs represents the estimated loss & DCCE for AMAIT, APSIT, and ASBA combined

Arkansas - Bureau of Legislative Research
Property Insurance Programs

Pro Forma Estimated Payment Patterns - Adverse Scenario
Plan D.2 - Pooled Risks with $3M per Occurrence / $50M Annual Aggregate Retentions

All Programs	(1)	(2)	(3)	(4)	(5)	(6)
(7) Loss Payment Pattern:		24.7%	51.8%	16.1%	4.3%	3.1%
FYE	Expected	Paid in Fiscal Year Ending				
Incurred	Loss & DCCE	2026	2027	2028	2029	2030
2026	29,575,407	7,291,909	15,327,726	4,761,060	1,272,486	922,226
2027	36,884,330		9,093,946	19,115,642	5,937,653	1,586,954
2028	38,728,546			9,548,644	20,071,424	6,234,536
2029	34,237,231				8,441,296	17,743,759
2030	35,949,092					8,863,361
Total	175,374,605	7,291,909	24,421,672	33,425,346	35,722,860	35,350,835

Notes:
(1) Expected Loss & DCCE from Actuarial Analyses; results have been increased by $300K to load for cat. losses
Years in red represent adverse scenarios (i.e. losses at an 85% confidence level)
(2) through (6) = (1) x (7) for each Fiscal Year Ending
(7) from Exhibit 4

Arkansas - Bureau of Legislative Research
Property Insurance Programs
Evaluated as of June 30, 2024

Cumulative Unlimited Paid Loss & ALAE
($000s Omitted)

Policy Period	Months of Development															
	9	21	33	45	57	69	81	93	105	117	129	141	153	165	177	189
7/1/08-09												8,692	8,692	8,692	8,692	8,692
7/1/09-10											9,904	9,904	9,904	9,904	9,904	
7/1/10-11										11,005	11,005	11,005	11,005	11,005		
7/1/11-12									3,838	3,838	3,838	3,838	3,838			
7/1/12-13								3,634	3,634	3,634	3,634	3,634				
7/1/13-14							10,506	10,500	10,500	10,500	10,500					
7/1/14-15						9,826	9,839	9,839	9,839	9,839						
7/1/15-16					8,036	8,036	8,036	8,036	8,036							
7/1/16-17				11,777	11,777	11,777	11,777	11,777								
7/1/17-18			15,561	16,154	16,589	16,589	16,589									
7/1/18-19		5,745	8,099	8,929	9,851	7,201										
7/1/19-20	2,118	5,689	5,710	5,722	16,523											
7/1/20-21	1,264	9,697	10,982	10,504												
7/1/21-22	2,262	25,936	40,440													
7/1/22-23	3,119	16,727														
7/1/23-24	8,387															

Loss & ALAE Development Factors

Policy Period	Months of Development															
	9:21	21:33	33:45	45:57	57:69	69:81	81:93	93:105	105:117	117:129	129:141	141:153	153:165	165:177	177:189	189:Ult
7/1/08-09												1.000	1.000	1.000	1.000	
7/1/09-10											1.000	1.000	1.000	1.000		
7/1/10-11										1.000	1.000	1.000	1.000			
7/1/11-12									1.000	1.000	1.000	1.000				
7/1/12-13								1.000	1.000	1.000	1.000					
7/1/13-14							0.999	1.000	1.000	1.000						
7/1/14-15						1.001	1.000	1.000	1.000							
7/1/15-16					1.000	1.000	1.000	1.000								
7/1/16-17				1.000	1.000	1.000	1.000									
7/1/17-18			1.038	1.027	1.000	1.000										
7/1/18-19		1.410	1.103	1.103	0.731											
7/1/19-20	2.686	1.004	1.002	2.888												
7/1/20-21	7.672	1.133	0.956													
7/1/21-22	11.465	1.559														
7/1/22-23	5.363															
Average	6.797	1.276	1.025	1.504	0.933	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Wgt. Average	6.624	1.386	1.024	1.286	0.943	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
3 Yr. Wtd.	7.880	1.383	1.015	1.395	0.931	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
Industry	1.595	1.171	1.010	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Selected	7.900	1.280	1.048	1.043	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Cumulative	11.052	1.399	1.093	1.043	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
% to Ultimate	9.0%	71.5%	91.5%	95.8%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Interpolated	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192
Cumulative	4.056	1.308	1.080	1.032	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
% to Ultimate	24.7%	76.5%	92.6%	96.9%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Arkansas - Bureau of Legislative Research
Property Insurance Programs

Pro Forma Income Statement - Actuarial Central Estimate
Plan D.3 - Pooled Risks with $5M per Occurrence / $50M Annual Aggregate Retentions

			Fiscal Years Ending					
		Initial	2026	2027	2028	2029	2030	All Years
	Underwriting Income/Expense:							
(1)	Written Premium		36,200,000	38,010,000	39,911,000	41,907,000	44,002,000	200,030,000
(2)	Incurred Loss & DCCE		31,557,013	33,134,864	34,791,607	36,531,187	38,357,747	174,372,417
(3)	Underwriting Income		**4,642,987**	**4,875,136**	**5,119,393**	**5,375,813**	**5,644,253**	**25,657,583**
	General and Administrative Income/Expenses:							
(4)	Captive Set-Up & Administrative Expeneses							
(4)(a)	Program Set-Up/Ongoing Advisory Fees	250,000	325,000	341,250	358,313	376,228	395,040	2,045,830
(4)(b)	Captive Management Fees	200,000	100,000	105,000	110,250	115,763	121,551	752,563
(4)(c)	Claims Administration Fees		2,208,991	2,319,440	2,435,412	2,557,183	2,685,042	12,206,069
(4)(d)	Actuarial Fees	50,000	180,000	189,000	198,450	208,373	218,791	1,044,614
(4)(e)	Audit Fees		50,000	52,500	55,125	57,881	60,775	276,282
(4)(f)	Attorney Fees	100,000	50,000	52,500	55,125	57,881	60,775	376,282
(4)(g)	Arkansas Insurance Department Fees	25,000	25,000	26,250	27,563	28,941	30,388	163,141
(4)(h)	Premium Taxes		90,500	95,025	99,778	104,768	110,005	500,075
(4)(i)	Asset Management Fee		493,250	741,818	855,560	927,931	991,644	4,010,203
(4)(j)	Director Fees	50,000	5,000	5,000	5,250	5,513	5,788	76,551
(4)(k)	D&O Insurance		25,000	26,250	27,563	28,941	30,388	138,141
(4)(l)	Miscellaneous		10,000	10,500	11,025	11,576	12,155	55,256
(5)	Total Pre-Tax Net U/W Profit/(Loss)	(675,000)	1,080,246	910,603	879,980	894,835	921,912	4,012,577
(6)	Net Pre-Tax Investment Income		1,853,000	2,396,000	2,675,000	2,879,000	3,061,000	12,864,000
(7)	**Total Net Income Before Taxes**	**(675,000)**	**2,933,246**	**3,306,603**	**3,554,980**	**3,773,835**	**3,982,912**	**16,876,577**

Notes:
(1) Selected as the premium to effectively operate the captive at a break even level under the Adverse Scenario
(2) from Exhibit 3.1
(3) = (1) - (2)
(4) Estimated fees based on industry experience; will need to send RFPs to various vendors to formalize expenses
(5) = (3) - [Sum of (4)(a) through (4)(l)]
(6) from Exhibit 2.1
(7) = (5) + (6)

Arkansas - Bureau of Legislative Research
Property Insurance Programs

Pro Forma Income Statement - Adverse Scenario
Plan D.3 - Pooled Risks with $5M per Occurrence / $50M Annual Aggregate Retentions

			Fiscal Years Ending					
		Initial	2026	2027	2028	2029	2030	All Years
	Underwriting Income/Expense:							
(1)	Written Premium		36,200,000	38,010,000	39,911,000	41,907,000	44,002,000	200,030,000
(2)	Incurred Loss & DCCE		31,557,013	40,186,970	42,196,319	36,531,187	38,357,747	188,829,236
(3)	Underwriting Income		**4,642,987**	**(2,176,970)**	**(2,285,319)**	**5,375,813**	**5,644,253**	**11,200,764**
	General and Administrative Income/Expenses:							
(4)	Captive Set-Up & Administrative Expeneses							
(4)(a)	Program Set-Up/Ongoing Advisory Fees	250,000	325,000	341,250	358,313	376,228	395,040	2,045,830
(4)(b)	Captive Management Fees	200,000	100,000	105,000	110,250	115,763	121,551	752,563
(4)(c)	Claims Administration Fees		2,208,991	2,813,088	2,953,742	2,557,183	2,685,042	13,218,047
(4)(d)	Actuarial Fees	50,000	180,000	189,000	198,450	208,373	218,791	1,044,614
(4)(e)	Audit Fees		50,000	52,500	55,125	57,881	60,775	276,282
(4)(f)	Attorney Fees	100,000	50,000	52,500	55,125	57,881	60,775	376,282
(4)(g)	Arkansas Insurance Department Fees	25,000	25,000	26,250	27,563	28,941	30,388	163,141
(4)(h)	Premium Taxes		90,500	95,025	99,778	104,768	110,005	500,075
(4)(i)	Asset Management Fee		493,250	741,818	855,560	927,931	991,644	4,010,203
(4)(j)	Director Fees	50,000	5,000	5,000	5,250	5,513	5,788	76,551
(4)(k)	D&O Insurance		25,000	26,250	27,563	28,941	30,388	138,141
(4)(l)	Miscellaneous		10,000	10,500	11,025	11,576	12,155	55,256
(5)	Total Pre-Tax Net U/W Profit/(Loss)	(675,000)	1,080,246	(6,635,151)	(7,043,061)	894,835	921,912	(11,456,219)
(6)	Net Pre-Tax Investment Income		1,853,000	2,363,000	2,518,000	2,554,000	2,632,000	11,920,000
(7)	**Total Net Income Before Taxes**	**(675,000)**	**2,933,246**	**(4,272,151)**	**(4,525,061)**	**3,448,835**	**3,553,912**	**463,781**

Notes:
(1) Selected as the premium to effectively operate the captive at a break even level under the Adverse Scenario
(2) from Exhibit 3.2
(3) = (1) - (2)
(4) Estimated fees based on industry experience; will need to send RFPs to various vendors to formalize expenses
(5) = (3) - [Sum of (4)(a) through (4)(l)]
(6) from Exhibit 2.2
(7) = (5) + (6)

Arkansas - Bureau of Legislative Research
Property Insurance Programs

Pro Forma Balance Sheet - Actuarial Central Estimate
Plan D.3 - Pooled Risks with $5M per Occurrence / $50M Annual Aggregate Retentions

		Fiscal Years Ending					
	Initial	2026	2027	2028	2029	2030	All Years
(1) Written Premium		36,200,000	38,010,000	39,911,000	41,907,000	44,002,000	200,030,000
(2) Incurred Loss & DCCE		31,557,013	33,134,864	34,791,607	36,531,187	38,357,747	174,372,417
(3) CY Paid Loss & DCCE		7,780,480	24,524,215	30,830,486	33,729,755	36,400,260	133,265,196
(4) Loss & DCCE Reserves (Beginning)		-	23,776,533	32,387,182	36,348,303	39,149,735	
(5) Loss & DCCE Reserves (Ending)		23,776,533	32,387,182	36,348,303	39,149,735	41,107,222	
(6) Net Position (Beginning)	50,000,000	49,325,000	52,258,246	55,564,849	59,119,830	62,893,665	
(7) Total Pre-Tax Net U/W Profit/(Loss)	(675,000)	1,080,246	910,603	879,980	894,835	921,912	4,012,577
(8) Investable Assets (Beginning)		49,325,000	74,181,779	85,556,031	92,793,133	99,164,400	
(9) Investable Assets (Ending)		74,181,779	85,556,031	92,793,133	99,164,400	104,922,798	
(10) Average Investable Assets		61,753,390	79,868,905	89,174,582	95,978,766	102,043,599	
(11) Pre-Tax Investment Income		**1,853,000**	**2,396,000**	**2,675,000**	**2,879,000**	**3,061,000**	**12,864,000**

Notes:
(1), (7) from Exhibit 1.1
(2) and (3) from Exhibit 3.1
(4) = (5) prior fiscal year
(5) = (2) - (3) + (4)
(6) = (6) prior fiscal year + (7) + (11)
(7) from Exhibit 1.1
(8) = (9) prior fiscal year
(9) = (5) + (6) + (7)
(10) = [(8) + (9)] / 2
(11) = (10) x Investment Return Rate of 3.0%

Arkansas - Bureau of Legislative Research
Property Insurance Programs

Pro Forma Balance Sheet - Adverse Scenario
Plan D.3 - Pooled Risks with $5M per Occurrence / $50M Annual Aggregate Retentions

		Fiscal Years Ending					
	Initial	2026	2027	2028	2029	2030	All Years
(1) Written Premium		36,200,000	38,010,000	39,911,000	41,907,000	44,002,000	200,030,000
(2) Incurred Loss & DCCE		31,557,013	40,186,970	42,196,319	36,531,187	38,357,747	188,829,236
(3) CY Paid Loss & DCCE		7,780,480	26,262,934	36,310,959	38,702,566	37,895,691	146,952,630
(4) Loss & DCCE Reserves (Beginning)		-	23,776,533	37,700,570	43,585,929	41,414,550	
(5) Loss & DCCE Reserves (Ending)		23,776,533	37,700,570	43,585,929	41,414,550	41,876,606	
(6) Net Position (Beginning)	50,000,000	49,325,000	52,258,246	47,986,095	43,461,034	46,909,869	
(7) Total Pre-Tax Net U/W Profit/(Loss)	(675,000)	1,080,246	(6,635,151)	(7,043,061)	894,835	921,912	(11,456,219)
(8) Investable Assets (Beginning)		49,325,000	74,181,779	83,323,665	84,528,963	85,770,419	
(9) Investable Assets (Ending)		74,181,779	83,323,665	84,528,963	85,770,419	89,708,387	
(10) Average Investable Assets		61,753,390	78,752,722	83,926,314	85,149,691	87,739,403	
(11) Pre-Tax Investment Income		**1,853,000**	**2,363,000**	**2,518,000**	**2,554,000**	**2,632,000**	**11,920,000**

Notes:
(1), (7) from Exhibit 1.2
(2) and (3) from Exhibit 3.2
(4) = (5) prior fiscal year
(5) = (2) - (3) + (4)
(6) = (6) prior fiscal year + (7) + (11)
(7) from Exhibit 1.1
(8) = (9) prior fiscal year
(9) = (5) + (6) + (7)
(10) = [(8) + (9)] / 2
(11) = (10) x Investment Return Rate of 3.0%

Arkansas - Bureau of Legislative Research
Property Insurance Programs

Pro Forma Estimated Payment Patterns - Actuarial Central Estimate
Plan D.3 - Pooled Risks with $5M per Occurrence / $50M Annual Aggregate Retentions

All Programs	(1)	(2)	(3)	(4)	(5)	(6)
(7) Loss Payment Pattern:		24.7%	51.8%	16.1%	4.3%	3.1%
FYE	Expected	Paid in Fiscal Year Ending				
Incurred	Loss & DCCE	2026	2027	2028	2029	2030
2026	31,557,013	7,780,480	16,354,711	5,080,060	1,357,745	984,017
2027	33,134,864		8,169,504	17,172,447	5,334,063	1,425,633
2028	34,791,607			8,577,979	18,031,069	5,600,766
2029	36,531,187				9,006,878	18,932,623
2030	38,357,747					9,457,222
Total	174,372,417	7,780,480	24,524,215	30,830,486	33,729,755	36,400,260

Notes:
(1) Expected Loss & DCCE from Actuarial Analyses; results have been increased by $300K to load for cat. losses
(2) through (6) = (1) x (7) for each Fiscal Year Ending
(7) from Exhibit 4
All Programs represents the estimated loss & DCCE for AMAIT, APSIT, and ASBA combined

Arkansas - Bureau of Legislative Research
Property Insurance Programs

Pro Forma Estimated Payment Patterns - Adverse Scenario
Plan D.3 - Pooled Risks with $5M per Occurrence / $50M Annual Aggregate Retentions

All Programs	(1)	(2)	(3)	(4)	(5)	(6)
(7) Loss Payment Pattern:		24.7%	51.8%	16.1%	4.3%	3.1%
FYE	Expected	Paid in Fiscal Year Ending				
Incurred	Loss & DCCE	2026	2027	2028	2029	2030
2026	31,557,013	7,780,480	16,354,711	5,080,060	1,357,745	984,017
2027	40,186,970		9,908,223	20,827,266	6,469,314	1,729,051
2028	42,196,319			10,403,634	21,868,629	6,792,779
2029	36,531,187				9,006,878	18,932,623
2030	38,357,747					9,457,222
Total	188,829,236	7,780,480	26,262,934	36,310,959	38,702,566	37,895,691

Notes:
(1) Expected Loss & DCCE from Actuarial Analyses; results have been increased by $300K to load for cat. losses
Years in red represent adverse scenarios (i.e. losses at an 85% confidence level)
(2) through (6) = (1) x (7) for each Fiscal Year Ending
(7) from Exhibit 4

Arkansas - Bureau of Legislative Research
Property Insurance Programs
Evaluated as of June 30, 2024

Cumulative Unlimited Paid Loss & ALAE
($000s Omitted)

Policy Period	Months of Development															
	9	21	33	45	57	69	81	93	105	117	129	141	153	165	177	189
7/1/08-09												8,692	8,692	8,692	8,692	8,692
7/1/09-10											9,904	9,904	9,904	9,904	9,904	
7/1/10-11										11,005	11,005	11,005	11,005	11,005		
7/1/11-12									3,838	3,838	3,838	3,838	3,838			
7/1/12-13								3,634	3,634	3,634	3,634	3,634				
7/1/13-14							10,506	10,500	10,500	10,500	10,500					
7/1/14-15						9,826	9,839	9,839	9,839	9,839						
7/1/15-16					8,036	8,036	8,036	8,036	8,036							
7/1/16-17				11,777	11,777	11,777	11,777	11,777								
7/1/17-18			15,561	16,154	16,589	16,589	16,589									
7/1/18-19		5,745	8,099	8,929	9,851	7,201										
7/1/19-20	2,118	5,689	5,710	5,722	16,523											
7/1/20-21	1,264	9,697	10,982	10,504												
7/1/21-22	2,262	25,936	40,440													
7/1/22-23	3,119	16,727														
7/1/23-24	8,387															

Loss & ALAE Development Factors

Policy Period	Months of Development															
	9:21	21:33	33:45	45:57	57:69	69:81	81:93	93:105	105:117	117:129	129:141	141:153	153:165	165:177	177:189	189:Ult
7/1/08-09												1.000	1.000	1.000	1.000	
7/1/09-10											1.000	1.000	1.000	1.000		
7/1/10-11										1.000	1.000	1.000	1.000			
7/1/11-12									1.000	1.000	1.000	1.000				
7/1/12-13								1.000	1.000	1.000	1.000					
7/1/13-14							0.999	1.000	1.000	1.000						
7/1/14-15						1.001	1.000	1.000	1.000							
7/1/15-16					1.000	1.000	1.000	1.000								
7/1/16-17				1.000	1.000	1.000	1.000									
7/1/17-18			1.038	1.027	1.000	1.000										
7/1/18-19		1.410	1.103	1.103	0.731											
7/1/19-20	2.686	1.004	1.002	2.888												
7/1/20-21	7.672	1.133	0.956													
7/1/21-22	11.465	1.559														
7/1/22-23	5.363															
Average	6.797	1.276	1.025	1.504	0.933	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Wgt. Average	6.624	1.386	1.024	1.286	0.943	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
3 Yr. Wtd.	7.880	1.383	1.015	1.395	0.931	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
Industry	1.595	1.171	1.010	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Selected	7.900	1.280	1.048	1.043	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Cumulative	11.052	1.399	1.093	1.043	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
% to Ultimate	9.0%	71.5%	91.5%	95.8%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Interpolated	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192
Cumulative	4.056	1.308	1.080	1.032	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
% to Ultimate	24.7%	76.5%	92.6%	96.9%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

VII. APPENDICES

Issue Analysis

A Public Policy Paper of the National Association of Mutual Insurance Companies September 2009

The Financial Crisis, Systemic Risk, and the Future of Insurance Regulation

By
Scott E. Harrington, Ph.D.

Executive Summary

The bursting of the housing bubble and resulting financial crisis have been followed by the worst economic slowdown since the early 1980s if not the Great Depression. This *Issue Analysis* considers the role of AIG and the insurance sector in the financial crisis, the extent to which insurance involves systemic risk, and the implications for insurance regulation. It provides an overview of the causes of the financial crisis and the events and policies that contributed to the AIG intervention. It considers sources of systemic risk, whether insurance in general poses systemic risk, whether a systemic risk regulator is desirable for insurers or other non-bank financial institutions, and the implications of the crisis for optional federal chartering of insurers and for insurance regulation in general.

Causes of the Financial Crisis

Factors that contributed to the crisis include:

- Federal government policies encouraged rapid expansion of lending to low-income home buyers with low initial interest rates, low down payments, and lax lending criteria.
- Government-sponsored and private residential mortgage-backed securities, rapid growth in credit default swaps (CDS), and related instruments spread exposure to house price declines and mortgage defaults widely across domestic and global financial institutions in a complex and opaque set of transactions.
- Bank holding companies aggressively expanded mortgage lending and investment, often through off-balance sheet entities that evaded bank capital requirements. Leading investment banks invested aggressively in mortgage-related instruments.
- Lehman Brothers, AIG, and other organizations became major writers of credit default swaps. When coupled with high leverage, CDS protection sellers became highly vulnerable to mortgage defaults.
- Much residential mortgage lending shifted to an "originate and distribute" model, where originators retained little risk on the mortgages. Subprime mortgage originators were often new entrants with little reputational capital at risk.

Scott E. Harrington is the Alan B. Miller Professor of Health Care Management and Insurance and Risk Management, Wharton School, University of Pennsylvania. The author wishes to thank NAMIC for financial support and Robert Detlefsen of NAMIC for his careful and objective comments.

- The Federal Reserve kept interest rates at historically low levels, which fueled housing demand and encouraged lenders to relax mortgage-lending criteria.

The Paradox of AIG

- Apart from AIG, the insurance sector as a whole was largely on the periphery of the crisis. The AIG crisis was heavily influenced by its CDS portfolio, sold by a non-insurance entity, AIG Financial Products (AIGFP), which was not subject to insurance regulation.

The AIG crisis was heavily influenced by its CDS portfolio, sold by a non-insurance entity, AIG Financial Products (AIGFP), which was not subject to insurance regulation.

- Rating downgrades and declines in values of securities on which AIGFP had written credit default swaps caused it to have to post large amounts of collateral. AIG also ran into major problems with the securities lending program of its life insurance subsidiaries when borrowers requested the return of large amounts of collateral. AIG's overall investment portfolio was significantly exposed to loss from reductions in values of mortgage-related securities.

- Much of the federal government's financial assistance to AIG was provided for the benefit of AIG's CDS and securities lending counterparties, primarily domestic and foreign banking and investment banking organizations. It is not clear that any of AIG's insurance subsidiaries would have become insolvent if the Federal Reserve had not intervened.

- AIG was subject to consolidated regulation and oversight by the federal Office of Thrift Supervision and was recognized as such for meeting the 2005 E.U. regulatory criterion for group supervision of financial service entities. If the financial crisis and AIG intervention are to be blamed on ineffective regulation, the blame should reflect the substantial evidence of fundamental failures in U.S. and foreign banking regulation.

Systemic Risk and the Crisis

- Systemic risk refers to the risk of widespread harm to financial institutions and associated spillovers on the real economy that may arise from interdependencies among those institutions and associated risk of contagion. Systemic risk is conceptually distinct from the risk of common shocks to the economy, such as widespread reductions in housing prices, which have the potential to harm large numbers of people and firms directly (i.e., without contagion).

- Possible sources of systemic risk include: (1) a shock may cause one or more financial institutions to sell large amounts of assets at temporarily depressed prices, further depressing prices and market values of institutions that hold similar assets; (2) shocks to some firms may make them unable to honor their commitments, causing some of their counterparties to likewise default, with repercussions that cascade through financial markets; (3) revelation of financial problems at some institutions may create uncertainty about the effects on counterparties and whether other institutions face similar problems, so that parties become reluctant to trade until further information becomes available; and (4) possibly irrational contagion, where investors and/or customers withdraw funds without regard to whether specific institutions are at risk.

- Prior research, which largely predates the growth of credit default swaps and complex securitizations, provides almost no evidence of irrational contagion and little evidence of contagion related to counterparty risk, asset prices, or uncertainty/opacity.

- The AIG crisis and general financial crisis were precipitated by the bursting of the housing price bubble and attendant increases in actual and expected mortgage defaults, which greatly reduced the values of mortgage-related securities as new information was reflected in prices. While there apparently were some elements of contagion, the principal problem was the decline in security values.

- Whether AIG's CDS portfolio and securities lending presented significant risk of contagion has and will be debated. Little is known about the extent to which an AIG bankruptcy would have had significant adverse effects beyond its counterparties, or even the extent to which its counterparties had hedged their bets with AIG or otherwise reduced their risk.

Systemic Risk in Insurance

- Systemic risk is low in insurance markets compared with banking, especially for property/casualty insurance, in part because insurers hold greater amounts of capital in relation to their liabilities, reducing their vulnerability to shocks. Moreover, shocks to insurers do not threaten the economy's payment system, as might be true for shocks to commercial banks.

- Banking crises have the potential to produce rapid and widespread harm to economic activity and employment, which provides some rationale for relatively broad government guarantees of bank deposits and strict capital requirements. Because insurance, especially property/casualty, poses much less systemic risk, there is less need for broad government guarantees to prevent potentially widespread runs that would destabilize the economy. Insurance guarantees have appropriately been narrower in scope than in banking, and market discipline is generally strong. Capital requirements have been much less binding – insurers commonly have held much more capital than required by regulation.

Proposed Regulation of "Systemically Significant" Insurers

- A June 2009 U.S. Treasury white paper proposes regulation by the Federal Reserve of insurance and other non-bank institutions it would designate as systemically significant. A bill introduced by Representatives Melissa Bean (D-Ill.) and Edward Royce (R-Calif.) would create an optional federal chartering system for insurers under which the President would designate an agency as systemic risk regulator for systemically significant state and federally chartered insurers. The agency could force an insurer to be federally chartered.

- Strong arguments against creating a systemic risk regulator that could designate insurers and other non-bank financial institutions as being subject to comprehensive regulation and oversight by the Federal Reserve or other agency include:

  – Any institution designated "systemically significant" would be regarded as too big to fail, reducing market discipline and aggravating moral hazard.

  – Implicit or explicit government guarantees of the obligations of any institution designated systemically significant would provide it with a material competitive advantage and lower its cost of capital compared with companies not so designated.

  – Political pressure, the history of bank capital regulation, and incentives for regulatory arbitrage make it doubtful

Systemic risk is low in insurance markets compared with banking, especially for property/casualty insurance, in part because insurers hold greater amounts of capital in relation to their liabilities.

The argument that AIG's problems and federal intervention make a *prima facie* case for a systemic risk regulator of large, interconnected non-bank financial institutions ignores the regulated insurance sector's modest role in the crisis.

that stronger capital requirements would offset the increased moral hazard and unequal competitive advantage versus institutions not designated as systemically significant.

  - A systemic risk regulator could have an incentive to prop up an institution designated systemically significant even if the institution's financial problems had little potential for systemic consequences.

- The argument that AIG's problems and federal intervention make a *prima facie* case for a systemic risk regulator for large and interconnected non-bank financial institutions does not adequately consider the potential benefits and costs. It does not consider the failures of federal regulation of large banking organizations that contributed to the financial crisis. It largely ignores the regulated insurance sector's comparatively modest role in the crisis. It provides no guidance for limiting the scope of discretionary federal authority to intervene in the financial sector in particular and the economy in general.

- It is hardly certain that a systemic risk regulator would be effective at limiting risk in a dynamic, global environment. The financial crisis underscores (1) the imperfect nature of federal regulation of banks and related institutions, (2) the necessity of renewed vigilance in banking oversight and capital requirements, and (3) the desirability of encouraging additional market discipline in banking.

- The federal government was able to intervene in AIG and limit any potential contagion without the authority to regulate AIG *ex ante*. The question arises: What would the Federal Reserve or some other federal agency have done differently if it had systemic risk authority before and during the crisis? The answer is not clear and has not been provided.

The Crisis and Optional Federal Chartering

- The financial crisis and AIG bailout have not significantly strengthened the case for optional federal chartering of insurers. An assertion that mandatory federal chartering should be adopted for insurers designated as systemically significant is subject to the arguments against a systemic risk regulator outlined above. AIG's problems cannot be primarily attributed to any insurance regulatory failure. Given what we currently know, AIG would likely have been able to largely if not completely meet its obligations to policyholders without federal intervention, with state insurance guaranty funds serving as a potentially important backup.

- In view of what happened at Citibank, Bank of America, and other bank and investment bank holding companies, a strong case for federal insurance regulation in response to the crisis would have to explain how federal regulation of AIG before the crisis would specifically have prevented or mitigated its problems. There can be no presumption that federal regulation of AIG's insurance operations would have prevented or mitigated risk taking at AIG, or that optional federal chartering with or without mandatory federal chartering for large insurance organizations would mitigate any role of insurance in some future financial crisis. It's just as likely or more likely that federal regulation of large insurers would have further increased risk.

Implications for Insurance Regulation

1. A primary objective of legislative and regulatory responses to the financial

crisis should be to encourage market discipline as a means to promote safety and soundness in banking, insurance, and other financial institutions. An overriding goal of any changes in regulation in response to the AIG anomaly should be to avoid extending explicit or implicit too-big-to-fail policies.

2. The financial crisis and AIG intervention do not justify creation of a systemic risk regulator with authority over insurers and non-bank institutions designated as "systemically significant." The creation of a systemic risk regulator would very likely undermine market discipline and protect even more institutions, investors, and consumers from the downside of risky behavior.

3. The financial crisis and AIG intervention do not fundamentally strengthen arguments for either optional or mandatory federal regulation of insurance. Systemic risk aside, any debate over optional federal chartering of insurers should likewise recognize the central importance of avoiding expanded government guarantees of insurers' obligations.

4. Recent events do not justify broad authority for the FDIC or some other federal agency to selectively seize and resolve financial troubled insurance organizations or other non-banking organizations. The question of whether regulatory authority for resolving financially distressed, non-bank organizations should be expanded in any way deserves more study before being given serious consideration.

5. The financial crisis does not suggest any need for fundamental changes in U.S. insurance company capital requirements, which should continue to recognize the distinctive nature of insurance markets. Given limited systemic risk and potential for contagion, government guarantees of insurers' obligations are appropriately narrower in scope than in banking, and market discipline is reasonably strong. Strong market discipline favors capital requirements that generally are easily met by the bulk of insurance companies, reducing potential undesirable distortions of sound companies' operating decisions and incentives for evading the requirements.

6. Creating some form of federal insurance information office to provide information, serve as a liaison on insurance issues with Congress, and represent the United States in international insurance regulatory forums would be sensible, with suitable safeguards of state authority. The creation of a federal council to monitor domestic and international financial institutions and the economy for developments that could pose systemic risk and potentially lead to a future crisis could also be useful.

Introduction

The bursting of the housing bubble and resulting financial crisis have been followed by the worst economic slowdown since the early 1980s if not the Great Depression. As subprime mortgage defaults rose in 2007, the Federal Deposit Insurance Corporation (FDIC) closed down a number of major subprime lenders. The Federal Reserve rescued investment bank Bear Stearns with a $30 billion guarantee to facilitate its acquisition by J.P. Morgan in March 2008. September 15-16, 2008, saw investment bank Lehman Brothers file for bankruptcy, the distressed sale of investment bank Merrill Lynch to Bank of America, and the announcement of an $85 billion bailout of American International Group (AIG).

The financial crisis and AIG intervention do not fundamentally strengthen arguments for either optional or mandatory federal regulation of insurance.

Congress enacted the $700 billion Troubled Asset Relief Program (TARP) in October, which was followed by massive infusions of capital into numerous banks, including the nine largest, along with large guarantees of bank debt. Other federal interventions included hundreds of billions of dollars of guarantees to support money market mutual funds, commercial paper, and numerous asset-backed securities.

The underlying causes of the financial crisis and how it was transmitted across firms, sectors, and borders will be studied and debated for years. Whatever the causes, the crisis has led to numerous proposals for changes in financial regulation, including the proposed creation of a systemic risk regulator and expanded federal government authority to resolve financially distressed non-bank institutions. The proposed changes have been motivated in significant part by the financial distress, bailout, and quasi-nationalization of AIG, the world's largest, publicly traded insurance organization. In addition to providing impetus for the creation of a systemic risk regulator and expanded federal authority to resolve financially distressed non-bank entities, proponents of optional federal chartering of insurers argue that the AIG intervention makes some form of federal chartering essential.

Many parties made aggressive bets that housing prices would continue to rise. It's also clear that government policy and regulatory failure contributed to the crisis.

This *Issue Analysis* considers the role of AIG and the insurance sector in the financial crisis, the extent to which insurance involves systemic risk, and the implications for insurance regulation. I begin with a brief overview of the causes of the financial crisis. I then explore the events and policies that contributed to the AIG intervention. This synopsis is followed by an elaboration of the meaning of systemic risk and whether insurance in general poses systemic risk. I discuss whether a systemic risk regulator is desirable for insurers or other non-bank financial institutions. The last two sections address the implications of the crisis for optional federal chartering of insurers and for insurance regulation in general.

Causes of the Financial Crisis

While the varied and complex causes of the 2007-2009 financial crisis will be studied and debated for decades, the popular media have often focused on alleged "Wall Street greed," and, to a lesser extent, the alleged evils of financial "deregulation." The early consensus among researchers and policy analysts is that incentive compensation arrangements in the financial sector contributed to aggressive risk taking in residential mortgages and real estate, and it is possible that certain relaxations in regulation also played a role. It is clear that many parties made aggressive bets that housing prices would continue to rise or at least not fall, contributing to the housing price bubble and leading to widespread financial distress when the bubble burst. It is also clear that a number of government policy and regulatory failures contributed to the crisis.

While their relative importance is debatable, the following factors all contributed to the crisis:[1]

- Federal government policies encouraged the Government Sponsored Enterprises (GSEs), Fannie Mae and Freddie Mac, to expand rapidly through the early 2000s, in significant part to support lending to low-income home buyers. The Community Reinvestment Act and pressure from the Department of Housing and Urban Development likewise encouraged commercial banks to expand mortgage lending in low-income, minority neighborhoods.

- Subprime and Alt-A mortgage lending with low initial interest rates and little required down payment accelerated during the middle part of the decade in conjunction with rapid growth in private, residential mortgage-backed securities and explosive growth in credit default swaps (CDS) and related instruments, which spread exposure to house price declines and mortgage

defaults widely across domestic and global financial institutions.

- With the federal deposit insurance umbrella protecting depositors in their bank subsidiaries, bank holding companies aggressively expanded mortgage lending and investment in competition with investment banks and other financial institutions, commonly through off-balance sheet entities that evaded bank capital requirements.

- The leading investment banks, which had all converted from partnerships to corporations with limited liability, likewise invested aggressively in competition with investment banking subsidiaries of bank holding companies.[2] In 2004 they voluntarily agreed to be subject to consolidated supervision by the Securities and Exchange Commission (SEC) in order to meet the requirements of a European Union (E.U.) regulatory directive requiring consolidated supervision of their E.U. subsidiaries. The agreement relaxed capital requirements for the investment banks' broker-dealer subsidiaries. Whether and how much this change motivated them to increase their leverage has been debated.[3]

- Lehman Brothers, AIG, and others became major writers of CDS instruments, which, as discussed further below, offered domestic and foreign banks and financial institutions relatively low-cost protection against reductions in values of mortgage-related securities. When coupled with high leverage, CDS protection sellers became highly vulnerable to increases in mortgage defaults.

- The securitization of subprime mortgages and explosion of CDS and more complex derivatives linked to residential mortgages caused the risk of housing price declines and mortgage defaults to be spread widely among financial institutions in a complex and opaque set of transactions. This complexity and opacity created substantial uncertainty about the financial exposure of different institutions.

- Residential mortgage lending in significant measure changed to an "originate and distribute" model, where mortgage originators retained little risk on the mortgages that were securitized and distributed broadly among financial institutions. Subprime mortgage originators were often new entrants that had little reputational capital at risk, and they did not have to hold the mortgages.

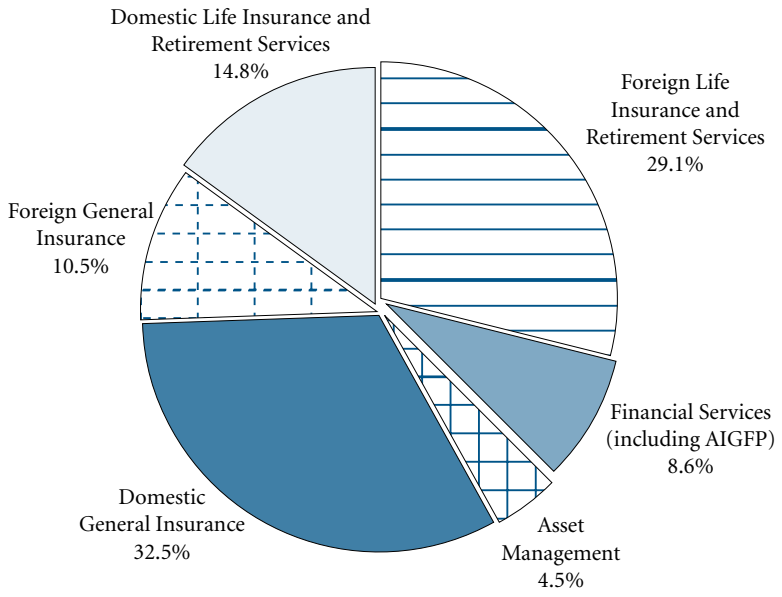
- Because many subprime borrowers acquired properties with little or no money down, they faced relatively little loss if housing prices fell and they defaulted on their mortgages. Many people took low-cost mortgages on investment property to speculate on housing-price increases. Others took low-cost second mortgages to fund consumption.

- The Federal Reserve played a key role in promoting aggressive borrowing and lending. It kept interest rates at historically low levels until it was too late to prevent a severe correction in housing prices and construction. The low-interest rate policy fueled housing demand and encouraged lenders to relax mortgage-lending criteria.

What role did the insurance sector play? The collapse and bailout of AIG has dominated discussion of this issue and created an impression that insurance was somehow a central part of the crisis. However, as I elaborate below, the insurance sector as a whole was largely and perhaps remarkably on the periphery of the crisis. Apart from AIG, where much of its problems arose from non-insur-

When coupled with high leverage, Lehman Brothers, AIG, and other sellers of credit default swaps became highly vulnerable to increases in mortgage defaults.

Figure 1
AIG Revenue Distribution Before the Downturn
12-months ending December 31, 2006



Source: AIG 2006 SEC Form 10-K

ance activity, property/casualty insurers and most life-health insurers have thus far escaped severe adverse consequences from the subprime meltdown and attendant financial crisis. Even AIG's property/casualty subsidiaries appeared reasonably well capitalized at the end of the third quarter of 2008, with moderate leverage, relatively safe assets, and a relatively high risk-based capital ratio.[4]

A number of large life insurers have experienced a certain degree of financial stress and financial rating downgrades. This is not surprising given their extensive long-term investment in mortgages, other fixed income securities, and common equities to fund asset accumulation products, including many contracts with minimum return guarantees. These insurers' financial stresses resulting from contracts with minimum return guarantees have coincided with substantial benefits to the individuals and businesses that bought those contracts to fund their retirement savings and who were partially protected from the sharp decline in stock prices in the second half of 2008.[5]

A number of insurance companies have sought and received permission in some states to modify financial reporting to improve their reported capital.[6] Six insurers applied for and were authorized to receive TARP funds. Four of them (Allstate, Ameriprise Financial, Principal Financial, and Prudential Financial) subsequently declined to receive the funds. Hartford Financial received $3.4 billion; Lincoln Financial received $950 million. Another major life insurer, Met Life, declined to seek TARP funding. Genworth Financial applied for but was denied funding. Apart from AIG, the insurance sector has represented a negligible amount of TARP funding and other federal assistance (see below).

Leading "monoline" mortgage and bond insurers experienced significant losses and highly publicized downgrades by financial rating agencies. None of these firms has thus far become impaired or received a direct federal bailout. Insurance law and regulation mandate a monoline structure for such insurers and require substantial contingency reserves, including a requirement that half of all premiums written each year be held as a contingency reserve for 10 years. This regulatory framework helped prevent their problems from spilling over to other lines of insurance, in contrast to what occurred in commercial and investment banking.[7]

The Paradox of AIG

The collapse, bailout, and quasi-nationalization of AIG were arguably the most shocking development in the financial crisis. The initial $85 billion assistance package has subsequently been modified on several occasions, with total federal commitments to provide assistance growing to $182.5 billion or more and assistance to date totaling almost $122 billion. As elaborated below, most of the assistance has been paid to bank

and investment bank counterparties in credit default swaps and security lending transactions.

AIG is a complex organization consisting of approximately 70 U.S. insurance companies and 175 non-U.S. companies and insurers doing business in 130 countries. At year-end 2006, before its financial condition began to erode, domestic property/casualty (general) insurance represented 32.5 percent of its revenues; domestic life insurance and retirement services represented 14.8 percent (see Figure 1). Foreign insurance operations of all types represented another 39.6 percent of its total revenues. "Financial services," which included consumer finance, aircraft leasing, and AIG Financial Products (AIGFP), a subsidiary of the AIG holding company operating out of London, represented 8.6 percent of revenues. Asset management represented 4.5 percent.

The crisis at AIG was heavily influenced by AIGFP's CDS portfolio. Rating downgrades and declines in values of "super senior multi-sector Collateralized Debt Obligation (CDO)" securities on which AIGFP had written credit default swaps forced AIGFP to post large amounts of collateral. By the end of August 2008, it had posted about $20 billion of additional collateral for its CDS portfolio. AIG also ran into major problems with the securities lending program of its life insurance subsidiaries, which had $69 billion in loans outstanding at the end of August. Borrowers began requesting returns of large amounts of collateral in September. The liquidity problems created by collateral calls for both programs "were significantly exacerbated by the downgrades of AIG's long-term debt ratings by S&P, Moody's, and Fitch on September 15, 2008."[8]

AIG's CDS Portfolio

In a basic credit default swap, the protection seller agrees to protect the protection buyer against credit risk events associated with specified underlying securities. If a specified credit event occurs, the protection seller is obligated to make either a cash payment to the buyer or pay the notional amount of the underlying securities in exchange for the underlying securities.

Credit default swaps are not legally considered to be insurance,[9] and U.S. insurance regulation prohibits insurance companies from writing credit default swaps. They have some economic characteristics similar to insurance, but the protection buyer does not need an insurable interest in the underlying securities or exposure. They transfer risk from the protection buyer to the protection seller, and they involve some degree of risk spreading by the protection buyer. By writing credit default swaps on many underlying securities, some of the risk of selling protection can be diversified away. However, credit default swaps inherently pose significant risk of catastrophic loss in the event of deterioration in credit quality throughout multiple sectors of the economy.

AIGFP and divisions of many investment banks and bank holding companies were primary players in the CDS market as it expanded rapidly during the past decade. AIGFP had $533 billion (net notional amount) of credit default swaps outstanding at year-end 2007. AIG categorized 71 percent of this amount as representing "Regulatory Capital" contracts. These contracts generally offered protection against credit-related losses on corporate loans and prime residential mortgages. They were largely sold to E.U. banks, which by buying protection from AIG were able to reduce or even eliminate capital requirements for holding the underlying securities under the first Basel Agreement.[10] The buyers of the AIG swaps (and those sold by investment banks) were engaging in regulatory arbitrage to reduce their required capital during transition to the new requirements under Basel II, which would allow the largest banks to reduce required capital based on internal capital models.

AIG classified the remainder of AIGFP's CDS portfolio as "Arbitrage." At year-end 2007, the arbitrage CDS portfolio was divided between

Credit default swaps are not insurance. While they have some characteristics similar to insurance, the buyers of CDS protection need not have an insurable interest in the underlying security.

credit default swaps on "multi-sector CDOs" ($78 billion notional value) and on corporate loans/collateralized loan obligations ($70 billion). The bulk of the multi-sector CDO swaps were written on "super senior" tranches of the underlying securities, which included residential mortgage-backed securities (RMBS), commercial mortgage-backed securities (CMBS), and collateralized debt obligations. Of the $78 billion multi-sector CDO swap portfolio, $61 billion included some exposure to subprime mortgages.

The super senior tranches of the securities underlying AIG's credit default swaps would not be impaired unless the underlying tranches, including a triple-A rated tranche, were exhausted. AIG's internal credit-risk models predicted that the risk was negligible. AIG ceased writing new multi-sector CDO products in 2005 as the housing market slowed and subprime loan experience began to deteriorate. As housing prices began to fall and defaults of subprime mortgages increased further in 2007 and 2008, AIG had to post increasing amounts of collateral with its multi-sector CDO swap portfolio counterparties, which ultimately precipitated intervention by the Federal Reserve in September 2008.

Credit default swaps sold by AIGFP and other non-insurance entities were not backed by the large amounts of capital that would be held to back the sale of insurance with catastrophe exposure.

Credit default swaps sold by AIGFP and other non-insurance entities were not backed by the large amounts of capital that would be held to back the sale of insurance with catastrophe exposure. Some protection sellers apparently hedged a significant amount of their risk by purchasing credit default swaps or other contracts. On the other hand, CDS writers commonly increased their bets on housing prices by investing directly in mortgage-backed securities and other securities vulnerable to reductions in housing prices.

Given the large losses stemming from AIGFP's super senior multi-sector CDO swap portfolio, it's obvious that the swaps were underpriced in an *ex post* sense. Many observers believe that the contracts were underpriced *ex ante*; i.e., they were too cheap given the risk of loss at the time they were written. The contracts clearly were not backed by anything close to the amount of capital that would have been needed to respond to reductions in the value of the underlying securities and collateral calls by counterparties. If AIG's credit protection was underpriced, its counterparties either were unaware or didn't care, perhaps because they believed that AIG either could not or would not be allowed to default.

AIG's Securities Lending Program

Securities lending has been common among financial institutions for many years. It involves one institution, such as a life insurer, lending securities to another, often a broker-dealer (e.g., for executing short sales or diversification). The borrower posts collateral in the form of cash or high-quality securities, typically in the amount of 102 percent to 105 percent of the value of the borrowed securities. The lender reinvests the collateral and earns any spread between the returns on the invested collateral and the returns on the underlying securities. The spread is sometimes shared between the lender and borrower.

The significant declines in the values of many assets during 2007-2008 reduced the values of reinvested collateral in many securities lending programs. Borrowers terminated the transactions at unprecedented levels in order to improve their liquidity and reduce exposure to lenders' credit risk. AIG, a major player in securities lending through its life insurance subsidiaries, was caught up in this process. Although AIG's problems with its CDS portfolio often are regarded as the *sine qua non* of its liquidity crisis and federal intervention, it also was threatened by billions of dollars of collateral calls under its securities lending program associated with its domestic life insurance subsidiaries.[11]

AIG had $82 billion in liabilities for securities lending at year-end 2007, down from close to $100 billion at its peak earlier in the year. As noted above, it had $69 billion in

loans outstanding at the end of August 2008. Its U.S. securities lending program represented the bulk of the total, involving 12 life insurer subsidiaries, three regulated by the New York Insurance Department (NYID).

AIG primarily loaned government and high-quality corporate bonds, receiving cash collateral. According to the NYID, almost all of the U.S. collateral was invested in triple-A securities. About 60 percent of the U.S. collateral pool was invested in mortgage-backed securities.[12] As AIG noted in its 2008 SEC Form 10-K:

> The cash was invested by AIG in fixed income securities, primarily residential mortgage-backed securities (RMBS) to earn a spread. During September 2008, borrowers began in increasing numbers to request a return of their cash collateral. Because of the illiquidity in the market for RMBS, AIG was unable to sell the RMBS at acceptable prices and was forced to find alternative sources of cash to meet these requests.[13]

If available, AIG could have sold other, more liquid assets to meet security lending collateral demands — there is no required linkage between how collateral is invested and how collateral calls are met. It is therefore clear that, in part due to collateral demands associated with its CDS portfolio, AIG did not have available other liquid assets, such as cash or marketable securities.

Insurers have long been required to report information about securities lending in their statutory (regulatory) financial reports. On March 5, 2009, then-NYID Superintendent Eric Dinallo testified before the U.S. Senate Banking Committee that the department was engaged in discussions with AIG about its securities lending program as early as July 2006, "began working with the company to start winding down the program" in 2007, and ultimately negotiated a $5 billion guaranty from the holding company to offset losses of the life subsidiaries.[14]

AIG's securities lending program significantly increased its liabilities, leverage, and vulnerability to the housing/subprime mortgage crisis. The program contributed to solvency concerns for the holding company, as opposed to simply liquidity issues.[15] While noting that concern over AIG's securities lending program was justified, Superintendent Dinallo also testified that problems with AIGFP "caused the equivalent of a run on AIG" and that detailed analysis by the department "indicates that the AIG life insurance companies would not have been insolvent" without the federal rescue. That analysis is not publicly available.[16]

Following federal intervention, AIG had contributed $22.7 billion to its domestic life insurance subsidiaries through February 27, 2009, to offset reductions in the value of fixed maturity investments, "$18 billion of which was contributed using borrowings under the Fed Facility." It contributed $4.4 billion ($4 billion from the Fed Facility) to its foreign life subsidiaries through December 31, 2008, in response to liquidity needs and the decline in equity markets.[17]

Insurers have curtailed securities lending in response to the crisis. Insurance regulators expanded reporting requirements for securities lending, especially regarding collateral requirements, beginning with statutory financial reports filed for 2008.

AIG's Overall Investment Portfolio

Regardless of how it was financed, the fact that AIG's overall investment portfolio was significantly exposed to loss from reductions in the value of mortgage-related securities represents a third and related source of its trouble. AIG's consolidated investment portfolio predominantly consisted of fixed income securities, almost all of which were classified as "available for sale" under GAAP financial reporting. Table 1 shows the mix of AIG's fixed maturity available for sale portfolio at the end of 2007 and 2008. The fair value of its

The fact that AIG's investment portfolio was significantly exposed to loss from reductions in the value of mortgage-related securities was a significant source of its trouble.

Table 1
AIG Fixed Maturity Portfolio

(available for sale)

Category	2008		2007	
	Value $ millions	Percent	Value $ millions	Percent
All Bonds				
U.S. government	$4,705	1	$8,252	2
State and municipal	$62,257	17	$46,854	9
Non-U.S. government	$67,537	18	$70,200	14
Corporate Debt	$185,619	51	$241,519	48
Mortgage backed, asset backed and collateralized	$47,326	13	$134,500	27
Total	**$366,444**	**100**	**$501,325**	**100**
Mortgaged backed, asset backed and collateralized				
RMBS (except AIGFP)	$29,752	63	$84,780	63
CMBS (except AIGFP)	$11,226	24	$22,999	17
CDO/ABS (except AIGFP)	$6,131	13	$10,447	8
AIGFP	$217	0	$16,274	12
Total	**$47,326**	**100**	**$134,500**	**100**
RMBS (except AIGFP)				
U.S. agencies	$13,308	45	$14,825	17
Prime non-agency	$10,801	36	$21,074	25
Alt-A	$4,209	14	$23,746	28
Other housing related	$379	1	$3,946	5
Subprime	$1,055	4	$21,189	25
Total	**$29,752**	**100**	**$84,780**	**100**

Source: AIG 2008 SEC Form 10-K.

mortgaged-backed, asset-backed collateralized investments was $135 billion at year-end 2007, representing 27 percent of the total. Residential mortgage-backed securities were valued at $85 billion (63 percent of the $135 billion), with $45 billion of subprime and Alt-A instruments (53 percent of the $85 billion value of RMB securities).

AIG was likewise highly leveraged on a consolidated basis. At year-end 2007, its GAAP liabilities totaled $953 billion, 10 times its $96 billion in shareholder equity. Like other large insurance holding companies, AIG issued long-term debt at the holding company level, a strategy that can reduce an entity's overall cost of capital. AIG reported $163 billion in long-term debt at year-end 2007 (in addition to $82 billion of securities lending liabilities). The long-term debt was an obligation of the holding company and not the insurance subsidiaries. While subordinated to policyholder claims, AIG's long-term debt significantly increased the parent's vulnerability to reductions in the value of its invested assets.

AIG reported a net loss of $99 billion for 2008, including net realized capital losses of $55 billion, of which $51 billion reflected "other than temporary" impairment charges to the estimated fair value of fixed maturity investments, including $38 billion for its life insurance and retirement services segment. Severity-related impairment charges of $29 billion were "primarily related to mortgage-backed, asset-backed and collateralized securities and securities of financial institutions."[18] Unrealized market valuation losses on the AIGFP super senior CDS portfolio totaled another $29 billion.

The Federal Bailout

The details of ongoing federal assistance to AIG, which began on September 16, 2008, are complex. The key arrangements have been modified several times. The details of the transactions are spread among many sources and are sometimes opaque. Table 2 presents a summary of the broad details that I prepared from a variety of sources. While I believe that the details shown in Table 2 are reasonably accurate, I cannot testify to their exactitude, and the amounts shown should be viewed as approximate.[19]

According to information available to me and consistent with other summaries, the total amount of federal assistance authorized to AIG through June 30, 2009, was more than $182 billion. Of that total, approximately $123 billion had been advanced in loans (the amount of unpaid balances) and preferred stock investment. Authorized TARP assistance totaled $70 billion, of which $40 billion was used by the Treasury to purchase an issue of AIG preferred stock (with warrants) and to reduce the outstanding balance of the Federal Reserve Bank of New York (FRBNY)

credit facility. The remaining commitment of approximately $30 billion ($30 billion reduced by $165 million in response to AIG's payment of incentive compensation) has been largely untapped.

Table 3 shows major recipients of direct funding through TARP. Exclusive of the $30 billion untapped commitment, the $40 billion assistance to AIG represented 11 percent of the $374 billion total (14 percent of the $289 billion total excluding the $85 billion provided to the automobile industry). The two largest bank recipients, Citigroup and Bank of America, received $50 billion and $35 billion, respectively.

Much of the federal assistance to AIG has been used to close out contracts with counterparties for AIG's credit default swaps and securities lending. Table 4 lists the counterparties and amounts.[20] Almost $50 billion was paid to CDS counterparties ($22.5 billion from borrowing through the FRBNY credit facility and $27.1 billion from the special purpose vehicle Maiden Lane III). Another $44 billion went to AIG's securities lending counterparties. Thus, of the $123 billion total shown in Table 4, $93.3 billion went to AIG's CDS and securities lending counterparties. Most of this amount was paid to banking and investment banking organizations, including large amounts to foreign banks, especially E.U. institutions. Three recipients received more than $10 billion: Goldman Sachs, Societe Generale, and Deutsche Bank. Four others received at least $5 billion: Barclays, Merrill Lynch, Bank of America, and UBS. Merrill Lynch and Bank of America combined assistance totaled $12 billion.

Another $5 billion was used to capitalize Maiden Lane III, which was formed to wind down AIG's multi-sector CDO credit default swaps. State and municipal counterparties that had purchased Guaranteed Investment Agreements from AIG received $12.1 billion. Another $12.5 billion was used for "maturing debt & other." The specific recipients in that category were not disclosed. In any case, the lion's share of the assistance provided to AIG flowed directly to banking organizations.

Whether it was better for the government to rescue AIG or instead allow it to file for bankruptcy has been debated. That debate will likely continue for years. The government's rationale for intervention, after having allowed Lehman Brothers to fail, is that an

Table 2
Federal Assistance to AIG through June 30, 2009
(approximate, in billions of dollars)

Program	Announced	Net amount advanced	Net amount authorized	Details
Federal Reserve Bank of New York				
Revolving credit facility	September 2008	$18.5	$35.0	Original credit line $85 billion
Maiden Lane II	November 2008	$17.4	$22.5	Purchased $39.3 billion of RMBS to terminate AIG securities lending
Maiden Lane III	November 2008	$21.0	$30.0	Purchased $62.1 billion of AIGFP credit default swaps (notional amount)
Transfer of life subsidiaries	June 2009	$25.0	$25.0	Reduced credit facility debt; reduced $60 billion credit line to $35 billion (transaction pending)
U.S. Treasury Department (TARP)				
Preferred stock with warrants	November 2008	$40.0	$40.0	Reduced credit facility debt; reduced $85 billion credit line to $60 billion
Capital facility	March 2009	$1.2	$29.8	
Total		**$123.1**	**$182.3**	Remaining lines about $56 billion
Total				
Commercial Paper Funding Facility	Balance April 29	$13.0		
Total with Commercial Paper		**$136.1**		

Sources: Federal Reserve, Congressional Oversight Panel, AIG Financial, and press releases; author's interpretation.

Table 3
Major TARP Fund Recipients through July 16, 2009

Recipient	Amount
AIG*	$40 billion
Other predominately insurance entities Hartford Financial($3.4 billion) Lincoln National ($950 million)	$4.35 billion
Top 10 banking recipients Citigroup, Inc. ($50 billion) Bank of America Corporation ($35 billion) JPMorgan Chase & Co. ($25 billion) Wells Fargo & Company ($25 billion) The PNC Financial Services Group Inc. ($15.2 billion) Morgan Stanley ($10 billion) Goldman Sachs Group ($10 billion) Fifth Third Bancorp ($6.8 billion) U.S. Bancorp ($6.6 billion) Sun Trust Banks, Inc. ($6.2 billion)	$190 billion
Other banking recipients (582 entities)	$55 billion
Auto industry (including suppliers)	$85 billion
Total	$374 billion

*AIG also received a commitment for an additional $29,835,000,000, which has not been drawn as of July 16, 2009.

Source: U.S. Department of Treasury Office of Financial Stability Transactions Report for the Period Ending July 16, 2009.

AIG bankruptcy would have further roiled world financial markets, creating the risk of another Great Depression. Donald Kohn, vice chairman of the Federal Reserve Board of Governors, testified as follows before the U.S. Senate Banking Committee on March 5, 2009:

> Our judgment has been and continues to be that, in this time of severe market and economic stress, the failure of AIG would impose unnecessary and burdensome losses on many individuals, households and businesses, disrupt financial markets, and greatly increase fear and uncertainty about the viability of our financial institutions. Thus, such a failure would deepen and extend market disruptions and asset price declines, further constrict the flow of credit to households and businesses in the United States and many of our trading partners, and materially worsen the recession our economy is enduring.[21]

Accepting this rationale, which has been repeated by Federal Reserve Chairman Ben Bernanke and other high-ranking officials, the Federal Reserve and U.S. Treasury judged that it was better to undertake a *de facto* government takeover of AIG than risk the consequences. There can be little doubt that this judgment was affected by the desire to protect AIG's banking counterparties. The desire to protect banking counterparties with subsidiaries operating as primary dealers for U.S. Treasury securities, and thus to maintain a stable market for new issues and broad and liquid secondary markets for Treasury securities, might also have played a significant role.[22]

The intervention and subsequent payments to E.U. banking counterparties reduced their need to quickly raise new equity capital, which may have dampened the financial crisis in the E.U. Financial regulators in the E.U. had accepted and, in some sense, relied on regulation and oversight of AIG by the U.S. Office of Thrift Supervision (OTS) to meet the E.U. directive that financial institutions operating in the E.U. be subject to consolidated oversight at the group level. Any role that this played in the U.S. government's decision to intervene with AIG has not been disclosed.

Regulatory Oversight of AIG

AIG's CDS activities were not conducted by regulated insurance subsidiaries. Despite AIG's CDS problems, securities lending problems, exposure of other investments to mortgage defaults, and high leverage at the holding company level, it is not clear that any of its insurance subsidiaries would have become insolvent if the government had not intervened.

At year-end 2008, AIG reported $35 billion of surplus under statutory accounting principles for its general insurance segment and $25 billion for its life insurance and retirement services segment.[23] The latter amount reflects a change on October 1, 2008, in the permissible method under statu-

tory accounting for other than temporary impairments for bonds, loan-backed secutities, and structured securities that increased year-end statutory surplus for the domestic life and retirement services entities by $7 billion.[24]

A detailed analysis of whether any of AIG's regulated insurance subsidiaries would have become insolvent had the federal government not intervened and the parent company had instead sought bankruptcy would need to address several complex issues, including the potential ability of capital to be moved among subsidiaries if one or more subsidiaries were facing insolvency. If one or more of AIG's domestic life insurers would have confronted a negative capital position, it would not imply that the subsidiary would have been allowed to default on its obligations if adequate capital remained in other subsidiaries.

Vice Chairman Kohn testified on March 5, 2009, before the Senate Banking Committee that AIGFP

> . . . is an unregulated entity that exploited a gap in the supervisory framework for insurance companies and was able to take on substantial risk using the credit rating that AIG received as a consequence of its strong regulated insurance subsidiaries.[25]

The assertion that AIGFP was unregulated is technically incorrect and therefore misleading. As noted above, and as a consequence of owning a savings and loan subsidiary, AIG was subject to consolidated regulation and oversight by the OTS, and it was recognized as such for the purpose of meeting the 2005 E.U. regulatory criterion for group supervision.

At the same hearing, OTS Acting Director Scott Polakoff testified as follows:

Table 4
Payment to AIG Counterparties

Counterparty	CDS counterparties from credit facility through 12/31/2008	CDS counterparties from Maiden Lane III	Securities lendng counterparties through 12/31/2008	Total
Goldman Sachs	$2.5	$5.6	$4.8	$12.9
Societe Generale	$4.1	$6.9	$0.9	$11.9
Deutsche Bank	$2.6	$2.8	$6.4	$11.8
Barclays	$0.9	$0.6	$7.0	$8.5
Merrill Lynch	$1.8	$3.1	$1.9	$6.8
Bank of America	$0.2	$0.5	$4.5	$5.2
UBS	$0.8	$2.5	$1.7	$5.0
BNP Paribus			$4.9	$4.9
HSBC Bank	$0.2		$3.3	$3.5
Dresdner Bank AG		$0.4	$2.2	$2.6
Caylon	$1.1	$1.2		$2.3
Citigroup			$2.3	$2.3
Deutsche Z-G Bank	$0.7	$1.0		$1.7
ING			$1.5	$1.5
Wachovia	$0.7	$0.8		$1.5
Morgan Stanley	$0.2		$1.0	$1.2
Bank of Montreal	$0.2	$0.9		$1.1
Rabobank	$0.5	$0.3		$0.8
Royal Bank of Scotland	$0.2	$0.5		$0.7
KFW	$0.5			$0.5
AIG International			$0.5	$0.5
Credit Suisse			$0.4	$0.4
JPMorgan	$0.4			$0.4
Banco Santander	$0.3			$0.3
Citadel			$0.2	$0.2
Danske	$0.2			$0.2
Paloma Securities			$0.2	$0.2
Reconstruction Finance Corp	$0.2			$0.2
Landesbank B-W	$0.1			$0.1
Other	$4.1			$4.1
Total	**$22.5**	**$27.1**	**$43.7**	**$93.3**
Equity in Maiden Lane				$5.0
GIAs held by municipalities				$12.1
Maturing debt and other				$12.5
Grand Total				**$122.9**

Source: AIG Discloses Counterparties to CDS, GIA, and Securities Lending Transactions, March 15, 2009.

> OTS conducted continuous consolidated supervision of the group, including an on-site examination team at AIG headquarters in New York. Through frequent, on-going dialog with company management, OTS maintained a contemporaneous understanding of all material parts of the AIG group, including their domestic and cross-border operations.[26]

Polakoff then recounted numerous meetings with AIG's senior management and independent auditor. He indicated that in March 2006 the OTS provided AIG's board with written recommendations on risk management oversight and related issues, *including discussion of significant weaknesses at AIGFP*.

Federal banking regulators bear significant responsibility for not recognizing the risk of allowing regulated banks to buy large amounts of credit protection from AIG.

The OTS was also responsible for regulating Countrywide, Washington Mutual, and Indy Mac, large mortgage finance organizations that eventually failed and were merged with or acquired by other entities with FDIC assistance. The ineffectiveness of federal OTS regulation at preventing those failures or the AIG crisis does not indicate that the entities were unregulated, nor does it imply that state insurance regulation was to blame for AIG's breakdown.

If the financial crisis in general and the AIG crisis in particular are to be blamed on ineffective regulation, the blame should reflect the substantial evidence of fundamental failures in U.S. and foreign banking regulation, including in the U.S. by the OTS, the Office of the Comptroller of the Currency, the FDIC, the SEC, and the Federal Reserve. Banking regulation permitted and probably encouraged high leverage, aggressive investment strategies, inadequate capital requirements for risky loans and securitizations, and complex off-balance sheet vehicles, often financed by commercial paper, all taking place within the framework of government deposit insurance and "too big to fail" (TBTF) policy. In addition to reducing financial institutions' losses, higher effective capital requirements for risky loans would have discouraged excessive expansion of credit on easy terms and the associated overbuilding and rapid escalation of housing prices.[27]

Culpability of the OTS notwithstanding, AIG's major counterparties were regulated by U.S. and foreign banking regulators. Broad regulatory authority encompasses responsibility for monitoring an institution's relationships with counterparties that could allow it to take on excessive risk. If, hypothetically, a domestic or foreign reinsurance company were to expand to the point where its financial distress seriously weakened the financial condition of U.S. licensed insurers, state insurance regulation would almost certainly take the primary blame. Even apart from the OTS and possible reliance of regulators on AIG's top financial rating, federal banking regulators bear significant responsibility for not recognizing the risks of allowing regulated banking entities to (1) buy extensive amounts of credit protection from AIG, and (2) provide large amounts of securities lending collateral to AIG.

AIG's Post-Intervention Ability to Write Business

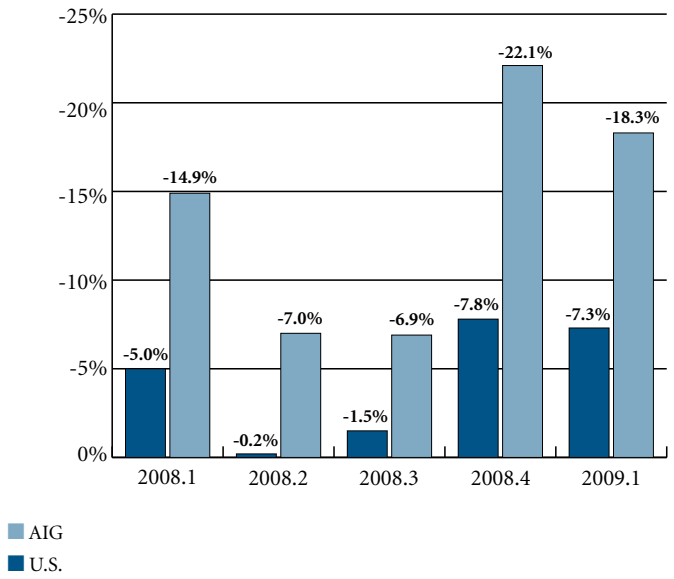
AIG's insurance subsidiaries have continued to write business following the federal intervention. The long-run effects of the intervention and the ability of AIG's insurance subsidiaries to prosper are not clear. A number of AIG's U.S. commercial property/casualty insurance competitors have alleged that AIG's domestic commercial insurers have priced some renewal business very aggressively in order to retain clients. A Government Accountability Office investigation of the allegations, which included discussions with regulators, underwriters, and brokers, failed to document the allegations.[28]

A detailed analysis of AIG's experience since the intervention might be informative about the extent to which federal backing may have helped AIG retain business for

both its property/casualty and life insurance operations. Figure 2 shows year-over-year percentage premium revenue growth for AIG's domestic commercial property/casualty business from the first quarter of 2008 through the first quarter of 2009.[29] It also shows nationwide commercial property/casualty insurance premium revenue growth (using data from A.M. Best). Nationwide premium revenues fell throughout the period due to price declines and reduced economic activity. AIG's declines were much greater during each quarter, especially during the quarter following the September 2008 intervention. The extent to which the more pronounced premium declines at AIG reflect loss of customers versus lower premium rates is not known.

Figure 2
U.S. and AIG Commercial Property/Casualty Insurance Premium Growth

Year-Over-Year Percentage Changes



Source: AIG financial reports and A.M. Best Company. Author's calculations.

Systemic Risk and the Crisis

There is no generally accepted definition of "systemic risk" or agreement on its importance and scope. The term generally is used to connote situations with extensive interdependencies or "interconnectedness" among firms, and an associated risk of contagion and significant economic spillovers.[30] A group of financial market executives and academics, for example, has defined systemic risk as "the risk of collapse of an entire system or entire market, exacerbated by links and interdependencies, where the failure of a single entity or cluster of entities can cause a cascading failure."[31]

The risk of common shocks to the economy, such as widespread reductions in housing prices or changes in interest rates or foreign exchange rates, which have the potential to directly harm large numbers of people and firms, is distinct from the economist's concept of systemic risk because it does not depend on interdependency-transmitted contagion. The full effects of such shocks might not be recognized immediately. Instead, evidence of the effects on a few firms may lead to reevaluation and information that other firms have also been directly affected (e.g., recognition of asset problems at one institution leads to recognition of similar problems at other institutions). The delayed response to the common shock might give the appearance of contagion.

The economics literature has identified at least four sources of systemic risk:

1. The risk of asset price contagion, where a shock causes one or more financial institutions to have to sell large amounts of assets at temporarily depressed prices (e.g., through "fire sales"), thereby further depressing prices and market values of institutions that hold similar assets;[32]

2. The risk of counterparty contagion, where shocks to some firms make them unable to honor commitments to counterparties, thereby causing some of the counterparties to likewise default on their commitments, with repercussions that cascade through financial markets;

3. The risk of contagion due to uncertainty and opacity of information, where the revelation of financial problems at some institutions creates uncertainty about the effects on counterparties and whether other institutions face similar problems, so that parties become reluctant to trade until further information becomes available; and

4. The risk of irrational contagion, where investors and/or customers withdraw funds without regard to whether specific institutions are at risk.

Depending on the circumstances, each source of systemic risk can be asserted to justify government intervention to reduce adverse effects on the overall economy, such as a sharp contraction in bank credit. Each source of risk also can be asserted to justify bailing out an individual firm to reduce adverse effects on other parties, as opposed to allowing the firm to file for bankruptcy. In contrast, the risk of common shocks would seldom justify selective intervention to save an individual company.

An AIG bankruptcy may or may not have had significant adverse effects on its counterparties. Goldman Sachs, for example, reported that its exposure to an AIG default was negligible.

A significant body of academic research has attempted to identify possible contagion in previous episodes of financial turmoil, and dozens if not hundreds of studies of contagion in the current crisis can be expected. A cursory review of prior research, which largely predates the growth of credit default swaps and complex securitizations, yields very little evidence of irrational contagion and little evidence of contagion related to counterparty risk, asset prices, or uncertainty/opacity. This includes studies of the early 1990s junk bond/real estate crisis in the life insurance sector (see below).[33]

The AIG crisis and general financial crisis were precipitated by the bursting of the housing price bubble and attendant increases in actual and expected mortgage defaults, which greatly reduced the values of mortgage-related securities as the new information was reflected in prices. While there apparently were some elements of counterparty contagion, asset price contagion, and uncertainty/opacity contagion, the principal problem was the decline in security values. AIG was heavily exposed to the subprime crisis and the bursting of the housing price bubble. Whether AIG's CDS portfolio and securities lending actually presented significant risk of contagion has been and will be debated. Critics of the bailout stress that providing selective assistance to individual firms is problematic, in part because it undermines incentives for safety and soundness in the long run. They argue that the slow and painful process of bankruptcy is generally preferable, especially for non-bank institutions.[34]

Relatively little is known about the extent to which an AIG bankruptcy would have had significant adverse effects beyond its counterparties or the extent to which its counterparties had hedged their bets with AIG or otherwise reduced their risk. CDS protection buyers have some ability to diversify across different sellers, and they are able to enter into offsetting trades. Goldman Sachs, for example, reported that its exposure to an AIG default was negligible.[35]

A failure to rescue AIG and funnel $123 billion to its counterparties (Table 4) would have weakened their financial condition, forcing them to sell more assets and reducing their ability to invest and make loans. Some of AIG's E.U. banking counterparties would have needed to raise more capital or significantly reduce their risk exposure. Although many more of AIG's insurance customers might have terminated or declined to renew their policies, by itself that would not represent systemic risk.

Systemic Risk in Insurance

Notwithstanding whether AIG's unique circumstances created systemic risk, the question arises as to whether insurance companies typically pose systemic risk.[36]

The general consensus is that systemic risk is relatively low in insurance markets compared with banking, especially for property/casualty insurance, in part because insurers hold greater amounts of capital in relation to their liabilities, reducing their vulnerability to shocks.[37]

To be sure, low probability events with large losses, such as severe hurricanes, can simultaneously damage many property/casualty insurers. The impact can be spread broadly among insurers through product line and geographic diversification and reinsurance, which creates contractual interdependence among insurers. Large insurance losses and asset shocks can temporarily disrupt property/casualty insurance markets, sometimes contributing to market "crises" with some adverse effect on real economic activity. Even so, there is little likelihood and no evidence of significant contagion associated with major events.

Systemic risk is larger for life insurers (e.g., due to a sharp fall in asset prices) given their higher leverage, especially when policyholders seek to withdraw funds following large negative shocks, thus causing some insurers to unload assets at temporarily depressed prices. However, although a few life insurers that had heavily invested in junk bonds or commercial real estate were subject to policyholder runs in the early 1990s, there is no evidence that financially strong insurers were affected.[38] Moreover, shocks to life insurers do not threaten the economy's payment system, as might be true for commercial banks.

More generally, and as I have emphasized in prior publications and congressional testimony, insurance markets are fundamentally different from banking. Sensible regulation, including government guarantees of banks' and insurers' obligations, should recognize the differences. Government guarantees protect consumers and help reduce systemic risk by deterring runs. As a by-product, they create moral hazard: they reduce market discipline for financial institutions to be safe and sound. We generally want parties to avoid dealing with undercapitalized financial institutions. Guarantees reduce the penalties for doing so. Thus, there is a basic policy tradeoff. Stronger guarantees reduce systemic risk but increase moral hazard. Given this tradeoff, greater systemic risk favors stronger government guarantees because of the greater potential for adverse effects on real economic activity. Greater systemic risk also favors tighter regulation in view of the additional moral hazard induced by stronger guarantees.

As noted above, bank depositor and creditor runs might threaten the economy's payment system. Banking crises have the potential to produce rapid and widespread harm to economic activity and employment. This systemic risk provides some rationale for relatively broad government guarantees of bank obligations and correspondingly stricter regulation, including stronger capital requirements. The need for stronger capital requirements in turn causes banks to seek ways of evading the requirements and to lobby for their relaxation. The first and second Basel accords on bank capital regulation reflect this pressure.

Because insurance, especially property/casualty and health insurance, poses much less systemic risk, there is less need for broad government guarantees to prevent potentially widespread runs that would destabilize the economy. Insurance guarantees have appropriately been narrower in scope than in banking, and market discipline is generally strong. Capital requirements have been much less binding — insurers commonly have held much more capital than required by regulation. Because insurance capital requirements are much less constraining, reducing incentives for regulatory arbitrage and other evasion, the need for accurate capital requirements has been less important. In the case of mortgage/bond insurance, the monoline structure and contingency reserves required by insurance regulation also have reduced potential systemic risk by preventing spillovers

Government guarantees protect consumers and help reduce systemic risk by deterring runs. As a by-product, they create moral hazard: they reduce market discipline for financial institutions to be safe and sound.

on other types of insurance and reducing leverage.

Proposed Regulation of "Systemically Significant" Insurers

The Treasury Proposal

On June 17, 2009, the U.S. Treasury released a white paper outlining proposals for financial regulatory reform.[39] The white paper attributes much of the blame for the financial crisis to the failure of large, highly leveraged, and interconnected financial firms, such as AIG. In contrast to the reform blueprint released a year earlier by the Bush administration, the Treasury's 2009 white paper does not propose optional federal chartering of insurance companies. However, the white paper does include several key proposals that would affect insurance:[40]

A U.S. Treasury proposal would give the Federal Reserve broad authority to regulate as a Tier 1 Financial Holding Company "any firm whose combination of size, leverage, and interconnectedness could pose a threat to financial stability if it failed."

- The Federal Reserve would have broad authority to regulate as a Tier 1 Financial Holding Company (FHC) "any firm whose combination of size, leverage, and interconnectedness could pose a threat to financial stability if it failed." The authority would not be limited to firms that own banks or even domestic financial firms. The Fed would have discretion to classify firms as Tier 1 FHCs, which, along with all of its subsidiaries, would be subject to its authority, regardless of whether those subsidiaries had a primary regulator.

- A new regime would be created for resolution, patterned after FDIC resolution procedures, of financially distressed bank holding companies and Tier 1 FHCs in the event that "a disorderly resolution would have serious adverse effects on the financial system or the economy." The Treasury would have final authority for using the regime with approval required by two-thirds of Federal Reserve board members and two-thirds of the FDIC board. The proposal emphasizes that normal bankruptcy would be expected to apply to most financially distressed non-bank entities.

- A Financial Services Oversight Council would be established to facilitate coordination and information sharing among regulatory agencies, study financial sector trends and regulatory issues, and advise the Federal Reserve on the identification and appropriate regulation of Tier 1 FHCs.

- An Office of National Insurance would be formed to monitor and analyze the insurance industry and help identify to the Federal Reserve firms that should be candidates for Tier 1 FHC status. It would carry out certain federal functions, such as administration of the Terrorism Risk and Insurance Act, and it would represent U.S. insurance interests internationally with authority to enter into international agreements.

The Treasury proposal also expresses support for six principles for insurance regulation, including (1) effective systemic risk regulation, (2) strong capital standards, (3) "meaningful and consistent" consumer protection, (4) increased national uniformity through either optional federal chartering or state action, (5) improved regulation of insurers and affiliates on a consolidated basis, and (6) international coordination.

Office of National Insurance Act of 2009

Following release of its white paper, the Treasury on July 22, 2009, proposed specific legislation, "Title V - Office of National Insurance Act of 2009," for creating the Office of National Insurance (ONI) to "monitor all aspects of the insurance industry."[41] As proposed in the white paper, the ONI would recommend to the Federal Reserve which insurers, due to systemic risk exposure, should be designated Tier 1 FHCs and regulated by the Federal Reserve.

The ONI would also collect and analyze

information on the insurance industry, with broad subpoena power to compel insurers to produce data in response to its requests. The Treasury would be authorized to negotiate and enter into "International Insurance Agreements on Prudential Measures" on behalf of the United States. The ONI would have broad authority to preempt any state regulations that were deemed inconsistent with such agreements.

The information collecting, international representation, and preemption features of the Treasury bill are broader but similar in concept to a bill introduced on May 22, 2009, by Representative Paul Kanjorski (D-Pa.), "The Insurance Information Act of 2009" (H.R. 2609). In contrast to the Treasury bill, H.R. 2609 does not deal with systemic risk authority. It would create an Office of Insurance Information (OII) to collect and analyze data on insurance to help Congress make decisions regarding insurance. The OII would "serve as a liaison between the Federal Government and the individual and several States regarding insurance matters of national importance and international importance." It would establish U.S. policy on international insurance issues. It could enter into agreements that "are substantially equivalent to regulation by the States of the comparable subject matter." It would preempt state law inconsistent with such agreements.

The Bean-Royce Optional Federal Charter Bill

Representatives Melissa Bean (D.-Ill.) and Edward Royce (R-Calif.) introduced "The National Insurance Consumer Protection Act" in April 2009 (H.R. 1880). The bill would create an optional federal chartering system for insurance (discussed further below). An Office of National Insurance (ONI) would be established within Treasury to regulate insurers that chose federal regulation, including the establishment of a national guaranty system for such insurers that would also be required to participate in state guaranty systems.

Section 201 of H.R. 1880 would require the President to designate a federal agency (but not ONI) to be a systemic risk regulator for systemically significant state and federally chartered insurers. The agency would have authority to participate in examinations of insurers with functional regulators and recommend actions to avoid adverse effects on the economy or financial conditions. It could also force an insurer to become federally chartered.

Section 202 would establish a Coordinating National Council for Financial Regulators to serve as a forum for financial regulators to collectively identify and consider financial regulatory issues, including the stability of financial markets. The council would promote the financial strength and competitiveness of U.S. financial services, develop early warning systems to detect weaknesses, recommend coordinated actions, and develop model supervisory policies for national and state regulators.

Arguments Against Creating a Systemic Risk Regulator

The large U.S. investment banks that survived the financial crisis have all become bank holding companies and are, therefore, already regulated by the Federal Reserve. There are strong arguments against creating a systemic risk regulator that would be able to designate insurers and other non-bank financial institutions as being subject to comprehensive regulation and oversight by the Federal Reserve or other agency.[42]

- Any institution designated as "systemically significant" would almost surely be regarded as too big to fail. This would reduce market discipline and aggravate moral hazard, making future financial problems more likely.

- Because of implicit, if not explicit, government guarantees of its obligations, any institution designated as systemically significant would have a lower cost of attracting capital than

Any institution designated as "systemically significant" would almost surely be regarded as too big to fail. This would reduce market discipline and aggravate moral hazard, making future financial problems more likely.

its non-systemically significant competitors.[43]

- Greater capital requirements and tighter regulation for institutions designated as systemically significant could reduce moral hazard and the potential competitive advantages conveyed by the systemically significant designation. But differential capital requirements and regulation would necessarily involve two risks. One possibility is that companies designated as systemically significant would face excessive burdens and costs. The other possibility, which seems more likely given the history of bank capital regulation and strong incentives for regulatory arbitrage, is that changes in capital requirements and regulation would not be sufficient to prevent an increase in moral hazard.

Once the systemic risk regulator has designated an institution as systemically significant, it would likely have an incentive to prop up the institution if it experienced problems, even if the particular problems had little potential for systemic consequences.

- Once the systemic risk regulator has designated an institution as systemically significant, it would likely have an incentive to prop up the institution if it experienced problems, even if the particular problems had little potential for systemic consequences.

- The threat of being designated as systemically significant and subject to regulation by a federal systemic risk regulator at a future date would create significant uncertainty for large, non-bank financial institutions that could distort their financial and operating decisions in undesirable ways.

A counter-argument is that the AIG meltdown and federal intervention make a *prima facie* case that some sort of federal regulatory authority is required for large and interconnected non-bank financial institutions. This assertion is not compelling for several related reasons:

- It does not adequately consider the potential benefits and costs of creating a systemic risk regulator.

- It does not consider the failures of federal regulation of large banking organizations that contributed to the financial crisis.

- It largely ignores the regulated insurance sector's comparatively modest role in the crisis.

- It provides no guidance for limits on the scope of discretionary federal authority to intervene in the financial sector in particular and the economy in general.

Moreover, given lessons from the current crisis and the earlier savings and loan crisis, it is hardly certain that a systemic risk regulator would be an effective means of limiting risk in a dynamic, global environment. Even without any increase in moral hazard, it could be ineffective in preventing a future crisis, especially once memories fade. The financial crisis underscores (1) the imperfect nature of federal regulation of banks and related institutions, (2) the necessity of renewed vigilance in banking oversight and capital requirements, and (3) the desirability of encouraging additional market discipline in banking.

The federal government was able to intervene in AIG and limit potential contagion without having had the authority to regulate AIG *ex ante*. The question arises: *What would the Federal Reserve have done differently if it had systemic risk authority before and during the crisis?*[44] The answer is hardly clear and has not been provided.

In short, creating a systemic risk regulator for insurers and other non-bank institutions designated as systemically significant would not be good policy. It would instead illustrate the adage that "bad policy begets bad policy."

The Crisis and Optional Federal Chartering

The possible creation of a system of optional federal chartering (OFC) for insurance companies has been debated for more than two decades.[45] The financial crisis and AIG bailout have changed the context of the debate, if not the key issues.

The OFC Debate Pre-Crisis

Prior to the events of 2008, pressure for OFC or other fundamental changes in state insurance regulation of property/casualty and life/annuity insurers focused on three main concerns:

1. Costs and delays associated with regulatory approval of policy forms in 55 different jurisdictions;

2. Costs, delays, and possible short-run suppression of rates below insurers' projected costs associated with prior regulatory approval of insurers' rate changes; and

3. Restrictions on insurers' underwriting (risk selection) decisions and risk classification.

The pricing and underwriting issues are primarily relevant for property/casualty insurers (and health insurance). Regulation of policy forms is the overriding issue for life/annuity insurers. Executives of many large life insurers support federal chartering for this reason and because a federal regulator might better represent their companies' interests before Congress. OFC also is supported by executives of many large property/casualty insurers. More generally, OFC is viewed by many as a potential mechanism to achieve desirable regulatory modernization with suitable deregulation, including improved ability to deal with multi-jurisdictional issues within the U.S. (such as appropriate policy regarding terrorism risk and insurance) and internationally (such as reinsurance regulation and the development and implementation of international insurance accounting and/or capital standards). In contrast to the early 1970s and early 1990s, when temporary increases in the frequency and severity of insurance company insolvencies motivated OFC proposals, pre-AIG pressure for OFC during this decade was not primarily motivated by solvency concerns.

The main characteristics of state solvency regulation — regulatory monitoring, controls on insurer risk taking, risk-based capital requirements, and limited guaranty fund protection — are sensible given the rationales for regulating solvency and for partially protecting consumers against the consequences of insurer default. As noted earlier, consistent with lower systemic risk, state guarantees of insolvent insurers' obligations are limited, which reduces moral hazard and helps preserve market discipline. Customers, especially business insurance buyers, and agents/brokers generally pay close attention to insolvency risk. *Ex post* funding of state guaranty association obligations by assessments against surviving insurers' obligations is appropriate. Insurers can respond effectively to such assessments without pre-funding. *Ex post* funding also provides incentives for financially strong insurers to press for effective regulatory oversight.[46]

However, as I and many other economists have emphasized for two decades, continued government interference with insurers' legitimate product and pricing decisions is inefficient and counterproductive.[47] Despite meaningful modernization initiatives by the states and the NAIC, the persistence of such policies leads to legitimate inquiry about whether federal intervention through OFC or some other mechanism is an appropriate means to eliminate such practices and further encourage any desirable increases in uniformity of regulation.

The main arguments against OFC of insurers are: (1) the states have done a reasonably good job on many dimensions, including solvency regulation; (2) the possible benefits

State guarantees of insolvent insurers' obligations to policyholders is limited, which reduces moral hazard and preserves market discipline. *Ex post* funding provides incentives for financially strong insurers to press for effective regulatory oversight.

The Treasury's proposed legislation for creating an Office of National Insurance could substantially override state solvency regulator prerogatives, while specifically exempting any preemption of state laws dealing with insurance rates, underwriting, coverage requirements, or sales practices.

from optional federal chartering are uncertain, and relatively little might be gained by creating an expensive, new federal bureaucracy; (3) OFC could create an unequal playing field between large multistate insurers and small insurers that are reasonably satisfied with state regulation and would face relatively high costs of switching charters; and, more broadly, (4) the potential risks and costs of OFC are large compared with the uncertain benefits.

The history of federal deposit insurance and TBTF policy suggests that, either initially or later on, OFC could expand government guarantees of insurers' obligations, thereby undermining market discipline and incentives for safety and soundness. Even if OFC were to reduce the scope of insurance price regulation initially, it could ultimately produce broader restrictions on pricing and underwriting at the federal level to achieve political or social goals. Broad, federal restrictions would increase cross-subsidies among policyholders, inefficiently distort policyholders' incentives to reduce the risk of loss, and increase risk to federal taxpayers if political pressure led to inadequate rates (e.g., for windstorm coverage in coastal areas). OFC also poses an inherent risk of adverse unexpected consequences, no matter how carefully and narrowly initial legislation was crafted.

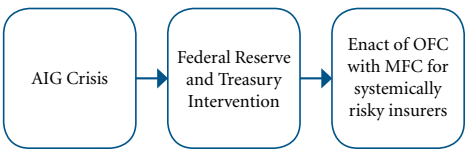
Two alternatives to OFC might have the potential for improving insurance regulation with less risk: (1) selective federal preemption of inefficient state regulations, such as prior approval rate regulation in competitive markets and inefficient impediments to nationwide approval of certain products, and (2) allowing insurers to choose a state for primary regulation with authorization to operate nationwide primarily under the rules of that state.[48]

The Treasury's proposed legislation for creating an Office of National Insurance with broad authority to enter into international agreements on prudential regulation and preempt state regulation does not fall within the first category. That proposal could substantially override state solvency regulator prerogatives, while specifically exempting any preemption of state laws or procedures dealing with insurance rates, underwriting, coverage requirements, or sales practices. The otherwise broad preemptive authority would represent a significant step toward federal chartering and regulation.

Do the Financial Crisis and AIG Intervention Justify OFC?

Creation of a systemic risk regulator notwithstanding, do the financial crisis and AIG bailout significantly strengthen the case for enacting some form of OFC of insurance companies? Some observers essentially assert that the AIG bailout seals the case for either OFC or OFC combined with mandatory federal chartering (MFC) for systemically significant insurers.[49] Enactment of the Treasury's proposal that the Federal Reserve regulate non-bank institutions it designates as systemically significant and the Bean-Royce OFC bill would achieve the latter result. The basic argument for such a regime seems to be that if the federal government might have to intervene in the event that a large and systemically significant financial institution with extensive insurance operations becomes financially distressed (e.g., as is alleged to have been essential for AIG), then it should have regulatory authority over such institutions *ex ante*, and smaller and/or less systemically significant competitors should have the option to choose federal regulation.

The chain of reasoning might be depicted as follows:

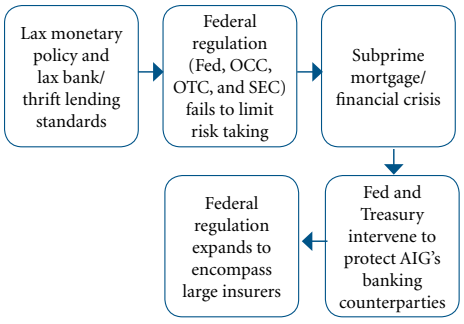


This chain of reasoning is unconvincing. First, the asserted necessity for MFC of insurers designated as systemically significant is subject to all of the arguments against a systemic risk regulator for non-bank insti-

tutions outlined in the previous section. Second, there have been no compelling arguments or evidence that the financial crisis has fundamentally altered the potential benefits and costs of OFC for insurers.

AIG's problems cannot be primarily attributed to any insurance regulatory failure. Given what we currently know, AIG likely would have been able to largely, if not completely, meet its obligations to policyholders without federal intervention, with state insurance guaranty funds serving as a potentially important backup if it could not. While there is still uncertainty, I know of no evidence that AIG's life subsidiaries' assets remain vulnerable to large write-downs and/or that its property/casualty subsidiaries are sitting on a mountain of liability claims that are not reflected in its reported liabilities (loss reserves).

The alternative scenario — where insolvency of AIG subsidiaries would require multi-billion dollar assessments under the state guaranty system — would substantially increase pressure for federal regulation. Even then, however, a strong case for federal insurance regulation in response to the crisis would have to explain why the following scenario would represent sensible policy:



That case has not been made, and the question arises: *In view of what happened at Citibank, Bank of America, and other bank and investment bank holding companies, how would federal regulation of AIG before the crisis specifically have prevented or mitigated its problems?*

There can be no presumption that federal regulation of AIG's insurance operations would have prevented or mitigated risk taking at AIG, or that OFC with or without mandatory federal chartering for large insurance organizations would mitigate any role of insurance in some future financial crisis. It's just as likely, or perhaps even more likely, that federal regulation of large insurers would have further increased risk in ways that would have posed a greater threat to policyholder claims.

Implications for Insurance Regulation

Lessons to be drawn from the financial crisis and AIG intervention do not include the need for a systemic risk regulator with authority over insurers and non-bank institutions that would be designated as systemically significant. The crisis and intervention also do not fundamentally strengthen arguments for either optional or mandatory federal regulation of insurance.

Creating some form of federal insurance information office to provide information, serve as a liaison on insurance issues with Congress, and represent the United States in international insurance regulatory forums would be sensible. The creation of a federal council to monitor domestic and international financial institutions and the economy for developments that could pose systemic risk and potentially lead to a future crisis could also be useful. Such an entity could be empowered to collect and analyze information about risk and disseminate it broadly and to advise regulators and the Treasury about activities that might pose systemic risk. The focus could be on identification of interconnected activities for which the dangers of contagion from a catastrophic event could outweigh the benefits those activities provide in the form of better diversification, scale and scope economies, and innovation. The entity would need to have broad expertise in financial institutions and markets, including insurance.

There can be no presumption that federal regulation of AIG's insurance operations would have prevented or mitigated risk taking at AIG, or would mitigate any role of insurance in some future financial crisis. The federal crisis and AIG intervention do not strengthen arguments for either optional or mandatory federal regulation.

Recent events do not justify broad authority for the FDIC or some other federal agency to selectively seize and resolve financially troubled insurers or other non-banking organizations.

The question of whether regulatory authority for resolving financially distressed, non-bank institutions should be expanded deserves much more study before being given serious consideration. Recent events do not justify broad authority for the FDIC or some other federal agency to selectively seize and resolve financially troubled insurance organizations or other non-banking organizations, thereby superseding bankruptcy law or state insurance liquidation procedures. I do not know whether the Federal Reserve and Treasury's judgment call on the AIG intervention was correct. Reasonable people can disagree about the specific probability and magnitude of potential harm to the economy that would justify such action, and on how great the risk was in the AIG case. But the threshold for such action should be truly extraordinary. Formal expansion of federal resolution authority to encompass non-bank financial institutions would make future interventions more likely and very likely be combined explicitly or implicitly with authority to regulate non-banks, at least those deemed systemically significant.

The general financial crisis and AIG intervention have implications on several other key dimensions that are relevant to this *Issue Analysis* and that should be considered by current regulators and when developing any new regulatory initiatives. They include: (1) market discipline and the TBTF problem, (2) banks and insurers' capital requirements, and (3) holding company–subsidiary relationships and possible segmentation of risky activities.

Market Discipline and TBTF Policy

Regulatory discipline or a lack thereof notwithstanding, a lack of market discipline represents one of the key underlying causes of the crisis, and the subsequent expansion of TBTF policy the biggest danger. In his remarks at the American Enterprise Institute on June 3, 2009, for example, Alan Greenspan opined:

> Of all the regulatory challenges that have emerged out of this crisis, I view the TBTF problem and the TBTF precedents, now fresh in everyone's mind, as the most threatening to market efficiency and our economic future.[50]

Commercial banks, investment banks, savings and loans, mortgage originators, subprime borrowers, and AIG obviously placed heavy bets on continued appreciation of housing prices. The losses have been huge and widespread. A simple explanation for much of the aggressive risk taking was that the potential gains and losses were asymmetric.[51] If housing prices continued upwards, or at least didn't fall, participants could achieve large profits. If housing prices stabilized, or even fell, the losses would be borne largely by other parties, including taxpayers. The extended period of historically low interest rates encouraged high leverage and fueled risky borrowing, lending, and investment.

Implicit guarantees of Fannie Mae and Freddie Mac debt lowered their financing costs, amplifying credit expansion. Commercial bank deposit insurance and implicit guarantees of bank obligations encouraged high leverage and risky mortgage lending and investment, especially given strong pressure from Congress and the Department of Housing and Urban Development for more subprime lending. The shift from partnerships to corporate ownership of investment banks encouraged them to take greater risk in relation to capital. The SEC agreement on consolidated supervision of the top investment banks may have allowed them to increase leverage as they took on more subprime-mortgage exposure. AIG facilitated investment in mortgage securitization by domestic and foreign banking organizations by selling low-cost protection against default risk. Subprime mortgage originators were often new entrants who loaned billions of dollars at very low initial interest rates, with

little or no money down, and with weak underwriting standards.

Given what we know about the causes of the housing bubble and ensuing financial crisis, a primary objective of legislative and regulatory responses should be to encourage market discipline as a means to promote prudence, safety, and soundness in banking, insurance, and other financial institutions. An overriding goal of any changes in financial regulation in response to the AIG anomaly should be to avoid extending explicit or implicit TBTF policies beyond banking. While it could well be difficult to significantly strengthen market discipline, ill-thought-out responses to the crisis could easily weaken it by expanding TBTF policy. The creation of a systemic risk regulator and expanded federal authority over financially distressed insurers and other non-bank institutions would very likely undermine market discipline and protect even more institutions, investors, and consumers from the downside of risky behavior.

Systemic risk aside, any debate over OFC of insurance companies should likewise recognize the fundamental importance of avoiding expanded government guarantees of insurers' obligations. This might be achieved in principle under OFC by requiring federally chartered insurers to participate in the state guaranty system and/or by designing federal guarantees along the lines of existing state guarantees. The design of any government guarantees also might be tailored in principle to help encourage additional market discipline. It should be recognized from the outset, however, that a monopoly federal guaranty program might ultimately ensue with optional federal regulation. That result could very easily undermine market discipline, requiring tougher capital requirements, which companies would fight, and which, if implemented, would produce some undesirable distortions in companies' decisions, and provide incentives for them to mitigate the effects of the requirements in innovative ways.

Capital Requirements

Financial regulatory reform proposals generally advocate or at least suggest that bank capital requirements be increased to limit risk taking. It has been suggested that relatively higher capital requirements be imposed on systemically significant organizations, with progressively increasing requirements as an entity's size and potential for systemic consequences grows. Another suggestion is to adopt rules that would require banks to accumulate additional capital in good years to serve as an additional buffer in bad years, thus reducing the severity of financial shocks and associated lending contractions.

Regardless of the merits and feasibility of such suggestions for banking organizations, the financial crisis does not imply the need for any fundamental changes in U.S. insurance company capital requirements. Insurance capital requirements should continue to recognize the distinctive nature of insurance markets**.** Given limited systemic risk and potential for contagion, government guarantees of insurers' obligations are appropriately narrower in scope than in banking, and market discipline is reasonably strong. Strong market discipline favors capital requirements that generally are easily met by the bulk of insurance companies, reducing potential undesirable distortions of sound companies' operating decisions and incentives for evading the requirements.

Pressure for and movement toward applying bank models of capital regulation to insurance, as illustrated by some proposals for federal insurance regulation and by the Solvency II initiative in the E.U., should be resisted. As the financial crisis would appear to highlight, those models reflect excessive optimism concerning the ability of seemingly sophisticated modeling and regulatory oversight to substitute for market discipline, and they pay too little attention to promoting market discipline. Any new regulatory initiatives regarding insurance in the United States should avoid this path.

Movement toward applying bank models of capital regulation to insurance, as illustrated by some proposals for federal insurance regulation and by the Solvency II initiative in the E.U., should be resisted.

Holding Companies and Risk Segmentation

While the details will likely change, large insurance holding companies with banking-related subsidiaries in the U.S. and/or abroad will remain subject to some form of federal regulatory authority at the holding company level. Regarding supervision of U.S. insurance subsidiaries, state regulators and the NAIC have an elaborate statutory and administrative framework designed to deter parent holding companies that experience financial difficulty from draining funds from their insurance subsidiaries. Detailed study is needed of how this system performed in the current crisis, the potential risks of securities lending and parent company debt finance, and whether any additional changes (beyond recent revisions in reporting requirements for securities lending) should be considered to strengthen oversight of parent-subsidiary relationships.

State regulators and the NAIC have an elaborate statutory and administrative framework designed to deter parent holding companies that experience financial difficulty from draining funds from their insurance subsidiaries.

More broadly, the financial crisis highlights the need for continued analysis and understanding of the benefits and costs of allowing entities to engage in diverse financial services under common ownership, and of the best ways to structure such organizations to achieve efficiencies from interconnectedness while limiting systemic risk. Former Federal Reserve Board Chairman Paul Volker and a number of other observers have suggested, for example, that the financial crisis requires re-examination of the possible advantages of separating commercial banks' core functions of deposit-taking and lending from other financial activities.

Even if a compelling case could be made for such separation to limit systemic risk and the ability of bank holding companies to leverage deposit insurance and TBTF policy, it is extraordinarily unlikely that the permitted integration of banking and other financial service activities under common ownership would be rolled back significantly. Nevertheless, the fundamental question remains concerning how to structure and oversee financial integration to best achieve efficiencies while limiting systemic risk and insulating operations of commercial banking and insurance subsidiaries from potentially harmful effects of integration.

The financial crisis and the general issue of the permissible scope of financial institutions' activities also brings attention to the possibility that in some instances a monoline structure, such as that used for mortgage/bond insurers may be advantageous to limit the spread of financial shocks.[52] In this regard, detailed study is desirable of mortgage/bond insurers' performance during the crisis, including the effectiveness of contingency reserve requirements in lessening their vulnerability to increases in mortgage defaults. Study is also needed to determine the extent to which such defaults adversely affected mortgage/bond insurers' ability to provide municipal bond guarantees and of the effects on entities that relied on those guarantees for rolling over their funding. Such study would help inform policymakers about strengths and weakness of the current structure of mortgage/bond insurers, and possibly shed light on whether the structure might be adopted for other risks with catastrophic exposure.

Conclusion

The AIG crisis and general financial crisis were precipitated by the bursting of the housing price bubble and attendant increases in actual and expected mortgage default rates. The predominant problem was the attendant decline in values of loans and mortgage-related securities. The AIG crisis was heavily influenced by credit default swaps written by AIG Financial Products, not by insurance products written by regulated insurance subsidiaries. AIG also ran into major problems with its life insurance subsidiaries' securities lending program. The holding company was highly leveraged, and its overall investment portfolio was significantly exposed to reductions in the value of mortgage-related securities.

If the financial crisis and AIG intervention are to be blamed on ineffective regulation,

the blame should reflect the substantial evidence of fundamental failures in U.S. and foreign regulation of commercial banking, thrift lending, and investment banking. Despite AIG's enormous exposure to increases in mortgage default rates, it is not clear that any of its insurance subsidiaries would have become insolvent if the government had not intervened. Most federal assistance to AIG has been paid to banking counterparties. There can be little doubt that federal intervention was influenced by the desire to protect those counterparties.

Whether AIG's CDS portfolio and securities lending presented significant risk of contagion has and will be debated. But the general consensus is that systemic risk is relatively low in insurance markets compared with banking, especially for property/casualty insurance, in part because insurers hold greater amounts of capital in relation to their liabilities, reducing their vulnerability to shocks. Creating a systemic risk regulator for insurers and other non-bank institutions designated as systemically significant would not be good policy. Any institution designated as systemically significant would be regarded as too big to fail, reducing market discipline and giving it an inappropriate competitive advantage. Nor do the AIG crisis and federal intervention fundamentally strengthen arguments for either optional or mandatory federal regulation of insurance.

The primary objectives of legislative and regulatory responses to the financial crisis should be to strengthen bank capital regulation and otherwise encourage market discipline in banking, insurance, and other financial institutions as a means to promote safety and soundness. An overriding goal of any regulatory changes in response to the AIG anomaly should be to avoid extending explicit or implicit too-big-to-fail policies beyond banking. The creation of a systemic risk regulator and expanded federal authority over financially distressed insurers and other nonbank institutions would very likely undermine market discipline and protect even more institutions, investors, and consumers from the downside of risky behavior. The debate over optional federal chartering of insurance companies should likewise recognize the fundamental importance of avoiding expanded government guarantees of insurers' obligations.

Endnotes

[1] See, for example, John B. Taylor, "The Financial Crisis and the Policy Responses: An Empirical Analysis of What Went Wrong," National Bureau of Economic Research Working Paper No. w14631, November 2008; Adrian Blundell-Wignall, Paul Atkinson, and Se Hoon Lee, "The Current Financial Crisis: Causes and Policy Issues," *OECD Financial Market Trends,* 2008; Markus Brunnermeier, "Deciphering the Liquidity and Credit Crunch 2007-08," Journal of Economic Perspectives, Vol. 23, No. 1(Winter 2009); Steven Schwarcz, "Systemic Risk," 97 *Georgetown Law Journal* 193, (2008); and Lawrence W. White, "How Did We Get into This Financial Mess?" Cato Institute Briefing Paper No. 110, November 18, 2008. Also see my summary, "Moral Hazard and the Meltdown," *The Wall Street Journal*, May 23, 2009.

[2] In a June 19, 2009, speech at the American Enterprise Institute, former Federal Reserve Chairman Alan Greenspan commented: "As partnerships, investment banks were an exceedingly cautious bunch. They rarely took speculative positions, as general partners were particularly sensitive to their personal unlimited liability. It is inconceivable that, as partnerships, investment banks would have taken the enormous risks that turned out so badly this decade."

[3] Compare Steven Labaton, "Agency's '04 Rule Let Banks Pile Up New Debt," *The New York Times,* October 3, 2008, and "Remarks at the National Economists Club: Securities Markets and Regulatory Reform," by Erik R. Sirri, Director, Division of Trading and Markets, U.S. Securities and Exchange Commission, Washington, D.C., April 9, 2009.

[4] See Rob Schimek, "AIG and AIG Commercial Insurance: Overview and Financial Update," presentation (http://www.aig.com/aigweb/internet/en/files/RSSPres111308b_tcm20-132858.pdf) [November 13, 2008]. Through December 19, 81 percent of A.M. Best Company's property/

The primary objectives of legislative and regulatory responses to the financial crisis should be to strengthen bank capital regulation and otherwise encourage market discipline in banking, insurance, and other financial institutions.

casualty rating actions in 2008 had affirmed prior ratings. Four percent were downgrades; 4 percent were upgrades. Miscellaneous categories accounted for the remainder. See Robert Hartwig, "Financial Crisis and the P/C Insurance Industry – Challenges and Opportunities amid the Economic Storm," presentation at the Latin American Association of Insurance Agencies Convention, (http://www.iii.org/assets/docs/ppt/090717LatinAmericanAgents.ppt) [July 2009].

[5] See Leslie Scism, "Long Derided, This Investment Now Looks Wise," *The Wall Street Journal*, June 22, 2009, D1.

[6] The NAIC website (www.naic.org) provides full details of insurers with state exceptions to statutory (regulatory) accounting rules.

[7] Testimony to the United States Senate Committee on Banking, Housing, and Urban Affairs, hearing on "American International Group: Examining What Went Wrong, Government Intervention, and Implications for Future Regulation," by Superintendent Eric Dinallo, New York Insurance Department, March 5, 2009.

[8] AIG SEC Form 10-K, 2008. Unless otherwise noted, AIG financial data are obtained from this source. Sometimes specific page references are provided.

[9] See, e.g., Agasha Mugasha, "The Secondary Market for Syndicated Loans: Loan Trading, Credit Derivatives, and Collateralized Debt Obligations," *Banking & Finance Law Review*, (February 2004).

[10] The 1988 Basel Accord or "Basel I" by the Basel Committee on Bank Supervision proposed international bank capital regulations based primarily on credit risk. In 1999 the committee proposed more elaborate requirements ("Basel II"), including reliance on companies' internal models for setting required capital under certain conditions.

[11] Dinallo testimony, March 5, 2009. Borrowers demanded the return of $24 billion in cash from September 12 through September 20 alone.

[12] Dinallo testimony, March 5, 2009.

[13] AIG 2008 SEC Form 10-K, p. 40.

[14] Dinallo testimony, March 5, 2009. On the other hand, prior to the federal intervention the NYID reportedly consented to a $20 billion loan from the insurance subsidiaries to the holding company, which was mooted when the Federal Reserve intervened. AIG's securities lending and regulatory response is discussed further in testimony by Pennsylvania Insurance Commissioner Joel Ario, "Testimony of the National Association of Insurance Commissioners Before the Subcommittee on Capital Markets, Insurance, and Government Sponsored Enterprises, Committee on Financial Services, United States House of Representatives, regarding: 'American International Group's Impact on the Global Economy: Before, During and After Federal Intervention,'" March 18, 2009.

[15] Robert Eisenbeis, "An Interesting Issue: AIG – Part One of Three," *Cumberland Advisors*, March 18, 2009.

[16] Ario testimony, March 18, 2009. Pennsylvania Insurance Commissioner Joel Ario testified strongly that AIG's CDS problems led to the run on its securities lending operation and that "AIG's insurance companies remain strong." AIG's property/casualty operations were subject to much less stress than its life insurance and retirement services and generally are regarded as reasonably strong. Its commercial property/casualty insurers had a risk-based capital ratio of 452 percent at the end of the third quarter 2008, well above the 200 percent regulatory criterion for company action to improve financial strength. See Rob Schimek, "AIG and AIG Commercial Insurance: Overview and Financial Update," November 13, 2008. Based on analysis of the statutory filings of AIG's domestic insurance subsidiaries, David J. Merkel argues that "some of the life and mortgage subsidiaries would have gone into insolvency, but the company as a whole would probably have survived." See his article, "To What Degree Were AIG's Operating Insurance Subsidiaries Sound?, "*Seeking Alpha* (http://seekingalpha.com/article/134260-to-what-degree-were-aig-s-operating-insurance-subsidiaries-sound-part-1) [April 28, 2009]. Also see Mary Williams Walsh, "After Rescue, New Weakness Seen at A.I.G.," *The New York Times*, July 31, 2009, (which mischaracterizes the role of intra-group reinsurance in the industry) and the reply letter to the *Times*' editors also dated July 31 by Kermitt Brooks, Acting New York Insurance Superintendent, and Joel Ario, Pennsylvania Insurance Commissioner, stating:

"We are convinced, based on a complete, broad and deep ongoing review of all current material information, that the claims-paying abilities of these companies [AIG's U.S. insurance subsidiaries] remains appropriate."

[17] AIG 2008 SEC Form 10-K, p. 50.

[18] AIG 2008 SEC Form 10-K, p. 167. The bulk of the $29.1 billion was for highly rated securities.

[19] Not included in the table is a plan announced on March 2, 2009, for AIG to repay $8.5 billion and reduce the credit line from proceeds of a planned life insurance securitization. I was unable to confirm that the repayment occurred.

[20] The data source, "AIG Discloses Counterparties to CDS, GIA and Securities Lending Transactions," (http://www.aig.com/HomePage_20_17084.html) March 15, 2009, rounds each recipient's amount to the nearest $100 million.

[21] Statement of Donald L. Kohn, Vice Chairman, Board of Governors of the Federal Reserve System, before the Committee on Banking, Housing, and Urban Affairs, U.S. Senate, March 5, 2009.

[22] Harvey Rosenblum, et al., "Fed Intervention: Managing Moral Hazard in Financial Crises," *Economic Letter – Insights from the Federal Reserve Bank of Dallas,* Vol. 3, No. 10 (October 2008); Robert Eisenbeis, "AIG – Part Three of Three," *Cumberland Advisors*, March 19, 2009.

[23] AIG 2008 10-K, p. 297.

[24] AIG 2008 10-K, p. 298.

[2] Kohn testimony, March 5, 2009. Federal Reserve Chairman Ben Bernanke also has referred to AIGFP as an unregulated entity. Also see Robert Eisenbeis, "AIG – Part Two of Three," *Cumberland Advisors*, March 18, 2009.

[26] Statement of Scott M. Polakoff, Acting Director, Office of Thrift Supervision, U.S. Department of Treasury, concerning Modernizing Bank Supervision and Regulation before the Committee on Banking, Housing and Urban Affairs, U.S. Senate, March 19, 2009.

[27] See, for example, Dwight Jaffee, "Credit Default Swaps, Systemic Risk, and Insurance Regulation," presentation to the ARIA-NAIC-Symposium, U.S. Insurance Regulation: What Have We Learned, Where Do We Go?, July 13, 2009, and Charles Calomiris, "Financial Innovation, Regulation and Reform," *The Cato Journal* 29, (Winter 2009). Also see Corine Hegland, "Why the Financial System Collapsed," *National Journal Magazine*, April 11, 2009.

[28] Orice M. Williams, "Federal Financial Assistance: Preliminary Observations on Assistance Provided to AIG," U.S. Government Accountability Office, GAO-09-490T, March 18, 2009. The Pennsylvania Department of Insurance subsequently announced that it was launching an investigation of AIG's pricing. A study by Karen Epermanis and me, "Market Discipline in Property/Casualty Insurance: Evidence from Premium Growth Surrounding Changes in Financial Strength Ratings," *Journal of Money, Credit and Banking* 38, (September 2006), documents significant premium declines for commercial property/casualty insurers that are downgraded, especially when the downgrade causes their financial rating to drop below A-.

[29] AIG's domestic property/casualty premiums for the second quarter of 2009 were 18 percent lower than the second quarter of 2008 (see AIG Financial Supplement, Second Quarter 2009). Comparable nationwide data are not yet available.

[30] Some academics therefore call gradual dissemination of the effects of a common shock "information contagion."

[31] Committee on Capital Markets Regulation, The Global Financial Crisis – A Plan for Regulatory Reform, May 2009, p. ES-3.

[32] While technically not contagion, a related problem is that shocks to some financial institutions will directly reduce the values of securities they have issued, thus reducing the net worth of other financial institutions that invested in those securities. For example, if an insurance holding company invests in bonds or notes issued by a bank holding company that later runs into financial difficulty, the associated decline in the value of the bonds and notes will reduce the insurance holding company's assets and net worth. Cross-purchases of securities among financial institutions are not uncommon.

[33] See generally Jean Helwege, "Financial Firm Bankruptcy and Systemic Risk," *Regulation: The Cato Review of Business and Government 32*, (Summer 2009), and George Kaufman and Kenneth Scott, "What is Systemic Risk, and Do Bank Regulators Retard or Contribute to It?" *The Independent Review 7*, (Winter 2003) for discussion and citations to general evidence.

[34] Robert Eisenbeis, "AIG – Part Three of Three," *Cumberland Advisors,* March 19, 2009; Testimony of Peter J. Wallison before the House Financial Services Committee, March 17, 2009.

[35] In this regard, Peter Wallison testified before the House Financial Services Committee on July 21, 2009, as follows: "If Goldman, AIG's largest counterparty, would not have suffered significant losses, there is no reason to believe that anyone else would have suffered systemically significant losses either."

[36] Following the bailout, AIG has argued that it is characterized by significant systemic risk, especially in life insurance. See AIG presentation dated March 6, 2009, "AIG: Is the Risk Systemic?"

[37] See, for example, my article, "Capital Adequacy in Insurance and Reinsurance," in *Capital Adequacy Beyond Basel: Banking, Securities, and Insurance*, Hal Scott, ed., (Oxford University Press, 2004), and Peter J. Wallison, "Statement before the Senate Banking Committee On Regulating and Resolving Institutions Considered 'Too Big to Fail,'" May 6, 2009. Joao Santos, "Bank Capital Regulation in Contemporary Banking Theory: A Review of the Literature," *BIS Working Paper No. 90, 1999,* explains why systemic risk is generally lower for all non-bank financial institutions than for banks. Rolf Nebel, "The Case for Liberal Reinsurance Regulation," Swiss Re, 2001, provides a useful discussion of why systemic risk is low for insurance.

[38] See, for example, George Fenn and Rebel Cole, "Announcements of Asset-Quality Problems and Contagion Effects in the Life Insurance Industry," *Journal of Financial Economics* 35,1994; Elijah Brewer and William Jackson, "Intra-Industry Contagion and the Competitive Effects of Financial Distress Announcements: Evidence from Commercial Banks and Insurance Companies," Federal Reserve Bank of Chicago Working Paper No. 2002-23; and my article, "Policyholder Runs, Life Insurance Company Failures, and Insurance Solvency Regulation," *Regulation: Cato Review of Business and Government 15*, (Spring 1992).

[39] See, "Financial Regulatory Reform – A New Foundation: Rebuilding Financial Supervision and Regulation," U.S. Department of the Treasury, June 18, 2009. For a detailed summary and commentary, see "Treasury Releases White Paper Proposing Significant Financial Services Reform," *Goodwin Proctor LLP Financial Services Alert,* Vol. 12, June 23, 2009.

[40] The Treasury also proposes a controversial new agency to regulate financial products, but not insurance products specifically.

[41] U.S. Treasury news release (http://www.ustreas.gov/press/releases/reports/title%20v%20ofc%20natl%20ins%207222009%20fnl.pdf).

[42] I made some of the arguments in my statement on "How Should the Federal Government Oversee Insurance?" before the Subcommittee on Capital Markets, Insurance, and Government Sponsored Enterprises, Committee on Financial Services, U.S. House of Representatives, May 14, 2009. Also see Peter J. Wallison, "Statement before the Senate Banking Committee On Regulating and Resolving Institutions Considered 'Too Big to Fail,'" May 6, 2009; statement of the Shadow Financial Regulatory Committee on Monitoring Systemic Risk, Statement No. 271, May 4, 2009; and Robert Eisenbeis, "AIG – Part Three of Three." Many observers have taken issue with proposals to make the Federal Reserve the systemic risk regulator in view of possible conflicts with monetary policy and an aversion to expanding the authority of an agency whose monetary policy and deficient regulatory oversight played a major role in causing the financial crisis. For example, see the statement of Alice Rivlin before the Committee on Financial Services, U. S. House of Representatives, July 21, 2009. Ms. Rivlin, a Brookings Institution senior fellow, Georgetown University professor, and first director of the Congressional Budget Office, testified: "As regulator of bank holding companies, [the Federal Reserve] did not distinguish itself in the run up to the current crisis (nor did other regulators). It missed the threat posed by the deterioration of mortgage lending standards and the growth of complex derivatives."

[43] Regarding moral hazard and lower capital costs, for example, R. Glenn Hubbard (Columbia Business School Dean and former chair of the Presi-

dent's Council of Economic Advisors under G.W. Bush), Hal Scott (Harvard Law School professor), and John Thornton (chairman of the Brookings Institution) wrote in "The Fed Can Lead on Financial Supervision, *The Wall Street Journal*, July 24, 2009, A13: "Identifying an institution as systemically important creates a moral hazard, since the market will view this designation as the equivalent of a bailout guarantee. A perceived bailout guarantee will decrease these institution's costs of raising capital."

[44] In the words of Robert Eisenbeis, chief economist for Cumberland Advisors, former banking professor, and member of the Shadow Financial Regulatory Committee, when discussing the implication that lack of systemic risk authority hindered federal response to the crisis: "What would the Fed have done differently had it been officially designated as systemic risk authority – both in advance of and during the crisis?" "AIG – Part Three of Three," March 19, 2009.

[45] The general debate over state versus federal insurance regulation goes back much longer. I've written extensively on these issues for nearly two decades. See especially "Federal Chartering of Insurance Companies: Options and Alternatives for Transforming Insurance Regulation," Networks Financial Institute Policy Brief, 2006-PB-02, (March 2006); "*Optional Federal Chartering of Property-Casualty Insurance Companies,*" Alliance of American Insurers, (2002); "An Historical Overview of Federal Involvement in Insurance Regulation," Peter J. Wallison, ed., Optional Federal Chartering of Insurance (Washington, D.C.: American Enterprise Institute, 2000); "Policyholder Runs, Life Insurance Company Failures, and Insurance Solvency Regulation," *Regulation: Cato Review of Business and Government* 15 (Spring 1992); and "Should the Feds Regulate Insurance?" *Regulation: Cato Review of Business and Government* 14 (Spring 1991).

[46] Some people advocate pre-funding of guarantees with risk-based premiums. It is unlikely, however, that meaningful risk-based premium variation would be achieved in practice. Pre-funding would sacrifice the advantages of *ex post* funding without achieving enough risk rating to significantly improve incentives.

[47] I elaborate in great detail in Insurance Deregulation and the Public Interest, (Washington, D.C.: AEI Press, January 2000).

[48] I briefly discussed these alternatives in "Federal Chartering of Insurance Companies: Options and Alternatives for Transforming Insurance Regulation," Networks Financial Institute Policy Brief, 2006-PB-02, (March 2006). Also see Henry Butler and Larry Ribstein, "The Single-License Solution," *Regulation: The Cato Review of Business and Government*, (Winter 2008-2009).

[49] See, for example, Robert E. Litan, "Regulating Insurance After The Crisis," The Initiative on Business and Public Policy at Brookings, March 4, 2009. Litan also argues that "spillovers" of monoline mortgage insurers on the municipal bond market were indicative of significant systemic risk.

[50] "Addressing Systemic Risk: Remarks by Alan Greenspan" (www.aei.org/speech/100052 [June 3, 2009]).

[51] I elaborated this point in "Moral Hazard and the Meltdown," *The Wall Street Journal*, May 23, 2009.

[52] See, for example, Dwight Jaffee, "Credit Default Swaps, Systemic Risk, and Insurance Regulation," presentation to the ARIA-NAIC-Symposium, U.S. Insurance Regulation: What Have We Learned, Where Do We Go?, July 13, 2009, and "The Application of Monoline Insurance Principles to the Reregulation of Investment Banks and GSEs," Haas School of Business, University of California, Berkeley, November 10, 2008.

Notes

NAMIC *Issue Analysis* Public Policy Papers *(continued from back cover)*

The Legal Theory of Disparate Impact Does Not Apply to the Regulation of Credit-Based Insurance Scoring
Robert Detlefsen, Ph.D.
July 2004

The Damaging Effect of Regulation of Insurance by the Courts
Peter A. Bisbecos and Victor E. Schwartz
August 2003

Regulation of Property/Casualty Insurance: The Road to Reform
April 2002

Market Conduct Regulation for a Competitive Environment
January 2001

Analysis of the Role, Function and Impact of Rating Organizations on Mutual Insurance Companies
September 2000

Accepting the Challenge: Redefining State Regulation Now
April 2000

Should the Community Reinvestment Act Apply to Insurance Companies?
August 1999

Focus on the Future: Options for the Mutual Insurance Company
January 1999

Founded in 1895, the National Association of Mutual Insurance Companies is the largest, most diverse national insurance trade association in the United States. NAMIC represents the interests of its property/casualty insurance company members and their policyholders. NAMIC's membership includes farm mutual insurance companies, single-state and regional writers, and national insurers operating across North America. The more than 1,400 NAMIC members underwrite 41 percent of the automobile and homeowners insurance market and 31 percent of the business insurance market in the United States.

NAMIC®
NATIONAL ASSOCIATION OF MUTUAL INSURANCE COMPANIES

Headquarters
3601 Vincennes Road
Indianapolis, IN 46268
(317) 875-5250

Washington Office
122 C Street, N.W.
Suite 540
Washington, D.C.
(202) 628-1558

www.namic.org

NAMIC *Issue Analysis* Public Policy Papers

Each year, the National Association of Mutual Insurance Companies (NAMIC) publishes an *Issue Analysis* paper that examines a significant public policy issue involving risk management and insurance. These monographs provide a forum for university-based insurance scholars and other independent experts to apply timely research and sophisticated analysis to important insurance-related problems and controversies.

Issue Analysis papers reach a wide audience that includes federal and state lawmakers and regulators, think tanks, trade associations, the media, and insurance professionals. Through its *Issue Analysis* publishing program, NAMIC seeks to elevate public discourse, inform the policymaking process, and improve the functioning of insurance markets for the mutual benefit of insurers, consumers, and taxpayers.

Previous *Issue Analysis* titles include:

First-Party Insurance Bad Faith Liability: Law, Theory, and Economic Consequences
Sharon Tennyson, Ph.D., and William J. Warfel, Ph.D., CPCU, CLU
September 2008

The Assault on the McCarran-Ferguson Act and the Politics of Insurance in the Post-Katrina Era
Lawrence S. Powell, Ph.D.
August 2007

Auto Insurance Reform Options: How to Change State Tort and No-Fault Laws to Reduce Premiums and Increase Consumer Choice
Peter Kinzler, J.D.
August 2006

It's Time to Admit that SOX Doesn't Fit: The Case Against Applying Sarbanes-Oxley Act Governance Standards to Non-Public Insurance Companies
Sophie M. Korczyk, Ph.D.
June 2005

Insuring the Uninsurable: Private Insurance Markets and Government Intervention in Cases of Extreme Risk
Sophie M. Korczyk, Ph.D.
March 2005

The Case for Underwriting Freedom: How Competitive Risk Analysis Promotes Fairness and Efficiency in Property/Casualty Markets
Robert Detlefsen, Ph.D.
September 2004

(continued inside)

To order any NAMIC Public Policy Paper, e-mail NAMIC Vice President of Public Policy Robert Detlefsen at *rdetlefsen@namic.org*, or call the NAMIC State and Policy Affairs Department at (317) 875-5250.

All NAMIC Public Policy Papers are available on *NAMIC Online* at *www.namic.org*.