



# **Considerations for Identifying Systemically Important Financial Institutions in Insurance**

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**A contribution to the Financial Stability Board and International Association  
of Insurance Supervisors' discussions**

**April 2011**

# The Geneva Association

## (The International Association for the Study of Insurance Economics)

The Geneva Association is the leading international insurance “think tank” for strategically important insurance and risk management issues.

The Geneva Association identifies fundamental trends and strategic issues where insurance plays a substantial role or which influence the insurance sector. Through the development of research programmes, regular publications and the organisation of international meetings, The Geneva Association serves as a catalyst for progress in the understanding of risk and insurance matters and acts as an information creator and disseminator. It is the leading voice of the largest insurance groups worldwide in the dialogue with international institutions. In parallel, it advances—in economic and cultural terms—the development and application of risk management and the understanding of uncertainty in the modern economy.

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# Considerations for Identifying Systemically Important Financial Institutions in Insurance

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**A contribution to the Financial Stability Board and International Association of Insurance Supervisors' discussions**

**Part I: A methodology to identify Systemically Important Financial Institutions (SIFIs) in insurance**

**Part II: An analysis of the AIG case—Understanding systemic risk and its relation to insurance**

Edited by Daniel Haefeli, Head Insurance and Finance, The Geneva Association  
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## Acknowledgements

This report is an extension of the major research project on the credit crisis and financial stability that The Geneva Association launched in February 2008 as part of its Insurance and Finance Research Programme. A special Working Group (WG), initially called Systemic Risk WG, later renamed to Financial Stability in Insurance WG (FSI-WG), was set up in December 2009 to analyse specifically the effects of systemic risk and financial stability on insurance and the potential for insurance to create systemic risk or financial instability in view of the regulatory debates surrounding this issue. The Working Group released a seminal report on *Systemic Risk in Insurance—An analysis of insurance and financial stability* on 26 February 2010 which since has become required reading for anybody interested in the relation of insurance and systemic risk.

After the publication of the report a number of follow-up questions and issues were identified and brought up to The Geneva Association by national and international regulatory, supervisory, policy-making and other special bodies concerned either specifically with insurance or the wider domain of financial services. The Geneva Association participated in several official hearings and organised joint information and discussion meetings to further develop the analysis and understanding of systemic risk in and for insurance. A series of prominent questions emanated from these activities that we felt would benefit from further investigation. These were dealt with in a report called *Key Financial Stability Issues in Insurance*, released in July 2010, and reflected The Geneva Association's ongoing dialogue on systemic risk and financial stability with regulators and policy-makers. It comprised analytical work carried out on specific issues such as investment management, liquidity management, limits of insurability, crisis resolution mechanisms in insurance and the confused concept of an "insurance run" (supposedly akin to a bank run).

The present report is based on the work of the Financial Stability in Insurance Working Group, comprising many specialised experts at member companies as well as The Geneva Association's own in-house intelligence on the subject, supported by Oliver Wyman, who first converted the various workstream outcomes into a slide deck and from there collaborated with us in creating the background paper that is at the base of this report. The second part of the report is the work of The Geneva Association's Research Director for Insurance and Finance, Prof. Dr Etti Baranoff. We would like to thank them all as well as the many other partners and helpful commentators who have contributed through their input to this document. In this respect we particularly appreciated the discussions with the IAIS, especially its Financial Stability Committee, and the Financial Stability Board (FSB), who regularly challenged ongoing discussions and advanced the debates through their questioning and continuous inquisition of open or unclear issues.

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## Foreword

As we publish this third report in our series on financial stability and insurance, the current pace of reforms addressing this issue worldwide has intensified. It is quite understandable and logical that the architects and guardians of global financial stability are trying to improve a system that has shown marked deficiencies in certain key areas—anything else would be grossly negligent behaviour. At the same time, it is very important:

- a. to specifically target the problematic elements of the arrangements that either directly lead to the crisis or that significantly worsened its consequences, and
- b. to avoid detrimental effects on activities that are functioning efficiently, that are no major risk factors and that do not aggravate the consequences of a crisis in a substantial way.

A shotgun approach to regulation has never been the optimal solution to any crisis. The direct and indirect negative effects for economic performance and future growth can turn out to be substantial if they are not based on a deep understanding of the foundations of the crisis. As always, a balanced and informed approach is required. The Geneva Association has outlined in earlier reports and communications with the Finance Ministers of the G-20 governments, other leading policy-makers and chief regulators and supervisors some areas that ought to be addressed by the authorities with respect to the insurance industry. It is important to note that the insurance sector has a strong interest in securing an effective and efficient financial system. As the holders of sizeable assets, either on their own behalf or for their policy-holders, it suffers directly when markets become unstable and decline.

The Geneva Association's efforts in the field of financial stability continues with this report which addresses two fundamental areas that are currently occupying policy-makers' and regulators' agenda: in Part I the document proposes "A methodology to identify Systemically Important Financial Institutions (SIFIs) in insurance", and in Part II it carries out "An analysis of the AIG collapse: [with an aim to] understanding systemic risk and its relation to insurance".

The two prior reports on systemic risk and financial stability in insurance produced by The Geneva Association in 2010 laid the foundation to better understand the role that insurance plays for financial stability and how in turn, financial stability affects insurance operations. The key takeaways from those two reports were that core insurance activities cannot cause systemic risk. Only quasi-banking activities and non-core insurance activities have the potential to cause systemic events that could under adverse conditions threaten the stability of the financial systems.

The methodology presented in Part I of this report is a logical further development of the earlier work carried out by The Geneva Association, which used as a reference the FSB's criteria for systemic risk and its IAIS extension. It was inspired by the need to develop a comprehensive approach to identifying potentially systemically risky activities and the entities that carry them out. Answering a call from the IAIS with respect to their work for the FSB, the report presents a comprehensive methodology for identifying possible systemically important financial institutions (SIFIs) and suggesting indicators that allow an objective and effective test for SIFI status. It is

important to note that the methodology proposed in this report is a) fully consistent with the FSB and IAIS criteria for systemic risk, b) comprehensive in its approach and targeted in its mechanisms, while c) being readily implementable.

To better understand the systemic risk issues and their relationship to insurance, The Geneva Association also provides the second part of this report. The discussions about systemic risk and insurance have always centred on the AIG near demise. The AIG story<sup>1</sup> has become a misguided and ill-informed example for supposed systemic risk in insurance. The findings of the report published here show that AIG's averted demise by the bailout is a story of a non-insurance collapse. Since AIG Holding Company was near collapse and received governmental assistance reaching US\$182 billion, the case became an interesting one in showing how the AIG insurance operations under the current regulatory structure in the U.S. was not part of any systemic risk. As noted in *The Financial Crisis Inquiry Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States*:

*“The AIG corporate empire held more than \$1 trillion in assets, but most of the liquid assets, including cash, were held by regulated insurance subsidiaries whose regulators did not allow the cash to flow freely up to the holding company, much less out to troubled subsidiaries such as AIG Financial Products [AIGFP].”*

The AIG case is not an insurance debacle story. It is a story of a financial products corporation, AIGFP (that operated under the AIG Holding Company) that took advantage of many gaps in the regulatory umbrella. AIGFP sold credit default swaps (CDSs)—a non-insurance product that is not permitted for distribution by the insurance regulatory bodies in the U.S. The report on AIG is a step-by-step discovery of the key problems in external/macro factors permitting internal factors that can cause significant interruptions in the market. Most illuminated findings are the non-insurance elements that were at the heart of the massive risks at AIG Holding Company.

We hope that the following chapters will leave readers better informed not only about the AIG case and potential methodological thinking when addressing systemic risk issues, but on some key financial stability issues as they relate to the insurance sector.

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*Secretary General and Managing Director,*  
*The Geneva Association*

*Daniel Haefeli*  
*Head Insurance and Finance,*  
*The Geneva Association*

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<sup>1</sup> The term AIG refers to the total scope of consolidation of AIG Holding Company and does not mean specific legal entities, but otherwise stated.



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**Part I:**

**A methodology to identify  
Systemically Important  
Financial Institutions (SIFIs)  
in insurance**



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## Executive summary

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In responding to the task set by the G-20 and the Financial Stability Board (FSB) to develop a methodology to identify Systemically Important Financial Institutions (SIFIs) in insurance, the International Association of Insurance Supervisors (IAIS) needs to develop a suitable methodology with instruments that are appropriate for measuring systemic risk specifically in the insurance industry.

The Geneva Association, together with the other insurance organisations, recommends an activity-based approach in two steps; first, identify activities which could be potentially systemically risky and second, apply specific indicators tailored to the systemically risky activities to identify potential global Systemically Important Financial Institutions (SIFIs).

The Geneva Association report, *Systemic Risk in Insurance—An analysis of insurance and financial stability*<sup>2</sup>—which has been widely endorsed—found that core insurance activities are not a threat to the stability of the financial and economic system. There are, however, two potentially systemically risky activities that some insurers may engage in, and that require further assessment if conducted in large scale and under inadequate risk oversight: derivatives speculation/financial guarantees; and mis-managing short-term funding. In responding to the IAIS’ consultation, The Geneva Association defined a set of indicators for the identification of SIFIs that perform either or both of these potentially systemically risky activities.

In order to have an efficient surveillance of the system, of the identification process of systemic risk, an appropriate supervision set-up is required. The IAIS should lead the coordination of macro-prudential surveillance in insurance with national insurance supervisors assisting through micro-prudential supervision.

Applying a flawed methodology has several negative consequences:

- it risks *missing* companies that are carrying out systemically risky activities,
- it risks *including* companies that are *not* carrying out systemically risky activities,
- it will squander regulatory resources,
- it could have detrimental consequences not only for the insurer but for the whole insurance industry, policy-holders and the wider economy.

The Geneva Association has a high interest in contributing to the IAIS work on systemic risk and financial stability and is ready to support global efforts for creating and maintaining financial stability in global markets.

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<sup>2</sup> *Systemic Risk in Insurance—An analysis of insurance and financial stability, Special Report of The Geneva Association Systemic Risk Working Group, The Geneva Association, Geneva, March 2010.*

## 1. Introduction

The FSB recommendations<sup>3</sup> have defined systematically SIFIs as “*financial institutions whose disorderly failure, because of their size, complexity and systemic interconnectedness, would cause significant disruption to the financial system and economic activity*”. On this basis, the FSB has started the process of defining the methodology to identify potential SIFIs, and has tasked the IAIS to support this work specifically in the insurance sector.<sup>4</sup> The IAIS has since initiated industry consultation by proposing a potential methodology and a set of indicators to assess the systemic importance of insurers.

It is important to assess each industry sector according to its very specific characteristics and circumstances. The business models of insurers are completely different from the business models of banks. Therefore, insurers have to be treated on their own merits in the systemic risk discussion, and different methods and indicators will apply. The purpose of this paper is to recommend an industry-tailored approach for the analysis of potentially systemically risky activities and identification of potential SIFIs for the insurance industry.

In the view of The Geneva Association, to allow for an appropriate framework and efficient allocation of regulatory and supervisory resources, any proposed approach should be as focused as possible on the potential sources for systemic risks rather than covering financial institutions in an indiscriminate way. Consequently, an effective set-up will first look to identify potentially risky activities and then identify the institutions performing these activities.

Independently the FED proposed the same approach when discussing the Lehman case “*Patrick Parkinson, Deputy Director of the Federal Reserve Board’s Division of Research and Statistics [as he] described a ‘game plan’ on how to assess the necessity to rescue Lehman Brothers in August 2008 with* (1) **identify activities** of Lehman that could significantly harm financial markets and the economy if it filed for chapter 11-bankruptcy protection, (2) *gather information to more accurately assess the potential effects of its failure, and* (3) *identify risk mitigation actions for areas of serious potential harm.*”<sup>5</sup>

The Geneva Association has been a major contributor to the systemic risk discussion in insurance with two dedicated reports (*Systemic Risk in Insurance—An analysis of insurance and financial stability* and *Key Financial Stability in Insurance*), several articles and papers and many presentations to various stakeholders within and outside the insurance industry.<sup>6</sup> It has a continued high interest in contributing to the regulatory work on systemic risk and financial stability.

3 See, for instance, the FSB report *Reducing the moral hazard posed by systemically important financial institutions* ([http://www.financialstabilityboard.org/publications/r\\_101111a.pdf](http://www.financialstabilityboard.org/publications/r_101111a.pdf)).

4 In this document the term insurance is generally used to describe insurance and reinsurance unless otherwise stated.

5 As per *The Financial Crisis Inquiry Report* (National Commission on the Causes of the Financial and Economic Crisis in the United States, 2011).

6 These materials can be downloaded from [www.genevaassociation.org](http://www.genevaassociation.org)

## **2. Business models of insurers and banks differ**

To date, the supervisory community has focused the work on SIFI identification mainly on banks as they had the highest profile during the crisis. Also, significant work had previously been done to understand systemic risk in the banking sector, motivated mainly by its central role in past major crises of the financial system. However, since insurance activities have never been at the root of a global financial crisis, there is a shortage of analysis of systemic risk and insurance. Since insurers and banks have different roles in the economy with differing business models, insurers need to be treated according to their business model.

Insurers' main functions are to provide protection by accepting risks from policy-holders, pooling these risks and managing them actively. Due to their role and the long-term horizon of many insurance contracts, insurers have large amounts of investments under their management to back future claims payments, and are therefore significant players, amongst other financial institutions, in asset management and capital accumulation.

The insurance business model—encompassing both insurers and reinsurers—has specific features that differ from banks and that make it a source of stability in the financial system.

First, insurance is funded by up-front premiums, giving insurers strong operating cash-flow without requiring wholesale funding. Insurance policies are generally long-term, with controlled outflows, enabling insurers to act as stabilisers to the financial system. Thereby, insurance activities have an “inverted cycle of production” and are self-funding through premium inflow, with long-term sources of capital, leading to a positive liquidity cycle. Insurers aim to match the duration of assets and liabilities and consequently hold longer-term assets against longer-term liabilities, and they do not leverage their asset base by incurring short-term liabilities.

Banks, in contrast, are involved in maturity transformation of short-term liquid liabilities into longer-term assets. Banks take deposits from customers and other financial institutions, and they issue debt securities to fund their business. This money is used to provide long-term funds to corporates and households. This is a vitally important function for the economy, which delivers important benefits, but is inherently risky as it typically leads to a negative liquidity cycle and potential liquidity risk.

Second, the risks of insurance companies and banks differ fundamentally. Insurance risk is idiosyncratic and, for the most part, independent of the economic cycle. Furthermore, large insurers are typically well diversified both geographically and across lines of business. In contrast, bank-specific risks tend to be highly correlated with the economic cycle. By accepting deposits and granting loans, banks assume two major risks that do not diversify well in times of crisis: credit risk related to lending activities and liquidity risk due to the mismatch arising from borrowing short and lending long.

Third, asset-liability management is a core activity for insurance companies. Insurers hold large amounts of assets that they match against their liabilities. Insurers' investment functions therefore differ from third-party asset managers (e.g. banks), which are managing against a market benchmark (whether an asset-class index or a cash index). Insurer's highly regulated balance sheets serve to limit the proportion of assets at risk. The asset bases of insurers mostly comprise highly marketable securities.

Lastly, even in the event of failure of a sizeable insurance institution, the impact on the broader economy is quite different to that of a bank. There is no direct connection between the insurer and the payment system which insurers access as users, but not as organisers. The wind-up of an insurer extends over a longer period of time, often years, and is most likely an orderly process as briefly described below:

- Claims are settled in the normal course of business. Since insurers are required to hold reserves against incurred claims, whether reported by policy-holders or not, an accelerated wind-up process is avoided.
- Supervisors' early intervention allows the insurer's management to work with the appropriate regulator to affect a transfer of business to other market participants in the best interest of policy-holders.
- Even during run-off, as historic evidence shows,<sup>7</sup> there are low lapse rates in life insurance and the liabilities continue to be served following their original long-term maturities. Since lapses are usually connected to significant penalties for policy-holders, lapse rates across the life portfolio of liabilities during insurer wind-ups are much less influenced by clients changing preferences and cannot be compared to bank runs. Hence there is no immediate increase in the need for liquidity. It has also to be noted that the run-off of closed life portfolios can be a sound business for some insurers as the ongoing trade in such portfolios shows.
- Insurance company failures extend over many years, often long before formal wind-up proceedings are started, since liabilities mature over an extended period of time. The long maturity of liabilities allows for the recovery of market values of tied assets (see below for definition) which cannot be accessed by creditors other than the policy-holders and under a predefined set of circumstances only.
- From a systemic perspective it is important to note the unique portfolio structure of insurers. Insurers lack two-way trading portfolios as they mostly have just one set of liability holders (their policy-holders) and just one set of assets (their investments). Accordingly, netting, collateral and counterparty risk spirals do not represent major risks in the case of insurer wind-ups.
- Insurers, in a going-concern mode, generate positive cash flow from their operations and as such are not exposed to the need for fire-sales.

Bank wind-ups and insolvencies are not comparable as they are driven by different business models with different unfolding mechanisms and consequences. In particular, the failure of a bank and the consequent closure of the wholesale funding markets could trigger the collapse of the banking system very quickly.

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<sup>7</sup> Cf. among others The Geneva Association, 2010a.

### 3. FSB and IAIS definition of systemic risk

The Geneva Association agrees on the usefulness of the widely used FSB/IMF criteria for identifying the sources of potential systemic risk: size, interconnectedness and substitutability, which the FSB set out and through which the relevance of particular institutions to systemic risk can be assessed.<sup>8</sup>

The IAIS proposed adding ‘timing’ to these criteria, reflecting the critical role that timing (speed) plays in whether an event transmitted into the financial system can be absorbed by the system. The Geneva Association fully agrees with this addition, and notes its particular importance to insurance.

#### Exhibit 1: Definition of systemic risk

Definition of Systemic Risk (FSB)	Criteria for identification of systemically relevant institutions
<ul style="list-style-type: none"><li>▪ “The risk of disruption to the flow of financial services that is (i) caused by an impairment of all or parts of the financial system; and (ii) has the potential to have serious negative consequences for the real economy”</li><li>▪ Fundamental to this definition is the notion that systemic risk is associated with negative externalities and/or market failure and that a financial institution’s failure or malfunction may impair the operation of the financial system and/or the real economy</li></ul>	<ul style="list-style-type: none"><li>▪ <b>Size:</b> “The volume of financial services provided by the individual component of the financial system”</li><li>▪ <b>Interconnectedness:</b> “Linkages with other components of the system”</li><li>▪ <b>Substitutability:</b> “The extent to which other components of the system can provide the same services in the event of a failure”</li><li>▪ <b>Timing:</b> Allow for the fact that systemic insurance risk does not typically generate immediate shock effects, but plays out over a longer time horizon</li></ul>

Source: FSB, IAIS

It is important to note that the impact of these criteria on systemic risk can be very different for different activities. The criteria should not be applied to institutions as a whole but on the individual activities these institutions conduct, otherwise there is a risk that benign activities and those with true potential for systemic risk end up confounded under the same indicator.

- **Size:** Critical is the size of the potentially systemically risky activity.
- **Interconnectedness:** Critical is the linkage of the potentially systemically risky activity within the financial sector.

<sup>8</sup> The FSB’s definition of systemic risk, however, is not uncontroversial and has several shortcomings as explained in [Liedtke \(2010\)](#).

- **Substitutability:** Critical is the substitutability of the institutions within the potentially systemically risky activity.
- **Timing:** For insurance markets (and resolution of insurers) timing is a very relevant criterion due to the non-immediate nature of almost all potential shocks to insurers and the resolution process.

Applying the criteria to specific activities and not indiscriminately to the institutions as a whole has three main advantages for the financial system and for the regulatory bodies as listed below:

- consistent focus on activities will help to target the actual source of systemic risk;
- regulators will be able to deploy their resources in a more efficient and effective manner; and
- regulatory arbitrage across different types of institutions can be prevented as the true systemic riskiness of the activities is considered.



## 4. Proposed approach

This section introduces the approach of The Geneva Association, supported by the insurance industry, to clarify the interface between macro and micro regulation in order to identify potentially systemically risky activities, and in a second phase to identify potential SIFIs conducting these activities<sup>9</sup> (illustrated in the following exhibit).

The first phase should be conducted by macro-supervisory bodies in their role of monitoring markets and products. The second phase should be conducted by national supervisors and group supervisors where in place in their supervisory function.

### Exhibit 2: Proposed two-phase approach

Phase 1	Phase 2
<ul style="list-style-type: none"> <li>▪ Identify potentially systemically risky activities and the relevant markets</li> <li>▪ Apply the FSB/IAIS criteria to assess all insurance activities                             <ul style="list-style-type: none"> <li>– Apply criteria size, interconnectedness, substitutability and timing</li> <li>– Use of qualitative and quantitative indicators</li> <li>– Consideration of external market conditions</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Identify institutions that engage in potentially systemically risky activities to such massive scale that their failure or disruption could fracture the system</li> <li>▪ Apply FSB/IAIS criteria to assess the institutions                             <ul style="list-style-type: none"> <li>– Apply criteria size, interconnectedness, substitutability and time (per activity)</li> <li>– Use of qualitative and quantitative indicators</li> <li>– Consideration of aggravating and mitigating factors</li> </ul> </li> </ul>
Supervisory platform	
<ul style="list-style-type: none"> <li>▪ Requirement of an appropriate supervisory architecture for                             <ul style="list-style-type: none"> <li>– Identification process</li> <li>– Supervision of identified SIFIs</li> </ul> </li> </ul>	

An appropriate supervisory architecture is required for running the two phases. The process requires insight into individual institutions' circumstances and needs to give a strong role to group supervisors.

<sup>9</sup> Patrick Parkinson, Deputy Director of the Federal Reserve Board's Division of Research and Statistics described a 'game plan' on how to assess the living will and the necessity to rescue Lehman Brothers in August 2008 with (1) identify activities of Lehman that could significantly harm financial markets and the economy if it filed for chapter 11 bankruptcy protection, (2) gather information to more accurately assess the potential effects of its failure, and (3) identify risk mitigation actions for areas of serious potential harm ([National Commission on the Causes of the Financial and Economic Crisis in the United States](#), 2011).

The following sections provide further details on the two phases. The regulatory framework is covered in Section 5.

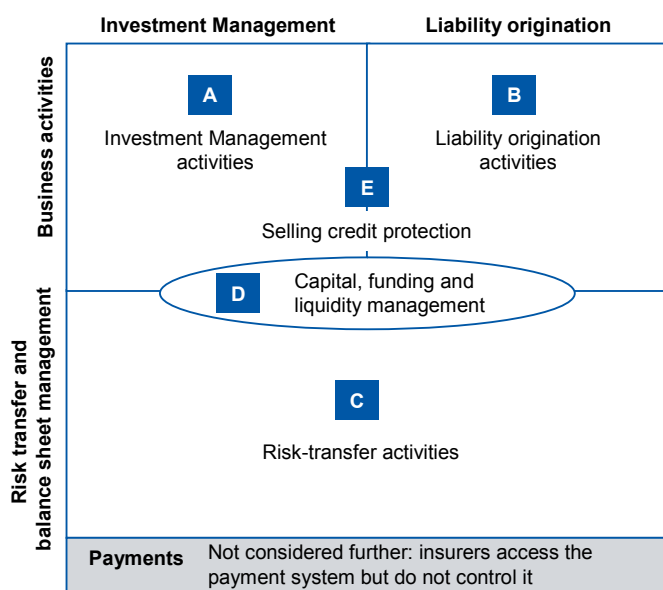
#### 4.1. Phase 1: Identify potentially systemically risky activities

As explained in Section 3, the FSB/IAIS criteria need to be applied to risk activities rather than to institutions (insurers and reinsurers) as a whole.

In Phase 1 of the proposed approach, potentially systemically risky activities are identified. The IAIS, in its role as a macro-prudential institution, would be expected to play this role. All activities which are conducted by insurers are reviewed using the FSB/IAIS criteria of size, interconnectedness, substitutability and timing. If the four criteria are all met, the activity must be classified as potentially systemically risky.

It is important to look at each activity separately in the context of the existing market conditions. Therefore, a different set of indicators needs to be defined for measuring the potential systemic risk of each activity and market. This set of indicators needs to be developed in a way that they indicate when there is a shock in an activity-specific trigger. In particular, the definition of thresholds for quantitative indicators has to take place in the light of existing market conditions.

#### Exhibit 3: Universe of insurance activities



- A** Investing policyholders' and shareholders' investments, as cash or through derivatives
- ALM and Strategic Asset Allocation
  - Derivatives activities on non insurance balance sheets

- B** Traditional insurance business of originating liabilities by providing protection/guarantees
- Underwriting catastrophe risks
  - Underwriting long term risks
  - Writing business with redemption options
  - Writing life business with embedded guarantees

- C** Transferring insurance and market risks to third parties
- Hedging with derivatives
  - Reinsurance and retrocession
  - Insurance linked securities and derivatives

- D** Capital raising, short-term and long-term funding, liquidity management for investment management and liability origination operations
- Treasury related-activities
  - Long-term capital raising

- E** Selling credit protection
- Credit insurance
  - Financial Guarantees
  - CDS writing

In addition to the quantitative indicators, relevant qualitative indicators should be defined. Aggravating and mitigating factors can influence the systemic riskiness of a particular activity. Market specifics, insurance specifics, economic conditions and regulatory treatment of the activity should be taken into account.

The March 2010 report *Systemic Risk in Insurance* by The Geneva Association completed Phase 1 by analysing all relevant activities of insurers for their potential systemic riskiness. The main findings are presented below while more detailed information can be obtained from the original report.

As illustrated in Exhibit 3, insurance companies can engage in many interrelated activities. On the basis of these activity categories, the report derives a list of specific activities that are interconnected to other parts of the financial system and which therefore needed to be assessed for their potential to create systemic risk.

Some of the activities, like liability origination, investment management, capital, funding and liquidity management, reinsurance and other risk-transfer activities, within the universe are “core” insurance activities that almost all insurance companies engage in. However, some activities are not carried out by all insurers; while yet others, are marginal at most for almost all insurers. They can be considered “non-core” activities.

The report concludes that none of the core insurance activities give rise to systemic risk since none of these activities fulfil all four criteria set by the FSB and IAIS. However, two activities outside the core insurance business have been identified to pose potentially systemic risk, namely derivative speculation/financial guarantees and mis-managing short-term funding activity if conducted in large scale and under inappropriate risk oversight. These two activities are discussed in further detail below.

#### **4.1.1. Derivative speculation/financial guarantees**

The first activity that the March 2010 report has identified as potentially systemically risky (and recently validated in a revisiting of activities carried out by insurers)<sup>10</sup> is derivative speculation/financial guarantees.

It is important to separate the speculative activity from any regular hedging activity using derivatives to hedge market risk and address volatility in asset values. The use of derivatives by regulated insurance entities is tightly restricted in all major jurisdictions. In these jurisdictions derivatives may be used only to reduce an insurer’s risk profile or for efficient portfolio management particularly where derivative markets are more liquid than the markets for equivalent cash assets.

However, insurers can still undertake derivative transactions other than for hedging. The important factor is that this activity is restricted to non-insurance balance sheets and often conducted in jurisdictions without an effective group supervision regime. Such speculation activity that is done for profit-generating purposes and executed on a large scale and without appropriate internal risk management or regulatory oversight has the potential to quickly transmit significant losses beyond the entity concerned and into the wider financial sector. It should be considered potentially systemically relevant as the margin calls on these derivatives can quickly exceed liquid financial resources of very large trading books during extreme market conditions. These positions are not necessarily captured in insurers’ internal economic capital assessments nor is there sufficient supervisory oversight.

This activity encompasses also financial guarantees by monoliners for the credit enhancement of bond issuers. Although financial guarantees are small in terms of premiums, they cover

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<sup>10</sup> Through The Geneva Association’s Financial Stability in Insurance Working Group regular discussions are organised about potential systemic risk issues for the industry.

USD 2.3 trillion of financial assets.<sup>11</sup> They are thereby highly connected to the real economy and to the major banks that have large exposures to the monoliners.

The business models of monoliners are different from other insurers' by their highly concentrated and undiversified portfolios, high leverage ratios, and extreme dependence on their own credit rating. These features mean that the downgrade of monoliners could have a systemic impact, forcing investors to reduce their exposures or commit (suddenly) more capital to holding lower-rate assets. The mark-to-market valuation of these securities means that losses would be transmitted almost instantaneously.

#### **4.1.2. Mis-managing short-term funding**

The second activity that is potentially systemically risky is mis-managing short-term funding.

Some insurers utilise their high credit rating and borrowing capacity to raise short-term funds using, for instance, commercial paper, and invest these proceeds in assets offering a higher return, allowing them to earn the spread as a profit.

Insurers might also lend securities from their large investment portfolios to short sellers, and reinvest the collateral. When the liquidity risk is controlled, the residual risks from this line of business are small, allowing insurers to generate a superior yield for their policy-holders and shareholders.

It is important to note that given an insurer's long-liquidity position, such activities can be reasonable and value-adding. If well monitored, they should not be ruled out as they provide liquidity to the markets, and in the end better return for the companies and their clients. It is only in the case where these activities are conducted on a massive scale, under inadequate liquidity management using significant leverage, and the collateral is mis-managed, that it is possible for the insurer's maximum liquid financial resources to be insufficient in a liquidity crisis.

These activities—short-term funding with commercial paper and securities lending—are both reasonable activities that an insurer may carry out to improve the returns they generate for policy-holders and shareholders. If mis-managed, both activities contribute to the same risk: namely that the insurer has obtained cash with a very short maturity, invests the proceeds in assets that are less liquid, and then finds this source of funding drying up. Forced asset sales in adverse market conditions can then drive down asset values, exacerbating losses.

It is difficult to conceive how an insurer could mis-manage its insurance balance sheet to create a liquidity risk of sufficient size to be a material threat to the broader financial system. Nevertheless, one cannot demonstrate with absolute certainty that this could never be the case under any circumstances. In extreme circumstances short-term funding with commercial paper and securities lending on a massive scale with mis-managed collateral can prove to be systemically risky.

## **4.2. Phase 2: Identify potential SIFIs**

A potential SIFI is an institution that performs a sizeable amount of activities which pose systemic risk. Having identified the activities that pose systemic risk in Phase 1, the national supervisors—or group supervisors when applicable—should then apply their supervisory authority to identify SIFIs in a second phase. The role of any individual insurer in the market for the activity is analysed using the FSB/IAIS criteria, with indicators specific to the activities.

A set of appropriate qualitative and quantitative indicators for the identified activities needs to be defined on an institutional level. The potential SIFIs that conduct the identified potentially

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<sup>11</sup> Swiss Re (2006).

systemically risky activities have to be identified on the basis of the defined indicators. This analysis needs to be conducted at the aggregate group level.

While some indicators may be very precise and appealing from a conceptual point of view, it is important that they can be measured with sufficient certainty and practicality. Therefore, the availability of data needs to be taken into account (e.g., public sources, data available through local supervisors, company specific data) when defining the indicators.

It is very important to define indicators specific to the activity in question. As an example, using an insurer's size or its global reach as a SIFI indicator would be inappropriate and would send the wrong message on reputation to the stakeholders, since diversification in a large insurance portfolio is a source of strength for an insurer and not a weakness.

According to the proposed two-phase methodology, specific indicators need to be defined for the two previously identified activities that potentially pose systemic risk. The Geneva Association is proposing a set of applicable and relevant indicators, which can be further refined in collaboration with group supervisors and industry.

### **4.3. Aggravating and mitigating factors**

Relevant factors aggravating and mitigating an institution risk should be taken into account as part of the systemic risk identification process including fundamental elements such as market conditions. Furthermore, mitigating factors, such as the internal risk management of an institution or the scope of supervision (such as comprehensive group supervision) are critical factors that should also be considered. Regulatory treatment should be an integral part of the assessment. If appropriate mitigation factors on the institutional level are in place then an institution with a significant exposure in the market of a potentially systemically risky activity should not be classified as SIFI.

In cases where the institution has appropriate internal risk controls, receives sufficient and liquid collateral or acts under appropriate supervisory oversight, the systemic risk of the activity that the institution conducts can be significantly reduced—even below a level where it would give rise to concerns about systemic relevance.

## **5. Supervisory surveillance**

The existing regulatory regimes in major jurisdictions already address the activities that have been identified as potentially systemically relevant. However, a more appropriate international supervisory architecture is necessary for an efficient and effective surveillance of the financial system that will contribute to the identification process of systemic risk.

The IAIS should lead macro-prudential surveillance, co-ordinate among supervisors and issue standards as to criteria and indicators. The industry through The Geneva Association reaffirms its March 2010 study and offers to provide proactive and industry-specific input to the IAIS (and the FSB) on an ongoing basis.

Existing regulatory bodies from the insurance sector will need to collect the necessary data and to perform the assessment of the activities and the institutions. It is imperative that this exercise be conducted within the insurance sector supervisory framework.

The IAIS should then collect the results of the identification process and make the results available to the FSB (or a dedicated specialised body). Any list of insurance SIFIs must be the result of analysis by those with insurance expertise including the relevant supervisors in the discussions. Also, the mitigating potential of future supervisory regimes such as the forthcoming Solvency II, the Swiss Solvency Test and the U.S. risk-based approach should be taken into account as appropriate. To that end, the industry and The Geneva Association extend their collective offer to help and set up a special industry advisory council if the IAIS deems such a body as helpful.

## 6. Resolution mechanisms in insurance

The well-established resolution process for insurance has one major objective: policy-holder protection while at the same time providing a legal framework for any insurance company, regardless of size and business line, to be effectively wound up including liquidation absent the infusion of public funds, if necessary.

The three most important determinants of a wind-up of insurers are: the business model, the time frame and the regulatory framework. All three contribute to the mitigation of any potential systemic impact from an insurer insolvency event.

The few high-profile insurance failures (HIH, Confederation Life, Executive Life) did not manifest disruption to markets and the wider economy triggering a systemic crisis. Since the recent financial crisis, the example of AIG is often mentioned in this context. However, AIG was not an insurance failure, it was bailed out because of its excessive non-core activities in speculative derivatives markets. But even in the case of AIG, the viability of the insurance entities proved to be resilient with no policy-holder experiencing any harm or loss.<sup>12</sup>

In contrast to the banking sector insurers do not generate a need for immediate large infusions of cash. This is predicated on the low policy-holder lapse rates even in times of crisis and the long-term nature of their insurance liabilities. In insurance, both going-concern supervision and insolvency regimes provide priority protection of policy-holders. In the case of a crisis, no accelerated wind-down process is required and reserves and their assets further stabilise the actual wind-down process.

Supervisors can rapidly marshal and secure a troubled insurer's assets and can intervene long before the solvency position of a company becomes critical. Measures like isolating stable insurance entities and keeping them in a going concern mode, while problematic ones can be sold or put in run-off, are strong elements of avoiding immediate contagious development throughout the finance industry.

Asset and liability management enables continuous claims settlement. Insurers hold reserves—properly covered by assets—against incurred claims, future benefits, and associated costs. The characteristics of these liabilities are reflected in the assets as far as liquidity, currency and duration are concerned. This avoids a sudden and disorderly wind-up process which is typically triggered by an immediate need for liquidity.

In some regimes, reserves are required to be set at prudent levels to allow for outcomes beyond the current best estimate plus a risk margin. In all cases there is also a requirement to hold additional funds to cover adverse deviations. To be unable to meet claims, an insurer would

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<sup>12</sup> For a more thorough discussion of the AIG case, see the second part of this report, "An analysis of the AIG case: understanding systemic risk and its relation to insurance", by E. Baranoff.

have to lose first the additional capital plus the reserves developed through the actuarial reserving process.

Since orderly wind-ups of insurers usually take some years, market instability is avoided. The long maturity of liabilities also allows for the recovery of market values of tied assets (e.g. following a liquidity crisis, a temporary upsurge of volatility or a similar situation where market values of assets might be depressed for a short period of time) and gives policy-holders priority to other creditors.

Insurance regulation generally provides for increasing supervisory engagement according to changes in the adequacy of capital. This allows the insurer's management to work with the appropriate regulator and ensures the best course of action to protect the policy-holders and to affect a transfer of business to other market participants, if necessary.

In most jurisdictions special support mechanisms exist in the form of policy-holders protection funds, i.e. institutions that step in should an insurance insolvency occur with wider impacts. They then provide further absorption capital for failing institutions.



## 7. Reputation risk and market impact

Banks with SIFI-status may be perceived as benefiting from an implicit “governmental guarantee”, which basically signals their debt-holders that taxpayer money will be used to rescue them in the event of a failure. According to the current discussions, this is not foreseen in the case of insurers. Further, banks are tied-in to the central banks and can use these institutions as “lenders of last resort”, insurers do not enjoy such access.

Focusing on institutions and applying a “flawed methodology” for identifying potential insurance SIFIs has several negative consequences:

- it risks *missing* companies that are carrying out systemically risky activities;
- it risks *including* companies that are *not* carrying out systemically risky activities;
- it will squander regulatory resources;
- it could have detrimental consequences not only for the insurer but for the whole insurance industry, policy-holders and the wider economy.

Not spotting an institution that carries out systemically risky activities means failing in the task set out by the G-20 to make financial markets more resilient and to deal with the problems raised by SIFIs. Most proposals—including the most recent one discussed between the IAIS and the FSB—fail in this respect as their primary focus on institutional indicators such as size renders them vulnerable to missing the build-up of problems at mid-size players who could quickly amass a level of risky activities that could have the potential to create a systemic crisis but would not be spotted in time as their institutional size would not cross the threshold to trigger the institutional indicator.<sup>13</sup>

Falsely placing an insurer on a list of global SIFIs, or incorrectly identifying an activity as potentially systemically risky, could have severe, costly and broad consequences for insurers and the economy. In the following we describe some of the many adverse consequences of inappropriate conclusions in the SIFI identification.

For example, if derivatives for hedging purpose are not distinguished from those for generating speculative profits, insurers may receive a false reputation as if they were engaged in massive risky transactions and may need to reduce such tools for efficiently managing financial risks.

Targeting large insurers as potential SIFIs, just because of their size, may distort the public understanding of the insurance industry. The fundamental principle of insurance is a law of large number: insurers reduce relative risk of loss by insuring a large number of independent units. In the banking industry, the contrary of risk concentration is more likely to happen due to correlation with macro-economic developments. Thus a SIFI denomination based on size is intuitively against

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<sup>13</sup> In the case of banking, the collapse of Lehman Brothers or Northern Rock would be such examples. It is not expected that an institutional indicator would accord to either institution a global SIFI status, nevertheless, their sudden demise almost triggered systemic collapse that could only be thwarted by fast and comprehensive government intervention.

the basic insurance concept of the law of large numbers and diversification benefits. Further, a denomination based on size would reduce the industry's capacity to underwrite large risks as only sizable institutions can guarantee well-balanced diversification.

For insurers, assets should be seen as resources to support liabilities, corresponding to durations and timing of settlements. Focusing on the size of the insurers may give an incentive for smaller companies to engage in potentially systemically risky activities, and penalise the reputation of large and prudent companies. Global reach and its attendant diversification contribute to the sector's ability to insure and reinsure large risks such as the 2004 U.S. hurricanes (Wilma, Rita and Katrina).

Without recognising the "timing" criteria properly, insurers may no longer act as stabiliser of the financial system. Insurers play an important role as long-term institutional investors and deserve the recognition as stabilisers of the financial system.

If insurers' investments in bank debt and equity shares are seen as giving rise to risky inter-connectedness, it may create the fallacy that insurers expose the banking systems to systemic risks, rather than the converse. In consequence, insurers may be driven to sell off such assets immediately, responding to the change in regulation and the reputational risks that would go with it. These in turn would deprive insurers of one diversifying element for their investments as well as reduce the available capital base from which banking activities can be funded.<sup>14</sup> The SIFI regulations are meant to prevent systemic events and increase the resilience of the financial system, but in this case risk producing the opposite effect.

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<sup>14</sup> Many insurers invest their assets using an equity index as a benchmark for diversification purposes. A limitation of investments in banks would artificially restrict this diversification concept, hence reducing available capital for banks.

## **8. Next steps for supervisors and the insurance industry**

In the coming months, the regulatory bodies are expected to finalise the methodology, identify potential activities with systemic risk, and agree on a set of appropriate indicators to measure systemic riskiness at an institutional level.

Once the approach with the respective indicators is agreed on, the regulatory bodies need to discuss with the insurance industry and define the data collection effort. Depending on the methodology and selected indicators the requisite data should be available from public sources or, where this is not possible, through the appropriate group supervisors. The interface between macro and micro prudential regulation will need to be well defined to avoid duplicative efforts and market confusion.

In the whole process it is important to assess very carefully the potential consequences of identifying an institution as a SIFI, for the institution in question, for policy-holders, for the insurance industry and for the wider economy. It is therefore important to set the thresholds for the indicators only after careful analysis of the effects G-SIFI denominations would produce and following industry consultation and extensive market-impact testing.

In order to combine and align the efforts of the regulatory bodies and the industry an Advisory Council with experts from the industry and academia could be established. This Advisory Council would track any new market development in the insurance industry. In this way, new and emerging sources of potential systemic risk would be identified early in their lifecycle.

## Appendix

### 1. Proposed indicators

The Geneva Association has developed a set of quantitative and qualitative indicators for the two potentially systemically risky activities detailed in Section 4. These indicators are subject to review and refinement.

#### 1.1 Indicators for the activity “Derivatives speculation / financial guarantees”

##### Quantitative indicators

<b>Size</b>	Market value of net written (OTC) derivatives plus add-on for stressed market environment (offset for collateral and direct counterparty trades)
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This indicator intends to measure the absolute size of the institution’s potentially systemically risky activity. It should only include derivative speculation performed in non-regulated entities and not derivative transaction performed for hedging purposes.

Regular derivatives hedging is not a systemically risky activity as it reduces risk:

- insurers enter into derivatives activities to hedge market risks and address volatility;
- positions captured in insurers’ economic capital assessment and supervisory oversight;
- companies post-collateral and positions captured in liquidity assessment.

Furthermore, the indicator only considers the market value of short positions (issued derivatives) as long positions do not lead to claims from other institutions in the system and can therefore not transmit failure.

Absolute size is used for this indicator as it provides a view of fast growing institutions. A relative view (i.e. as percentage of market) is provided in the substitutability measure. In order to find a reasonable threshold for the size indicator, it needs to be set in relation to total market.

Market values plus add-ons for stressed market environment are considered as the best estimate for the actual value of the derivative positions because of two reasons:

- market values as the true underlying value reflects the current value in case the position is liquidated;
- they reflect the positions more accurately than notional values (especially in the case of swaps the notional value is not representative).

The add-on for stressed market environment allows for the consideration of how the market values may change as economic conditions worsen. Further work is required in order to look at how the stressed value may be determined, for example by using a set of shocks on key parameters.

The indicator considers the net position of OTC transactions.

In most cases OTC transactions are done under the International Swaps and Derivatives Association, Inc. (ISDA) master agreement and therefore close-out netting should be applied (only for transactions with the same counterparty). Not taking this into account could mean to potentially increase the impact.

Often a Credit Support Annex (CSA) is used with the ISDA master agreement. Under such an agreement the counterparty has to post collateral. Collateral reduces the exposure and hence the risk of the activity.

The risk of exchange traded contracts lies with the clearing house.

<b>Interconnectedness</b>	[market value of net written (OTC) derivatives (offset for collateral and direct counterparty trades) to financial institutions] divided by [shareholders' equity of financial institutions]
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This indicator intends to measure the interconnectedness of the institution's potentially systemically risky activity with other financial institutions as this activity only causes systemic risk to the financial system when other financial institutions are affected. Failure to honour liabilities to non-financial firms or individuals as counterparty (including policy-holders) does not affect the financial system.

In order to measure the intra-financial linkages the indicator takes into account only the market value of the institutions' derivative activities (not including hedging activities) with other financial institutions.

The total shareholders' equity of financial institutions gives a simple and readily available indication of the financial strength of the financial sector and its ability to absorb losses.

<b>Substitutability</b>	[market value of net written (OTC) derivatives (offset for collateral and direct counterparty trades)] divided by [global (OTC) market value of derivatives (net of posted collateral)]
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By comparing the institution's market value of net written derivatives to the global (OTC) market value of derivatives it shows the relative size of the institution's activity. It measures how easily the market could absorb shocks and replace an actor by others already active.

<b>Time</b>	n/a
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The criterion time is immediately triggered as in case of default the effect on the financial system is of an immediate nature. The expiry dates of the positions are not relevant as all positions have a market value impact.

### **Qualitative indicators**

In addition to the quantitative indicators it is important to assess qualitative indicators when reviewing the insurance institutions. The Geneva Association proposes the following qualitative indicators to be considered in the identification process:

- Effective risk management oversight through liquidity risk framework in place.
- Comprehensive group supervision and effective disclosure.
- Role of insurer in the respective derivatives and financial guarantees market.

## 1.2. Indicators for the activity “Mis-managing short-term funding”

### Quantitative indicators

<b>Size</b>	Two indicators which show the potential mis-match: 1) Market value of potential liquidity needs at the group level if all immediate positions are called. 2) Market value of potential liquidity needs at the group level if all immediate positions are called minus immediate available liquidity sources.
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These indicators intend to measure the absolute size of the institution’s potentially systemically risky activity. It should only include short-term funding that is not related to traditional treasury activities. The first indicator intends to measure the absolute liquidity need. The second indicator intends to measure the potential liquidity gap that an institution can suffer in case the short-term liquidity sources are closed. Both indicators need to be triggered separately.

Positions with a longer maturity date in the near future do not lead to obligation to settle liabilities under stress and therefore don’t result in systemic risk.

Absolute size is used for this indicator as it provides a view of fast growing institutions. A relative view (i.e. as percentage of the market) is provided in the interconnectedness/substitutability measure. In order to find a reasonable threshold for the size indicator, it needs to be set in relation to total market.

The indicators need only to consider liabilities that mature or can be called/cancelled in the “near future”. The criterion “time” specifies the near future as three months as this is simple to use and is supposed to be a balanced suggestion. Using two different time horizons was discarded as it was deemed to make little difference and would complicate the process.

<b>Interconnectedness/ Substitutability</b>	$\frac{\text{[market value of potential liquidity needs at the group level if all immediate positions to financial institutions are called]}}{\text{[total liquid assets held by financial institutions]}}$
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This indicator intends to measure the interconnectedness of the institution’s activity with other financial institutions as this activity only causes systemic risk to the financial system when a liquidity shortfall affects other financial institutions. Failure to honour liabilities to non-financial firms or individuals as counterparty (including policy-holders) does not affect the financial system.

“Total liquid assets held by financial institutions” gives a simple and readily available indication of the total liquidity within the financial sector.

<b>Time</b>	Positions callable within three months
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Only positions of mis-managing short-term funding with expiry date in the “near future” do lead to the obligation to settle liabilities under stress. The time frame depends on the time horizon beyond which the market is assumed to resolve stresses without systemic disruption. Three months as an estimate for “near future” is a balanced suggestion and a simple time period as it is often used in financial reporting.

### Qualitative indicators

In addition to the quantitative indicators, it is important to assess qualitative indicators when reviewing the insurance institutions. The Geneva Association proposes the following qualitative indicators to be considered in the identification process:

- Effective risk management oversight through liquidity risk framework in place.
- Comprehensive group supervision and effective disclosure.
- Role of the insurer in the respective liquidity market.

## 2. Review of indicators from IAIS Memo of 13 January 2011

During the systemic risk discussion a number of indicators have been put forward for further consideration. Some of these may be considered inappropriate for insurers as they do not properly gauge the impact on the financial sector, confuse activities and institutions or do not measure systemically risky activities.

The following table gives an overview of some indicators concepts that have been mentioned as part of the systemic risk discussion and some of the comments mentioned by insurers as to their potential suitability.

Potential indicator	Comment
“Total revenues” less “insurance premium revenues” less “net investment income related to insurance activities”	✘: This is not a good indicator as it is too broad and does not properly capture the systemic riskiness of an activity in a targeted way while including not risky activities
“Technical provisions” in relation to “total liabilities”	✘: Non-technical provisions are not a good indicator as they do not correlate with systemic riskiness
How to measure exposures to financial guarantees, mortgage guarantees and CDS protection sold to assess the extent of monoline type activities?	✓: Refer to potential indicators to derivatives speculation/ financial guarantees as presented in The Geneva Association methodology
Leverage ratios related to the entire/non-traditional insurance business	✘: A leverage ratio is a foreign concept to underwriting in insurance and does not correlate with systemic riskiness
How to measure gross size of short-term borrowing, repos, etc. to assess the extent of short-term funding reliance?	✓: Refer to potential indicators for mis-managing short-term funding as presented in The Geneva Association methodology
Level 3 assets as a measure of illiquidity of assets	✘: Level 3 assets are not the correct measure for illiquidity
Which indicators do you think would be appropriate for assessing size?	✘: Size of an institution is a misguided indicator. In insurance, size has positive implications due to diversification  ✓: Any size indicator would have to be directly linked to potentially systemically risky activities (refer to The Geneva Association methodology)
Total assets, total revenues and gross written premium	✘: Size of an institution is a misguided indicator. In insurance, size has to be understood in relation to risk diversification.

Potential indicator	Comment
Size of borrowings and other similar transactions from other financial institutions	✓: Size of borrowings with potential impact on short term liquidity as related to the potentially systemically risky activity of mis-managing of short funding (refer to The Geneva Association methodology)
Size of lending and equity holding and other similar transactions to other financial institutions	✗: Such measures would not be adequate as they are measuring how the insurer is affected by the systemic risk of others  ✗: Any indicators linked to investment behaviour could have implications concerning diversification and funding of other institutions (including banks)
Reinsurance net premiums	✗: Reinsurance is not a potentially systemic risky activity (see The Geneva Association analysis)  ✗: Reinsurance net premiums as a measure for potentially systemically risk activities is not a relevant indicator
Importance as a global player	✗: Systemic risk is not a function of the level of globalisation of an insurer
Which indicators would show the extent of inter-linkages between individual insurers and reinsurers that could have an impact on substitutability?	✗: Interconnectedness needs to be looked at in the context of potentially systemically risky activities (refer to The Geneva Association methodology)  ✗: Reinsurance is not a potentially systemically risky activity



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## **Part II**

# **An analysis of the AIG case: understanding systemic risk and its relation to insurance**

by Prof. Dr Etti Baranoff  
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and  
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## Executive summary

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*“The AIG corporate empire held more than \$1 trillion in assets, but most of the liquid assets, including cash, were held by regulated insurance subsidiaries whose regulators did not allow the cash to flow freely up to the holding company, much less out to troubled subsidiaries such as AIG Financial Products.”*

Quoted from the opening paragraph of the chapter “September 2008: The Bailout of AIG”, of *The Financial Crisis Inquiry Report* (January 2011) of the National Commission on the Causes of the Financial and Economic Crisis in the United States.

This study describes the AIG<sup>15</sup> model of operations prior to the conglomerate failure up to the point when the liquidity crisis triggered the massive bailout by the US government. It is a study designed to provide understanding of the key factors in the demise of AIG in relationship to systemic risks in insurance. This report shows that if it were not for the “non-insurance” activities of AIG, the collapse, in all likelihood, would have been avoided. This finding is echoed in *The Financial Crisis Inquiry Report* of the National Commission on the Causes of the Financial and Economic Crisis in the United States which was published as we were finishing this report.

Prior to 2008, AIG operated a successful global insurance business which provided the basis for the company’s stellar credit ratings. Utilizing their good standing and broad-based global reach, AIG permitted financial innovators to create new financial products operating outside the purview of most regulatory surveillance bodies. To be able to operate outside of the U.S. supervisory framework AIG created the AIG Financial Products Corp. (AIGFP) to manage these new financial products under its holding company. The holding company was regulated by the Office of Thrift Supervision (OTS), not the insurance regulators. OTS regulators admitted<sup>16</sup> their inability and incapacity to regulate a sophisticated unit such as the AIGFP.

AIGFP began selling credit default swaps (CDSs), an unregulated product. These were at the core of the liquidity crisis that brought the company down. Other cited causes for the trouble, securities lending activities and investments in mortgage-backed securities (MBSs), exacerbated the liquidity shortage. Those two factors on their own, without the CDSs, probably would not have led to AIG’s demise. Even though AIG was aggressive in pursuing the two activities, the calls to post cash collateral for the CDSs were key to the company’s downfall when the housing markets collapsed and AIG was downgraded. These cash calls illuminate the faulty CDSs contract design and the glaring lack of supervision of this product. The calls for cash collateral depleted the liquidity of AIG, its reputation and the trust of all counterparties. The liquidity crisis was averted by the bailout (approximately US\$182 billion) from U.S. taxpayers.

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15 The term AIG refers to the total scope of consolidation of AIG Holding Company and does not mean specific legal entities, but otherwise stated.

16 As per *The Financial Crisis Inquiry Report* (National Commission on the Causes of the Financial and Economic Crisis in the United States, 2011).

The main contribution of this report is the delineation of the key internal factors from the external macro market and regulatory factors that contributed to the failure. We regard the latter as macro factors underpinning the foundation that propelled the activities of AIGFP. As global regulators develop indicators to identify Systemically Important Financial Institutions (SIFIs), these macro factors should be integrated into any newly created regulatory framework.

The inside and external (macro) factors that led to AIG’s collapse are summarized in the following table:

External (Macro) Factors to the Collapse		Inside Factors to the Collapse
Reliance on rating agencies led to faulty “trust” in the markets.	=>	AIG’s strong insurance operation provided a stellar rating. The high rating led highly sophisticated financial innovators to create the AIG Financial Products Corp. (AIGFP) under the AIG Holding Company. AIGFP sold credit default swaps (CDSs) and other derivatives.
Housing market bubble (entitlement ideology) led to subprime mortgages and growth in mortgage-backed securities (MBSs) (securitisation) of toxic loans.	=>	AIGFP responded to the increased needs for CDSs to provide “apparent assurances”. The CDSs became enablers to growth in securitisation and leveraging by banks. The circular motion led AIGFP to cover subprime mortgages despite its stricter guidelines. When the housing bubble burst AIGFP was the holder of the “apparent safety net” to many banks. The liquidity crisis erupted.
Lax banking and Thrift regulation led banks to use CDSs from highly rated providers. There was no derivatives regulation (the free markets ideology). Insurance regulators were not part of non-insurance operations of AIG Holding Company and AIGFP.	=>	AIGFP exposure in CDSs grew to over US\$500 billion by 2008. There were no checks and balances over the operations of the unit. The Thrift regulators noted their lack of expertise. Without derivatives regulations, there were no transparencies regarding the CDSs. CDSs contracts had faulty designs with fast-paced cash collateral calls for downgrades of AIG. The liquidity crisis of AIGFP was not transparent to the whole conglomerate in time. Their faulty financial models neglected to account for some important assumptions. CDSs were and are not insurance contracts and thus, lacked the “safety valves” of insurance contracts.
Insurance regulation has been strong over the AIG insurance units and insurance products.	=>	The securities lending activities of AIG insurance units and the investments in MBSs were more aggressive than the regulatory guidelines. AIG had to provide cash pools to adhere to insurance regulations. The companies did not sell the toxic assets just acquired. These activities continued simultaneously as AIGFP was running out of cash, thus exasperating the liquidity crisis. Insurance regulators did not allow the use of the US\$1 trillion in the insurance companies’ assets to help AIGFP, a non-insurance entity.
Financial markets crisis erupted and Lehman Brothers was allowed to collapse. The U.S. government recognized the interconnectedness of the AIGFP unit’s activities worldwide.	=>	Efforts to find capital markets solutions failed and the U.S. government provided US\$182 billion bailout.

The key takeaway and lessons suggested by the failure of AIG include:

#### **Key takeaways:**

1. **AIGFP was not an insurance company.**
2. **AIGFP was not regulated by insurance regulations.**
3. **AIGFP's credit default swaps were the key factor to the AIG collapse.**

#### **Key macro prudential lessons from the AIG failure**

1. **Use credit ratings with care: do not allow exploitation of high ratings.**
2. **Be aware of banks' capital being replaced by new opaque financial products.**
3. **Remove gaps in regulations and require transparency.**
4. **Forbid companies to select their own regulatory bodies.**
5. **Understand insurance vs. non-insurance or quasi-banking activities and products.**
6. **Create clarity to delineate between the banking and insurance models.**

#### **Key lesson:**

**When non-insurance or quasi-banking operations enter the insurance arena, expert insurance supervision is needed to close gaps in regulation.**

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## 1. Overview

The objective of this paper is to identify links between the AIG failure and the understanding of systemic risks at financial institutions and to identify lessons to be drawn for safeguarding financial stability in the insurance sector. Using the chronicle of the collapse of AIG and its subsequent bailout with US \$182<sup>17</sup> billion government funds, this study uncovers internal and external (macro) factors explaining the collapse. The internal factors are those activities that were generated from within AIG and are also called “inside” activities. The macro factors are those external to AIG, but important as drivers to their behaviour. Without some of the external underpinnings, their operations would not have been allowed and the failure may have been averted. Thus, both the inside and external macro factors intertwine to explain the causes for the AIG debacle and subsequently, the understanding of systemic risk determinants to create a model for systemic risks in insurance.<sup>18</sup>

As will be shown later and is fully supported by the recently published 2011 report of the National Commission on the Causes of the Financial and Economic Crisis in the United States, the main internal factor to the AIG collapse was the sheer size of the exposure of the CDSs<sup>19</sup> sold by AIGFP:

*“The Commission concludes AIG failed and was rescued by the government primarily because its enormous sales of credit default swaps were made without putting up initial collateral, setting aside capital reserves, or hedging its exposure—a profound failure in corporate governance, particularly its risk management practices.”*<sup>20</sup>

Harrington (2009) and Sjostrum (2009), and most of the reports about the AIG failure also include the “securities lending activities” and investment in mortgage-backed securities (MBSs) as causes of the failure. We explain in this report why the CDSs exposure was the key ingredient to the failure. While AIG’s securities lending activities were aggressive relative to the New York insurance regulatory requirements at the time, and led to a need to put cash collateral in pools,<sup>21</sup> this

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17 Orol (2010).

18 This delineation may appear artificial, but it is designed to pinpoint areas that can generate systemic risks and clarify the chronicle of the demise in terms of its components.

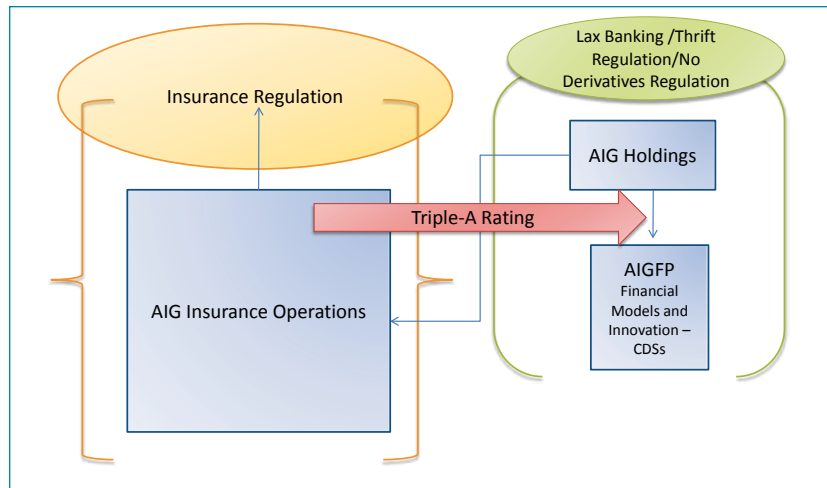
19 A credit default swap (CDS) is an agreement in which the protection buyer of the CDS makes a series of payments (often referred to as the CDS “fee” or “spread”) to the protection seller and, in exchange, receives a payoff if a credit instrument (typically a bond or loan) experiences a credit event.

20 See National Commission on the Causes of the Financial and Economic Crisis in the United States (2011), p. 352.

21 As gleaned from the 2008 AIG 10K report, p. 6 “Continuing Liquidity Pressures”: “Historically, under AIG’s securities lending program, cash collateral was received from borrowers and invested by AIG primarily in fixed maturity securities to earn a spread. AIG had received cash collateral from borrowers of 100 to 102 percent of the value of the loaned securities. In light of more favorable terms offered by other lenders of securities, AIG accepted cash advanced by borrowers of less than the 102 percent historically required by insurance regulators. Under an agreement with its insurance company subsidiaries participating in the securities lending program, AIG parent deposited collateral in an amount sufficient to address the deficit. AIG parent also deposited amounts into the collateral pool to offset losses realized by the pool in connection with sales of impaired securities. Aggregate deposits by AIG parent to or for the benefit of the securities lending collateral pool through August 31, 2008 totaled \$3.3 billion.”

activity on its own would have not taken AIG down<sup>22</sup> without the liquidity crisis generated by the exposure of the CDSs and the call for cash collateral upon each downgrade of the conglomerate. As activities regulated by insurance regulators, the limits were set to avoid potential trouble. The cash needs of this activity were not in crisis, but were aggravated by the liquidity crisis of the CDSs exposure.

**Exhibit 1: AIG structure relative to regulation (blue are internal AIG factors)**



The structure of AIG within regulatory frameworks is shown in Exhibit 1. The AIGFP unit was part of the AIG Holding Company structure and legally and operationally separated from the insurance operations. The insurance operations had been under the scrutiny of the U.S. insurance regulators and generated a triple-A credit rating, highly coveted among financial institutions. The other side of the structure was under permissive banking regulation and “no regulation” for derivatives and CDSs. Based on the insurance success and the high rating, AIGFP, a non-insurance entity, sold “\$2.7 trillion worth of swap contracts and positions; 50,000 outstanding trades; 2,000 firms involved on the other side of those trades; and (had) 450 employees in six offices around the world.”<sup>23</sup> The CDSs pricing and promises were developed based on sophisticated models and assumptions. The underlying assumptions were based on crucial factors: 1) AIG could keep its high rating,<sup>24</sup> and 2) CDSs were to cover high quality debt instruments with minimal potential of

22 Per discussion with experts in the field of Securities Lending, we learned that this activity is in essence an investment activity facilitated by leverage. The lender of the securities, the insurer, invests the cash collateral pledged by the borrower. If the investments turn sour, the lender would incur an unrealized loss, which would be realized upon a default of the investment or if they chose to sell the investment—as would be the case with any other investment held by the insurer. The lender has an unconditional obligation to the borrower to return the cash collateral upon demand. And, since collateral is marked to market daily, presumably the borrower would not suffer a loss even if an insurer becomes insolvent and is unable or chooses not to return the cash to the borrower. The borrower under such circumstances could/would sell the borrowed securities and close out the transactions. The caveat to all this is that under some State laws, regulators could invoke a stay and possibly prevent the borrower from closing out the loan. But even if that were to occur, the borrower still has the collateral- which they presumably could pledge to others if they needed liquidity. Thus, could insolvency cause a systemic risk? It does not appear to be the case here.

23 O’Harrow Jr. and Dennis (2008).

24 As gleaned from the 2008 AIG 10K report, p. 42 downgrades and posting of cash collateral went hand-in-hand: “In the event of a further downgrade of AIG’s long-term senior debt ratings, AIGFP would be required to post additional collateral and AIG or certain of AIGFP’s counterparties would be permitted to elect early termination of contracts. It is estimated that as of the close of business on February 18, 2009, based on AIGFP’s outstanding municipal GIAs, secured funding arrangements and financial derivative transactions (including AIGFP’s super senior credit default swap portfolio) at that date, a one-notch downgrade of AIG’s long-term senior debt ratings to Baa by Moody’s and BBB+ by S&P would permit counterparties to make additional collateral calls and permit either AIGFP or the counterparties to elect early termination of contracts, resulting in up to approximately \$8 billion of corresponding collateral postings and termination payments, a two-notch downgrade to Baa by Moody’s and BBB by S&P would result in approximately \$2 billion in additional collateral postings and termination payments, and a three-notch downgrade to Baa by Moody’s and BBB by S&P would result in approximately \$1 billion in additional collateral and termination payments.”

non-performance. Based on these assumptions, embedded in the sophisticated models created by the ingenious employees of AIGFP, CDS contracts included provisions requiring posting of cash collateral in case AIG’s credit rating would decline.

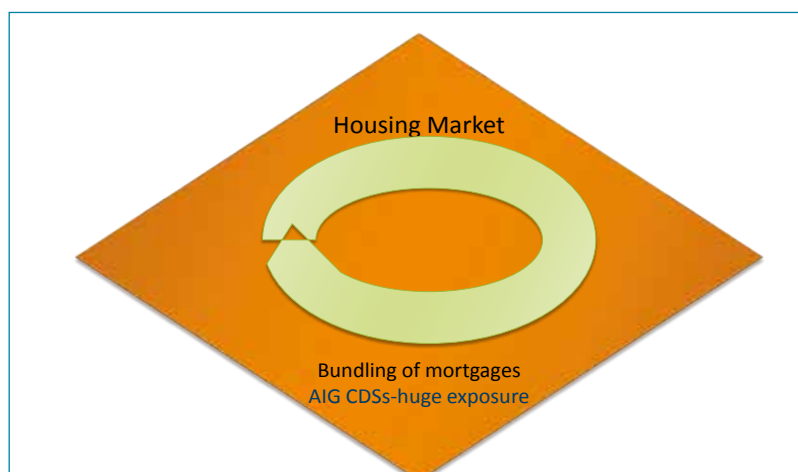
Thus, the mechanisms in the embedded models and contracts for CDSs were dependent on no or minimal defaults in debt and mortgage loans for housing, along with keeping AIG’s high credit ratings (the pink arrow in Exhibit 1) generated by the strong insurance operations (an important factor).

The main ideologies underpinning the huge growth in AIG CDSs exposure were the “free markets” philosophy and the belief that “everyone deserves a home”. These credos manifested themselves in lenient banking regulation and no regulation for derivatives instruments. The innovative financial instruments such as CDSs, therefore, were allowed to grow without checks and balances. The boom in the housing market was propelled by securitisation of mortgage securities with a high level of leveraging and slack underwriting. The MBSs included too many low grade subprime mortgages. Without surveillance and lack of risk management in the mortgage markets along with dependency on the high rating of the AIG conglomerate, AIGFP was allowed to generate an enormous exposure in CDSs (US \$533 billion in notional amount at the end of 2007<sup>25</sup>).

The January 2011 National Commission on the Causes of the Financial and Economic Crisis in the United States’ Report proceeds as follows:

*“AIG’s failure was possible because of the sweeping deregulation of over-the counter (OTC) derivatives, including credit default swaps, which effectively eliminated federal and state regulation of these products, including capital and margin requirements that would have lessened the likelihood of AIG’s failure. The OTC derivatives market’s lack of transparency and of effective price discovery exacerbated the collateral disputes of AIG and Goldman Sachs and similar disputes between other derivatives counterparties.”*

## **Exhibit 2: The circular motion of the housing boom, the bundled securities and AIG CDSs**

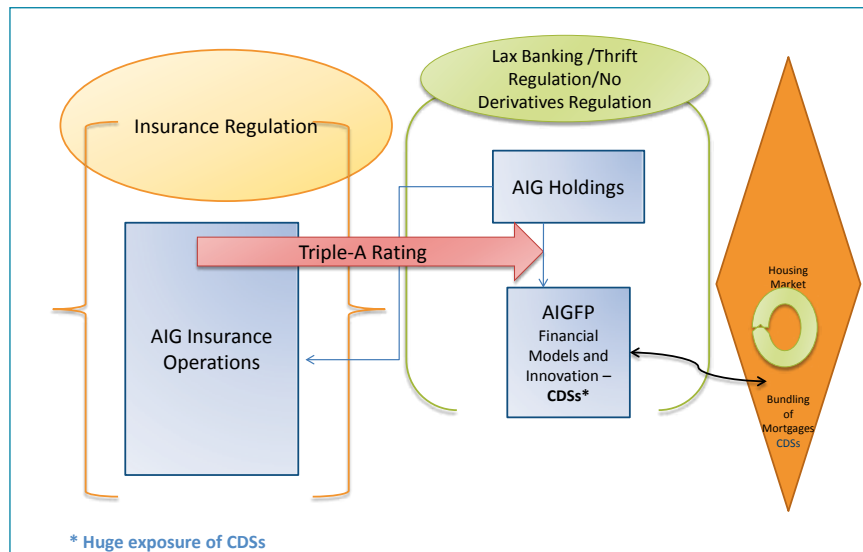


AIG was operating with highly risky CDSs within markets and regulatory frameworks that at any moment could be triggered into a massive systemic collapse. The structure is depicted in Exhibit 3 which combines Exhibits 1 and 2.

25 See Harrington (2009), p. 790.

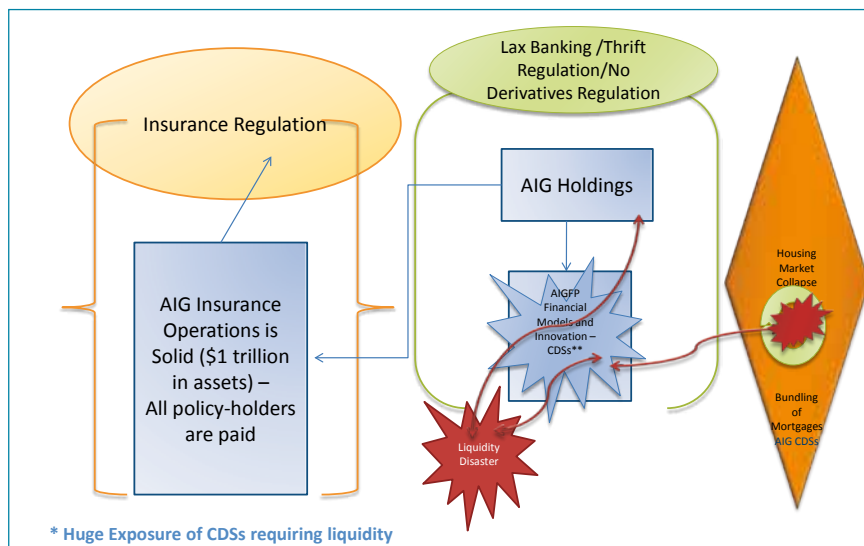


**Exhibit 3: AIG structure relative to regulation, housing, MBSs and CDSs—before the collapse**



When the housing bubble burst and the credit rating organisations lowered AIG’s rating, the sheer size of the CDSs exposure led to the collapse as shown in Exhibit 4. Under the CDS contracts, without the high rating, AIG had to post cash collateral for the credit instruments they covered with the CDSs. Liquidity evaporated and the bailout was perceived to be<sup>26</sup> the only solution to avoid the potential for a complete destabilization of the entire financial system.

**Exhibit 4: After ratings are lowered—AIG collapse (bailout)**



Thus, the principle finding in this paper is that unexpected and un-modelled external macro risks suddenly exposed the risky activities of AIGFP. The strength of the insurance operation

<sup>26</sup> AIG, in its report to the Treasury Department, portrayed the situation as dire because of “run on the bank” for life insurance. See also Sorkin (2009). There are a few arguments refuting AIG’s assertions. The report wrongfully regards life insurance policy-holders as uninsurable people with inability to obtain new policies from the competition. The life insurance industry is known for its competitiveness. Many insurers were ready to accept the AIG policy-holders in case AIG became insolvent. Since resolution of insurance companies is consistently an orderly process that includes Guaranty Funds, many oppose AIG’s report about a potential “run on the bank”. This unfortunately instilled wrong perceptions about the nature of the insurance model as opposed to the banking model.

led to adopting non-insurance financial instruments outside of the insurance operation. These products, generated by AIGFP, depended solely on the strength of the insurance business. Without the external macro circumstances of lax and/or no regulation in key areas (of the financial realm but not in insurance), the growth in the CDSs exposure of AIGFP would have lacked a key enabling element.

Supporting this conclusion is the following finding by The Financial Crisis Inquiry Report:

*“AIG engaged in regulatory arbitrage by setting up a major business in this unregulated product, locating much of the business in London, and selecting a weak federal regulator, the Office of Thrift Supervision (OTS). The OTS failed to effectively exercise its authority over AIG and its affiliates: it lacked the capability to supervise an institution of the size and complexity of AIG, did not recognize the risks inherent in AIG’s sales of credit default swaps, and did not understand its responsibility to oversee the entire company, including AIG Financial Products. Furthermore, because of the deregulation of OTC derivatives, state insurance supervisors were barred from regulating AIG’s sale of credit default swaps even though they were similar in effect to insurance contracts. If they had been regulated as insurance contracts, AIG would have been required to maintain adequate capital reserves, would not have been able to enter into contracts requiring the posting of collateral, and would not have been able to provide default protection to speculators; thus AIG would have been prevented from acting in such a risky manner.”*

If we play the “what if” game by taking each of the external macro factors out, we can show how the absence of any enabling factor could have stopped the sequence of events that led to the disaster shown in Exhibit 4.<sup>27</sup> Sorkin (2009) describes the situation as follows: *“AIG used its triple-A rating from the insurance part of its business to run a huge casino that then overwhelmed the entire business.”* Edward M. Liddy, who became AIG’s chief executive after the bailout added: *“It’s an interesting structure where you have an insurance company that works really well and on top of it is a holding company and the holding company’s biggest asset is this huge hedge fund.”* Ron Shelp, the author of *Fallen Giant*<sup>28</sup> described AIG as a risk taker during his Bloomberg interview.<sup>29</sup> Our understanding here is that the AIGFP unit took advantage of every crack in the regulatory structure. Such arbitrage risk should be considered very important in developing a future regulatory oversight structure that could prevent systemic risk from collapsing the system. Considering exclusively the inside or internal elements of systemically risky activities without examining the contributory external macro elements leaves a major gap in the regulatory surveillance for systemic risks and opens the door to new “creative” activities that may lead to new crises in the future.

Finally, the U.S. National Commission on the Causes of the Financial and Economic Crisis in the United States adds in its conclusion of the AIG Chapter that:

*“AIG was so interconnected with many large commercial banks, investment banks, and other financial institutions through counterparty credit relationships on credit default swaps and other activities such as securities lending that its potential failure created systemic risk. The government concluded AIG was too big to fail and committed more than \$180 billion to its rescue. Without the bailout, AIG’s default and collapse could have brought down its counterparties, causing cascading losses and collapses throughout the financial system.”*

Using many sources, this paper shows how the inside activities and macro factors led to AIG’s demise and ultimately the necessary governmental rescue actions. Section 2 is a brief discussion of the definition for systemic risk in connection to the AIG story, an explanation of the differences between insurance and CDSs and the nature of securities lending. This section also provides a

<sup>27</sup> This is shown in the appendix section of the report.

<sup>28</sup> *Fallen Giant: The Amazing Story of Hank Greenberg and the History of AIG* tells the story of global insurance giant AIG, from its first business transaction in China in 1919 to the exit of its longtime chairman and CEO, Maurice “Hank” Greenberg in 2005.

<sup>29</sup> <http://www.bloomberg.com/video/61196958/>

brief overview of the nature of insurance regulation. Section 3 focuses on AIG's inside factors, while section 4 focuses on the external macro factors. Section 5 brings both factors together and follows the sequence to the collapse as shown in Exhibit 4. The report concludes with lessons to be learned to avoid future calamities.

## **Summary:**

**The AIG failure was caused by a mix of:**

- 1. Inside Factors—reliance on the strength of the AIG insurance operations to obtain a high credit rating for innovation in financial products outside of the insurance operations; CDSs contract design; faulty financial models; lack of appropriate risk management**
  - 2. External Macro Factors—lax thrifts and banking regulation with no regulation of derivatives (free markets ideology); housing market bubble and collapse (entitlement to homes ideology); securitisation growth; reliance on credit ratings agencies**
  - 3. All factors came to a head to bring about the collapse: no regulation of sophisticated financial products with high credit ratings => growth in CDSs => faulty models not predicting housing markets' collapse and rating downgrades => calls for cash collaterals => liquidity disaster => failure and bailout**
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## 2. Systemic risks in insurance, insurance vs. credit default swaps, securities lending, and insurance regulation

### Systemic risks

Since this paper is focused on better understanding systemic risks<sup>30</sup> in insurance using the AIG debacle as the key case study, we begin with the definitions provided by the Financial Stability Board (FSB) and the International Association of Insurance Supervisors (IAIS) and thoroughly analyzed in The Geneva Association Systemic Risk in Insurance (SRI) reports (2010a and b). The SRI reports employ the FSB criteria (and the IAIS extension of them) for systemic risk using size, interconnectedness, substitutability, and timing as the core triggers to examine insurers' activities for identification of potentially systemically risky activities (pSRA). These activities are regarded as internal to financial institutions. In relationship to the AIG demise, all four factors in the definition did play a role. The size of the CDSs was unprecedented in its exposure. The CDSs were completely interconnected to many players in the market and there was no substitutability. The timing was critical and led to the liquidity crunch as shown in Exhibit 4. Moreover, AIG was one of the conglomerates recognized as “too big to fail”.

Added links to systemic risks are the underpinning external macro factors that led to the collapse. One of the contributions of this paper is the observation that the definition of systemic risks cannot ignore the role of “no regulation” or “inadequate regulation” and the importance of rating organisations as key facilitators to systemic failure. When potentially systemic risky behaviour is orchestrated because of incentives built into risky markets and gaps in regulatory frameworks, there can be momentum for massive destruction.

### Insurance contracts vs. credit default swaps

René M. Stulz (2010) in his paper “Credit Default Swaps and the Credit Crisis”<sup>31</sup> provides a well written comparison between credit default swaps and insurance products that highlights the key difference between them. He notes “... *the parallel between insurance contracts and credit default swaps does not hold in two important ways. First, you do not have to hold the bonds to buy a credit default swap on that bond, whereas with an insurance contract, you typically have to have a direct economic exposure to obtain insurance. Because you don't have to hold bonds, the amount you insure with a credit default swap is usually called the notional amount. If you buy a credit default swap on Ford for a notional amount of \$100 million, you have insurance on \$100 million of principal amount of Ford bonds. Second, insurance contracts (mostly) are not traded; in contrast, credit default swap contracts do trade over the counter—that is, a market where traders in different locations communicate and make deals by phone and through electronic*

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30 The lack of definition is thoroughly discussed in The Geneva Association *Insurance and Finance* newsletter No. 7, February 2011.

31 René M. Stulz is the Reese Chair of Banking and Monetary Economics, The Ohio State University, Columbus, Ohio, and Research Associate, National Bureau of Economic Research, Cambridge, Massachusetts.

messages...”. CDSs “*seem like straightforward financial derivatives that serve standard useful functions: making it easier for credit risks to be borne by those who are in the best position to bear them, enabling financial institutions to make loans they would not otherwise be able to make, and revealing useful information about credit risk in their prices.*” However, since they covered subprime mortgages, they became the culprit that “blew up Wall Street” and caused the demise of AIG.

The accounting treatment and the regulatory oversight are very different between CDSs and insurance contracts. Insurance contracts are well structured and have sustained years of court cases and refinement as evident in examining any insurance policy. The insurance regulatory authorities require the insurer to set up a (reserves) liability at policy inception to cover expected losses for every type of product that is introduced in the market place. Against these liabilities, the insurer holds assets to match to the liabilities, a practice known as asset/liability matching. Every asset has risk factors that lead to capital requirements under the risk-based capital formula. Such was not the case for the CDSs.

As opposed to the requirements imposed on the writer of an insurance contract, the writer of a CDS contract (i.e., the seller of the protection) does not have to post liabilities or reserves as long as cash collateral is not called for. Only if the CDS gets in the money from the buyer’s point of view, i.e. the contract represents an asset to the buyer; the writer has to set up a liability representing his debt. Also, there was no regulation of the CDS contracts and no oversight. The structure of the CDS contract has not received the historical scrutiny of an insurance contract and the careful treatment by supervisors. The more than 200-year old tradition of insurance regulation (discussed below) with its comprehensive codes and regulations was not afforded the opportunity to scrutinize this risky CDS product which was deemed to be a systemically relevant activity (SRA) in The Geneva Association SRI reports.

## **Securities lending**

Since the securities lending activity was cited as a contributor to the demise of AIG and also noted as potentially systemically relevant activity (pSRA) in The Geneva Association SRI reports, we provide here an explanation of the nature of the securities lending activity.<sup>32</sup>

Securities lending is rather straightforward. The lending institution transfers securities to the borrower in exchange for cash collateral. The lender pays the borrower a financing or “rebate” rate for the use of the cash collateral. The cash collateral is marked to market daily such that the value of the collateral posted to the lender always meets or exceeds the value of the loaned securities. The lending institution usually invests cash collateral in short term, high-quality, investments that provide adequate liquidity given the short-term nature of the loans. This is the typical way for the process to work. The risks inherent in these transactions are not very different from any other investments, except that there is an added layer of leverage (i.e., that finances the cash collateral investments). Since the borrowers can often request the cash back at any time, it is prudent for the lender to ensure that the cash collateral investments provide adequate liquidity. Securities lending, therefore, is simply a leveraging “game” with the lion’s share of the risk borne by the lender, and largely a function of how the cash collateral is invested. The risks to the borrower are minimal, as the lender has an unconditional obligation to return the cash collateral at the termination of the loan. Additionally, since the borrower holds the securities of the lending institution as collateral, and has the contractual right to liquidate those securities in the event of a lender default, there is little, if any, systemic risk associated with a lender’s insolvency.

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<sup>32</sup> This writing is based on discussions with experts in the field and study along with examination of the new New York regulation for this activity.

Thus, securities lending is an activity whereby an investor (it can be an insurer) loans its securities to a borrower, typically a large brokerage firm, for cash collateral.<sup>33</sup> The industry practice requires cash collateral to be marked to market daily to ensure the value of the cash pledged by the borrower exceeds the value of the securities loaned.<sup>34</sup> The lender pays the borrower a financing rate for the use of the pledged cash collateral and invests the cash collateral in anticipation of earning a return higher than the financing rate. Most securities loans are not only very short-term, but terminable on demand by either party.

At the time of the AIG collapse, the New York insurance regulators required cash collateral equal to 102 per cent of the value of the loaned securities. This regulation was enforced and if the lender did not follow it, it had to hold additional cash collateral for such a breach.

Reading the 2008 10K of AIG and talking to experts, the securities lending activities at AIG were not typical for insurers or others in the securities lending industry for several reasons. One reason was that they did not maintain the collateral at the required 102 per cent. This required AIG to have large cash collateral pools set aside to support any shortfall.

During the crisis, and specifically after the announcement of the Lehman bankruptcy, a reduction in the market value of loaned securities coupled with less demand to borrow securities forced many lenders to make additional loans to maintain enough funding to support their cash collateral investment pools. The alternative would have been to sell assets that had been purchased with cash collateral and potentially realize losses.<sup>35</sup> Throughout this period, most lenders did not realize losses and were able to maintain the necessary funding to support their investment pools. AIG, however, ran a significantly larger and more aggressive securities lending programme than others. First, although their financing was generally very short-term (typically 30 days or less), a large percentage of the cash collateral was invested in long-term fixed-income securities with much of it in relatively illiquid mortgage-backed securities. Second, AIG relied heavily on corporate bonds, not just U.S. treasuries and other “no risk” securities to fund their cash collateral investments. The demand by borrowers for U.S. Treasury and Agency collateral has always been quite strong, and this was true during the crisis, as investors flocked to low/no risk investments.<sup>36</sup> As such, it has been common practice for lenders to maintain a very high percentage, often up to 100 per cent, of their U.S. Treasury and Agency securities on loan. This proved to be the case during the crisis. The demand for corporate bonds, and most other securities, however, has been largely limited to specific issues that must be borrowed to cover a short. Therefore, the percentage of a lender’s corporate bonds placed on loan has been typically very low, usually in the mid to low single digits.<sup>37</sup>

Unlike other lenders, AIG financed a very large percentage of their cash collateral investments by “pushing out” corporate bonds to borrowers by paying relatively aggressive rates. This strategy provided the necessary financing at a relatively low premium until the crisis began to unfold. With AIG’s downgrades and housing market exposure, and a more acute realization of how heavily AIG was dependent on rolling their corporate bond loans, AIG’s borrowers began to increase the rate premium and demand additional collateral.<sup>38</sup> As the crisis continued, the financing cost under

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33 Other forms of collateral may be pledged, such as U.S. Treasury securities, but for the purpose of this discussion it is assumed that cash is pledged.

34 The National Association of Insurance Commissioners (NAIC) model law requires that collateral equals 102 per cent of the value of the loaned securities and be maintained at that level. As of 2010, the New York insurance regulators added much stronger requirements for securities lending reporting per Circular Letter 16 (2010).

35 Although cash collateral vehicles typically maintain a large percentage of investments in highly liquid assets, the unique circumstances during the crisis caught many securities lenders off guard.

36 Securities borrowed from lenders, particularly U.S. government and Agency securities, are often rehypothecated to money market investors under repurchase agreements.

37 Per the Risk Management Agency (RMA) quarterly surveys, the average amount of corporate bonds on loan during 2010 and 2009 was 5 per cent and 3.5 per cent, respectively.

38 As noted, market practice requires the borrower to pledge to the lender 102 per cent of the value of the borrowed securities. With AIG, however, it is understood that most borrowers required AIG to post additional collateral (i.e., beyond the market value of the loaned securities), and many required that the total collateral held exceed 120 per cent of the cash loaned.



this AIG strategy became extremely expensive. AIG eventually chose to terminate the loans and return the cash collateral to the borrowers, which they funded by loaning securities versus cash collateral to the Federal Reserve Bank of New York.<sup>39</sup> This action effectively replaced the funding provided by AIG's securities lending borrowers with cash collateral provided by the Fed.

This move was not considered necessary to avoid a collapse of AIG, rather a strategy by AIG to stabilize its borrowings and the associated costs supporting their cash collateral investments. There was no systemic risk in this activity since the borrowers, in the event AIG defaulted on the loan transactions, had a contractual right to liquidate the securities borrowed from AIG and terminate the loans. And, the additional collateral pledged by AIG provided protection to the borrowers in the event the market value of the borrowed securities was less than the cash collateral pledged to AIG. The assertion that the securities lending activity would on its own have created the failure of AIG and a systemic collapse is in question after understanding the nature of the securities lending activity, as a default by AIG would not have directly caused harm to the borrowers.

AIG's aggressive securities lending activity required cash. It appears that the activity continued as if there were no liquidity crisis at AIGFP for posting cash for the CDSs. It is apparent that there were breakdowns in the company's lines of communication and no risk management.

The explanation here serves to show that it was AIG who made the choice to close the loans and take US\$43 billion in bailout for the securities lending activity. In the spiral of AIGFP's collapse, many activities that could have sustained themselves were caught in the turmoil. The securities lending activity is such a case in point.

## Insurance regulation

The paper "Trends in Insurance Regulation"<sup>40</sup> provides a history of insurance regulation in the U.S. in the past 200 years. The study shows that the insurance regulatory system in the U.S. is made up of a comprehensive body of insurance codes, laws and regulation that are built on experiences, past disasters and response to troubles. It is an ever-evolving and dynamic body of work. With each disaster, important new laws and regulations were enacted to protect the public. The U.S. insurance regulatory system can serve as a statistically significant sample of insurance regulation in the developed nations worldwide. It is a strong system that minimizes regulatory gaps with capital requirements, reserving asset allocation, contracts and market conduct oversight regulations. The regulators of insurers and insurance products exert strong oversight in regards to the contracts, the liabilities and assets.<sup>41,42</sup>

With this strong body of laws and regulations, the foundation exists to ensure that if an insurer becomes insolvent, there is an orderly process of resolution that minimizes the harm to consumers. The regulatory mechanism has built-in processes to catch potential trouble early on. Statistical analysis is continually being conducted to find triggers for spot examinations. The NAIC created a comprehensive early warning system and many States in the U.S. created their own, such as Texas. Academicians and actuaries have provided countless studies to supplement and provide a strong foundation for the regulators.<sup>43</sup> It is well known that insurers are overcapitalized relative

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39 Per a Federal Reserve press release dated 8 October 2008, the Federal Reserve Board authorized the Federal Reserve Bank of New York to borrow up to US\$38.7 billion in fixed-income securities from AIG in return for cash collateral.

40 Baranoff and Baranoff (2003).

41 For a detailed explanation of insurance regulation see the website of the NAIC in the U.S. (<http://www.naic.org/>) and a myriad of textbooks.

42 Additional explanation of the regulatory structure of insurance is provided in Baranoff et al. (2009), Chapter 8. Chapters 9 and 10 provide in-depth overview of the structure of insurance contracts. The textbook also provide insurance policies as examples of the insurance contracts allowed by law in the U.S.

43 Many such studies appear in *The Journal of Risk and Insurance*, the two academic journals of The Geneva Association (*The Geneva Papers on Risk and Insurance* and *The Geneva Risk and Insurance Review*), the *Journal of Insurance Regulations* and many more. In order to avoid missing any work in the field of solvency detection and capital structure for insurer, authors are not noted by name. The reader is invited to search these journals.

to the requirements of the risk-based capital laws. Moreover, each new product, such as variable annuities with guarantees, requires additional reserves as well as additional capital under the risk-based capital formulas.

In light of the strong insurance regulatory oversight in the U.S., it is inconceivable that insurers, under their own watchdog could have acted as AIGFP did with the massive CDSs exposure. If by chance anyone had considered CDSs to be an insurance product, how is it conceivable that it would have been allowed to not go through the rigorous insurance regulatory tests for sustainability, accurate actuarial assumption behind the rates, correct wording in the contracts and some built-in safety valves? The notoriously “burdensome” insurance regulation arm should not be shunned or ignored when the macro prudential regulations are set up to identify SIFIs. AIG did not fail under insurance regulation. It can be said that not having this level of scrutiny was a macro factor that led to the collapse, as explored in more detail in the next parts of this report.

## Summary:

- 1. Inside activities of AIGFP did fit well within the current definitions used by The Geneva Association’s Systemic Risk in Insurance reports (2010a and b): size, interconnectedness, substitutability, and timing. AIGFP, a non-insurance subsidiary of AIG adopted activities that used the size, stature, and reputation of this company to create CDSs. The CDSs were interconnected to the global economies, did not have any substitutions and not enough time to raise cash when the liquidity disaster hit.**
  - 2. External (macro) underpinning factors that lead to systemic risks need to be added:**
    - a. market conditions: housing markets bubble, subprime loans and entitlement ideology,**
    - b. regulatory gaps,**
    - c. dependency on credit ratings instead of capital.**
  - 3. CDSs are not insurance contracts. If they were, they would have gone through the rigorous insurance regulatory tests for sustainability, accurate actuarial assumptions behind the rates, correct wording in the contracts and some built-in safety valves.**
  - 4. Securities lending activities and investment in MBSs would not have caused the collapse on their own as they did not take any other insurer down and all policyholders’ claims were paid.**
  - 5. The notoriously “burdensome” insurance regulation arm should not be shunned or ignored when the macro prudential regulations are set up to identify SIFIs.**
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### 3. Inside factors: innovation in financial products—CDSs

Much was written about the reasons for the near collapse of AIG and the bailout. As noted above, according to Harrington (2009), Sjostrum (2009) and a myriad of papers exploring the topic, AIG failed because it lacked the liquidity needed to post collateral for its CDSs sold under its AIG Financial Products Corp. (AIGFP). As commonly noted, the need for cash for the securities lending activities, and the massive investments in MBSs aggravated the situation. We explained above that the key factor was the CDSs while the latter two factors became part of the story as they were caught with liquidity needs in the spiral of the demise.

The sale of the CDSs was done through the AIGFP unit, established in 1987 under the AIG Holding Company, a non-insurance holding company operating under a thrift license from the U.S. government. AIGFP was described as an enterprise that “*evolved into an indispensable aid to such investment banks as Goldman Sachs and Merrill Lynch, as well as governments, municipalities and corporations around the world. The firm developed innovative solutions for its clients, including new methods to free up cash, get rid of debt and guard against rising interest rates or currency fluctuations.*”<sup>44</sup>

Initially, AIGFP prided itself for its careful financial modellers and risk engineers. Every model was examined and scrutinized. “*Scepticism was hard-wired into the company’s culture, part of its mantra: Hedge if you can. Don’t make speculative trades... assessing data daily, recalibrating assumptions constantly, counterbalancing one risk against another and making the hedges.*”<sup>45</sup> However, in 1998, the unit began selling CDSs (unregulated derivative instruments) and as a consequence, the unit became increasingly dependent on the success of these kinds of transactions. The models for CDSs that had been adopted by AIGFP showed almost no likelihood of losing money. It was recognized as virtually “free money” (for fees) as long as AIG kept its high rating.<sup>46</sup> AIGFP thought it only covered the highest quality securitized bundles of debt and mortgages. As such, they did not see reason to hedge the risk of providing “an apparent insurance” to the activities of collateralized debt obligations (CDOs) and MBSs.

In 2005, the unit discovered that the credit quality of the CDOs and MBSs was much lower than assumed. AIGFP could not get out of its obligations as is gleaned from the Testimony of Joseph J. Cassano, former president of AIGFP, before the Financial Crisis Inquiry Commission (30 June 2010.) What made it worse for AIG Holding was the fact that there were apparent breakdowns in its internal risk management.

With regard to the two factors noted above, the securities lending and the investments in MBSs were part of the insurance operations structure of AIG and under the insurance regulation umbrella. These activities, as we noted earlier, would not on their own have caused the collapse.

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44 O’Harrow Jr. and Dennis (2008).

45 See footnote 50.

46 It is a paradox that sophisticated people would truly believe that they can get free money, especially in the corridors of such a massive and highly rated company as AIG.

Many insurers invested in MBSs and some were involved in securities lending. However, except for The Hartford and Lincoln National, no other insurer resorted to accepting the Federal Government bailout. For these last two insurers the amount received was a small fraction relative to the amounts received by banks and AIG (see Harrington, 2009).

The insurance operations and structure of AIG were solid during the crisis, as was the case with most of the insurance industry. It has been well established that AIG policy-holders did not lose money, nor were they denied claims payments. Despite its liquidity needs, AIG's insurance structure was solid. It was only because of the CDSs exposure that liquidity was drained from AIG. In absence of the CDSs collapse, the other two activities discussed in the literature would not have caused the collapse of AIG.

Thus, the highly rated global AIG conglomerate incorporated in its structure (as shown in Exhibits 1, 2 and 4) a financial products unit that used the most sophisticated financial engineering modelling and products by talented financial architects to enhance profitability. As will be explained in the next section about the external macro factors to AIG's failure, the accuracy of the assumptions behind the models and the triple-A rating were keys to the success of the unit. The innovation and the strength of the CDSs were only as good as the quality of the MBSs and the ability to keep the high rating. As the subprime mortgage market began to buckle, the models collapsed and with them the high rating of AIG. As the CDS contracts called for posting of cash collateral in the case of rating downgrades, the liquidity crunch erupted. In the following section we focus on the external macro factors.

## **Summary:**

### **Key internal (inside) factors to the AIG collapse (not in insurance operations):**

- 1. Dependency on the success of the insurance operations to get high credit ratings**
- 2. Use of regulatory arbitrage to build innovative and unregulated financial products**
- 3. Faulty sophisticated financial models:**
  - a. optimistic ratings assumptions,**
  - b. inaccuracies regarding the quality of underlying bundled securities.**
- 4. CDSs' terms of contracts**
- 5. CDSs' growth**
- 6. Breakdown in internal risk management**
- 7. Deficient internal controls**

### **Internal factors (in insurance operations) caught in the liquidity crisis spiral:**

- 1. Securities lending**
  - 2. Investments in MBSs**
-

## 4. External macro factors: housingboom driven by lenient underwriting of mortgages; bundling of debt instruments; permissive banking/thrift regulation; no derivativeregulations— incentives to the explosion in CDSs

Insurance regulation has a proven track record of having avoided any failure of an insurance company with systemic consequences. AIGFP was not regulated by insurance regulators as shown in Exhibits 1, 3 and 4. AIGFP was a subsidiary of the AIG Holding Company which in turn was supervised by OTS.<sup>47</sup> In fact, AIGFP began operating out of London in 1987 and was regulated by French banking regulators.<sup>48</sup>

The Financial Crisis Inquiry Report (National Commission on the Causes of the Financial and Economic Crisis in the United States, 2011) notes that:

*“The Office of Thrift Supervision has acknowledged failures in its oversight of AIG (holding company)....John Reich, a former OTS director, told the FCIC that... he had “no clue—no idea—what [AIG’s] CDS liability was.... the OTS’s authority to regulate holding companies was intended to ensure the safety and soundness of the FDIC-insured subsidiary of AIG and not to focus on the potential impact on AIG of an uninsured subsidiary like AIG Financial Products.... Finn ignored the OTS’s responsibilities under the European Union’s Financial Conglomerates Directive (FCD)—responsibilities the OTS had actively sought. The directive required foreign companies doing business in Europe to have the equivalent of a “consolidated supervisor” in their home country.....Reich told FCIC staff that he did not understand his agency’s responsibilities under the FCD....The OTS did not look carefully at the credit default swap portfolio guaranteed by the parent company—even though AIG did describe the nature of its super-senior portfolio in its annual reports at that time, including the dollar amount of total credit default swaps that it had written..... In February 2008, AIG reported billions of dollars in losses and material weaknesses in the way it valued credit default swap positions. Yet the OTS did not initiate an in-depth review of the credit default swaps until September 2008—ten days before AIG went to the Fed seeking a rescue....He (Reich) also acknowledged that the OTS had never fully understood the Financial Products unit, and thus couldn’t regulate it.... Reich said that for the OTS to think it could regulate AIG was “totally impractical and unrealistic. . .”*

47 See Harrington (2009), p. 799 “The assertion that AIGFP was unregulated is technically incorrect and appears 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.”

48 Based on AIG 2009 10 K “A total of \$234.4 billion (consisting of corporate loans and prime residential mortgages) in net notional exposure of AIGFP’s super senior credit default swap portfolio as of December 31, 2008 represented derivatives written for financial institutions, principally in Europe, for the purpose of providing regulatory capital relief rather than for arbitrage purposes. These transactions were entered into by Banque AIG, AIGFP’s French regulated bank subsidiary, and written on diversified pools of residential mortgages and corporate loans (made to both large corporations and small to medium sized enterprises). In exchange for a periodic fee, the counterparties receive credit protection with respect to diversified loan portfolios they own, thus reducing their minimum capital requirements.” See at: [http://washingtonoutside.blogspot.com/2010\\_03\\_01\\_archive.html](http://washingtonoutside.blogspot.com/2010_03_01_archive.html)

AIGFP did not have any strong oversight. Since in the U.S. insurers are not permitted to sell CDSs and CDSs were not considered to be insurance (see Stulz, 2010) and therefore were not regulated, there appeared to be a gap in controls over those products and the actions regarding such products by AIGFP. This regulatory gap was clearly used to develop the innovative financial products such as CDSs by AIGFP. The permissive regulatory framework for banks and thrifts, combined with no regulation of derivatives under the “free markets” philosophy (see PBS’ *Frontline* expose;<sup>49</sup> Harrington, 2009<sup>50</sup>; and Levine, 2010<sup>51</sup>) should be regarded as major propelling factors to the expansion of the CDSs market. Since banks could substitute capital by buying CDSs from highly rated institutions, the product took off and AIG was a major player with huge exposure in its AIGFP unit.

The huge CDS exposure of the AIGFP unit was fuelled by the housing boom, subprime mortgages and securitisation activities. “By 2004, Wall Street investment banks were discovering how to turn consumer debt into a money-maker, churning out bond-like securities backed by mortgages and other assets.”<sup>52</sup> CDSs gave the hedging necessary to attract institutional investors to the collateralized debt obligations and mortgage backed securities as can be seen in Exhibits 2 and 3. The ideology that “everyone deserves a home” along with the allowances for greater leveraging, using securitisation, fuelled a spiral of need for loans that would be later bundled. The subprime mortgages that emerged by loaning money to unqualified home buyers penetrated even the highest credit layers of bundled securities. The idea that home prices would continue to escalate and unqualified borrowers would be able to sell their home at a profit when they could no longer pay the higher variable mortgage payments fell apart.

In retrospect, the Federal and Securities & Exchange Commission (SEC) regulators did admit (see PBS’ *Frontline* expose) their major mistake in not regulating the derivatives markets and products. It is unequivocally recognized that this gap in regulation was a key contributor to the financial crisis of 2007-2009.

## Summary:

### Key external macro factors to the AIG collapse

1. **Free markets philosophy of self discipline.**
2. **“Everyone deserves a home” ideology, housing boom with lenient underwriting standards, subprime mortgages.**
3. **Dependency on credit ratings agencies.**
4. **Permissive banking and thrift regulation: Financial products such as CDSs of highly rated institutions serving as substitutes for capital.**
5. **No derivatives (CDSs) regulation: No checks and balances regarding the CDSs markets.**
6. **Growth of the bundling of securities with underlying lax underwriting standards for the borrowers.**
7. **Insurance regulators not allowed in despite of the nature of CDSs contracts as providing some “supposed” security.**

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49 PBS *Frontline* at: <http://www.pbs.org/wgbh/pages/frontline/warning/>

50 See Harrington (2009), p. 800 “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.”

51 Levine (2010, p. 197) studies the following: 1) SEC policies toward credit rating agencies, 2) Federal Reserve policies that allowed banks to reduce their capital cushions through the use of CDSs, 3) SEC and Federal Reserve policies concerning over-the-counter (OTC) derivatives, 4) SEC policies toward the consolidated supervision of major investment banks and 5) government policies toward two housing-finance entities, Fannie Mae and Freddie Mac.

52 O’Harrow Jr. and Dennis (2008).

## **5. AIG inside factors and external macro factors come together: AIGFP unit cannot untangle itself from the CDSs obligations when the housing markets collapse**

While the insurance operations of AIG that generated the high credit ratings were under strong insurance regulatory scrutiny, AIGFP was under the lenient regulatory mechanism described above. In the collision between the internal and external factors, it is key to note that the part of AIG Holding Company that was not under the insurance regulatory mechanism, is the part that led to the demise (see Exhibit 4). The underpinning macro factors (that were not part of AIG insurance) led to creating the CDSs, the risky financial products. Without controls, these non-insurance products under no-insurance structure and regulation led to the demise.

Following is a quick description of how the factors aggravated each other to the point of destruction. In 2005 the AIGFP unit discovered that the credit quality of the debt obligations it secured was much lower than assumed. When it could not reverse the obligations, it aggravated the situation by keeping this information in-house (at the AIGFP unit) without transparency. The internal controls were shot and the unit did not disclose its troubles. As the situation deteriorated, the housing bust led to credit rating downgrades and the spiral of the liquidity crisis erupted.

The set up of the CDSs contract did not provide for gradual cash settlement, but rather required major cash collateral upon a downgrading event. If AIG had added “installments” into the CDSs contract, the gradual needs may have prevented the sudden placement of very large collaterals, as discussed in the Appendix of “what ifs?” But that was not the case.

Thus, the combination of no internal risk management and no external regulatory requirements and controls led to lack of transparency regarding the size of the CDSs exposure. The size of the CDSs exposure was allowed to mushroom. As banks needed more and more CDSs to replace capital which was permitted by lenient banking regulation and more bundling occurred in the MBSs, the CDSs market boomed. The housing market crash led to AIG’s calamity without an apparent way out. AIGFP could not unwind its major exposure and could not stop the downgrades. Each downgrade led to calls for posting cash collateral.<sup>53</sup> The liquidity position of AIG deteriorated fast as the rating agencies continued to downgrade this very large global financial conglomerate. This spiral led to the bailout. On the way, the securities lending activity and the investments in MBSs were caught in the spiral and required more cash as well. This exacerbated the liquidity drain.

Interestingly, in this collision of factors, the story has nothing to do with AIG being an insurer selling insurance products. Without the CDSs, even if the securities lending and the investments in the MBSs had been the only triggers to the enormous problem for AIG, the regular insurance resolution process of insolvencies would not have led to a systemic collapse in need of bailout. The collision of factors had nothing to do with the financial behaviour of insurers, their underwriting and asset allocation activities.<sup>54</sup> CDSs could have been sold by any player with a high credit rating, reputation and standing. The product was apparently sold by other players, but there was

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<sup>53</sup> Note the terminology. The banks did not submit claims on policies as is known in insurance terminology.

<sup>54</sup> For the interested reader, explanation is available in chapter 7 of Baranoff et al. (2009).

no such large exposure and there was more careful treatment.<sup>55</sup> The high credit rating was a prerequisite to such sales and acceptance by banks and their regulators.<sup>56</sup> The AIGFP unit was unique in its use of every regulatory arbitrage as an opportunity and belief in its sophisticated models and its own wisdom to a fault.

### **Summary:**

**Key external macro and activity-related factors come together and lead to AIG collapse**

- 1. Housing market collapsed.**
  - 2. AIG credit rating fell.**
  - 3. Cash collateral calls under the CDSs contracts.**
  - 4. Liquidity crisis pervasive.**
  - 5. No time to raise funds... The Federal Government bails out.**
- 

<sup>55</sup> Prudential Plc of the U.K. owned Egg and sold it to CITI in 2006. Egg sold CDSs and suffered losses in the U.K. due to the housing and credit markets there. See Prudential Plc 2006 10K.

<sup>56</sup> Levine (2010), pp. 196-213.

## 6. Key lessons

The delineation of the factors contributing to the demise of AIG leads us to the following key lessons in the area of systemic risks:

1. If high credit rating is allowed to replace capital, regulators need to understand the systemic implication of such decisions.
  - a. When innovative financial products use the credit rating established by strong insurance operations, regulators need to understand the implication of allowing this high rating to support banks' capital. There needs to be recognition of the danger that the solidity and stability of insurance can provide. Can this solidity be sustained without some macro prudential actions?
  - b. Regulators need to understand fully the merits behind models such as those created by AIGFP to substantiate selling so much CDS exposure.
  - c. Replacement of capital by any other products needs complete transparency and understanding.

2. Regulatory gaps need to be closed to avoid arbitrage.

The absence of derivative regulations was a major factor to the growth in the innovative derivative products.

- i. No posting of liabilities was required.
- ii. There were no "checks and balances," nor understanding.

3. Insurance institutions and their operations should be required to adhere to insurance regulation.

When insurers look into alternative regulatory frameworks, it may indicate a move into non-insurance or quasi-banking products. This may trigger new risks not known to insurance regulators.

4. There should not be confusion between insurance with non-insurance (quasi-banking) activities.

The umbrella of insurance regulation has proven itself to be a source of stability. Insurance by its nature is the antidote to risk—a solution to mitigating risks. It is a propeller of the economy and when it is done under the well-proven success of insurance laws and regulations, it is a source of stability and a reason to "sleep well at night." As such, insurance regulators should not shunned away from product or entities that emulate "insurance" without really being insurance.



### **Key lessons from the AIG failure**

- 1. Understand clearly what caused the AIG failure. It was not an insurance failure under the insurance business model and insurance regulations.**
  - 2. Use credit ratings with care: do not allow exploitation of high ratings**
  - 3. Be aware of banks' capital being replaced with new opaque financial products.**
  - 4. Remove gaps in regulations and require transparency.**
  - 5. Ensure no regulatory choices by businesses.**
  - 6. Understand insurance vs. non-insurance or quasi-banking activities and products.**
  - 7. Create clarity in delineating between the banking and insurance models.**
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## Appendix

In conclusion to this paper, we offer a “what if” scenario analysis by taking out each of the factors to the AIG collapse we identified. We show step by step how the absence of each factor could have stopped the sequence of events that led to the failure of AIG shown in Exhibit 4.

### “What if” for external factors:

*Q: What if banks were not allowed to use alternatives to capital?*

A: CDSs would not have mushroomed.

*Q: What if derivatives were regulated?*

A: The regulator would have requested transparency and examined the situation, putting a stop to the growth.

*Q: What if credit ratings were not a foundation for creating innovative products such as CDSs?*

A: The strength of AIG insurance operation would not have been a propeller for financial engineers to want to be part of AIG and create the AIGFP, a non-insurance unit.

### “What if” for internal factors:

*Q: What if the CDSs contracts were set up differently and called for gradual cash settlement rather than the required major cash collateral upon a downgrading event?*

A: If AIG added instalments into the CDSs contract, the gradual needs would have prevented a sudden placement of very large collaterals. The daily settlements would have triggered the cash limitations and CDSs exposure would have been limited.

*Q: What if the CDSs contracts did not call for cash collateral at all?*

A: AIG would have had a large write down, but not a liquidity crisis. With time, the situation could have reversed itself.

*Q: What if AIG was in trouble because of the securities lending and MBSs (in the insurance operations part of the business), not because of CDSs?*

A: The regular insurance resolution process of insolvencies is slower as noted in The Geneva Association SRI reports (2010a and b). Thus, the distress impact would have been mitigated due to the timing. For policy-holders with no claims, there have always been other insurers ready to pick up the business. For policy-holders with claims, the guarantee funds and the slow claims resolution process would have prevented a domino effect.

### “What if” for internal and external factors combined:

*Q: What if regulators measured “total revenues” less “insurance premium revenues” for AIG, would this measure have triggered special attention?*

A: No. As shown in The Geneva Association SRI report (2010a), p. 17, Exhibit 11, the revenues for the activities of AIGFP were only 3 per cent of total revenues in 2005. The nominal exposure should be a key measure, not revenues.

*Q: What if regulators measured “net investment income related to insurance activities” less total revenues for AIG, would this measure have triggered special attention?*

A: No. This would be part of normal operations.

*Q: What if regulators measured proportion of “technical provisions” in relation to “total liabilities” for AIG, would this measure have triggered special attention?*

A: No. As long as the writer of the CDS is out of the money, he does not have to post a liability. Only when the downgrade trigger occurs, liquidity needs to be available then.

*Q: What if regulators measured size as “total assets, total revenues and gross written premium” and created comparable accounting indicators across countries for AIG, would any of these measures have triggered special attention?*

A: No. None of these measures would have made a difference. However, for size, it would have been useful if the nominal amount the CDSs covered was known, especially in relationship to the capital base of AIG. Size should be designed in relative terms such as exposure compared with equity. Such an indicator would show the ability of the counterparty to absorb losses.

## Glossary

AIG	American International Group
ALM	Asset Liability Management
AIGFP	AIG Financial Products Corp.
CDO	Collateralized Debt Obligation
CDS	Credit Default Swap
CSA	Credit Support Annex
IMF	International Monetary Fund
ISDA	International Swaps and Derivatives Association, Inc.
MBS	Mortgage-backed Security
NAIC	National Association of Insurance Commissioners
OTC	Over The Counter
OTS	Office of Thrift Supervision (U.S.)
SEC	Securities & Exchange Commission (U.S. government)
SIFI	Systemically Important Financial Institution



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*The Geneva Papers on Risk and Insurance—Issues and Practice*

*The Journal of Insurance Regulation*

*The Journal of Risk and Insurance*

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## The Geneva Association

### The Geneva Association:

**a. provides a platform for insurance CEOs:**

The Geneva Association acts as a forum for its members, providing a worldwide unique platform for the top insurance CEOs. It organises the framework for its members to exchange ideas and discuss key strategic issues, especially at the General Assembly where once per year over 50 of the top insurance CEOs gather.

**b. conducts research:**

The Geneva Association investigates the growing importance of worldwide insurance activities in all sectors of the economy. It tries to identify fundamental trends and strategic issues where insurance plays a substantial role or which influence the insurance sector. In parallel, The Geneva Association develops and encourages various initiatives concerning the evolution—in economic and cultural terms—of risk management and the notion of uncertainty in the modern economy.

**c. organises expert networks:**

The Geneva Association organises global networks for experts in various fields linked to insurance: finance, regulation, risk management, pension provision, health, etc. It also manages several extra-company networks of specialists from its members' companies: chief financial officers, chief risk officers, chief investment officers, chief communication officers, the Amsterdam Circle of Chief Economists (ACCE), as well as the Liability Regimes Planning Board with leading underwriters and claims-handlers and the *PROGRES. Net* initiative for chief regulation officers and top regulatory experts in insurance.

**d. maintains dialogue with international institutions:**

The Geneva Association uses its special risk and insurance expertise and in-depth knowledge to raise subjects of relevance to the insurance sector in global forums. The Geneva Association is the leading interface of the insurance industry with relevant international institutions and advocates the role of insurance and its relevance to the modern economy.

**e. publishes leading insurance journals, newsletters, books and monographs:**

- **journals:** *The Geneva Papers on Risk and Insurance Issues and Practice* (4 issues per year) and *The Geneva Risk and Insurance Review* (2 issues per year);
- **special reports:** The Geneva Association reports tackle issues of strategic importance to the insurance industry that warrant special attention and particular analysis;
- **The Geneva Association newsletters**, published usually twice a year, on Insurance and Finance, Risk Management, PROGRES (regulation and supervision), Insurance Economics, Four Pillars (life insurance, pension and retirement), Health and Ageing, General Information and World Fire Statistics;
- **working paper series (Etudes & Dossiers):** conference proceedings, special reports, etc;
- **books and monographs.**

**f. organises conferences and seminars:**

Throughout the year, The Geneva Association organises or supports about 20 conferences and seminars on topics which are of high relevance to the insurance industry, gathering experts from all sectors and backgrounds to combine their knowledge. The events are topics—and issues—oriented and aim at developing new knowledge and insights as well as providing platforms for expert opinion interchange.

***g. stimulates and sponsors research in insurance and risk management:***

The Geneva Association has several ways of stimulating and sponsoring research work in risk management and insurance-related fields through the availability of research grants, scholarships, prizes and support for publishing.

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### **The Financial Stability in Insurance (FSI) Initiative**

The FSI Initiative is composed of insurance and finance experts from Geneva Association member companies as well as The Geneva Association's own Insurance and Finance Research Programme.

The members of the FSI Steering Committee are:

- Aegon: Patricia Plas
- Allianz: Volker Deville
- Aviva: Robin Spencer
- AXA: Jérôme Hamilius
- Met Life: Stanley Talbi
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- Nippon Life: Seiji Kito
- Prudential Financial: Giselle Lim
- Swiss Re: David Cole
- Tokio Marine: Makoto Hori
- Tryg: Martin Bøge Mikkelsen
- Zurich Insurance Company: Axel P. Lehmann
- The Geneva Association: Patrick M. Liedtke

Co-ordination: Daniel Haefeli, Head of Insurance and Finance at The Geneva Association



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## Publications of The Geneva Association

*For a complete list of our publications and how to get them,  
consult our website at [www.genevaassociation.org](http://www.genevaassociation.org)*

### Special Reports—Financial Stability

- *Systemic Risk in Insurance—An analysis of insurance and financial stability*, The Geneva Association, Geneva, March 2010.
- *Key Financial Stability Issues in Insurance—An account of The Geneva Association ongoing dialogue on systemic risk with regulators and policy-makers*, The Geneva Association, Geneva, July 2010.

### The Geneva Reports—Risk and Insurance Research

- No. 3: *Anatomy of the credit crisis—An insurance reader from The Geneva Association*, edited by Patrick M. Liedtke, January 2010
- No. 2: *The insurance industry and climate change—Contribution to the global debate*, by The Geneva Association, July 2009
- No.1: *Regulation and intervention in the insurance industry—fundamental issues*, by E. Baltensperger, P. Buomberger, A.A. Iuppa, B. Keller and A. Wicki, February 2008

### Newsletters (also available as e-newsletters)

- **Insurance and Finance** deals with research activities in the fields of finance where they are relevant to the insurance and risk management sector.
  - *Insurance and Finance 7*, February 2011
  - *Special Issue on G-20 London Summit*, April 2009

#### **Insurance and Finance special contributions:**

- **SC10** *Variable Annuities with Guarantees and Use of Hedging*, March 2011
  - **SC9** *The Global Financial Crisis and the Insurance Industry—Frequently Asked Questions*, by Patrick M. Liedtke and Kai-Uwe Schanz
  - **SC8** *Parallax: Striving for a More Resilient International Financial Architecture*, by Patrick M. Liedtke
  - **SC7** *The Geneva Association Letter to the Finance Ministers and Central Bank Governors of the G-20*, 5 November 2009
  - **SC6** *Everything you wanted to know about the crisis ...but were afraid to ask*, by Denis Kessler
  - **SC5** *G20 Falls Short on Insurance*, by Patrick M. Liedtke, published in the *Financial Times*, 7 April 2009
  - **SC4** *Insurance Comments to the G-20 London Summit Leaders' Statement of 2 April 2009*, by Patrick M. Liedtke, 6 April 2009
  - **SC3** *Lessons from the Credit Crisis: An Investment Practitioner's Point of View*, by Guido Fürer and Jérôme Haegeli, 20 February 2009
  - **SC2** *The Credit Crisis and the Insurance Industry—10 Frequently Asked Questions*, November 2008
  - **SC1** *Credit Crisis and Insurance—A Comment on the Role of the Industry*, by Patrick M. Liedtke, November 2008
- **PROGRES** contributes to the exchange of information on studies and initiatives aimed at better understanding the challenges in the fields of insurance regulation, supervision as well as other legal aspects.

- **Risk Management** summarises The Geneva Association's initiatives in the field of risk management and is open to contributions from any institution or company wishing to exchange information.
- **Insurance Economics** which serves as an information and liaison bulletin to promote contacts between economists at universities and in insurance and financial services companies with an interest in risk and insurance economics.
- **Four Pillars** provides information on research and publications in the field of social security, insurance, savings and employment.
- **Health and Ageing** brings together facts and figures linked to health issues for people aged 50-80 and productive ageing, to try to find solutions for the future financing of health.
- **World Fire Statistics.**
- **General Information.**

## Journals

(published by Palgrave Macmillan for The Geneva Association)

- **The Geneva Papers on Risk and Insurance—Issues and Practice**  
This prestigious journal, published quarterly, leads its field, publishing papers which both improve the scientific knowledge of the insurance industry and stimulate constructive dialogue between the industry and its economic and social partners.
- **The Geneva Risk and Insurance Review** is an international journal published in annual volumes of two issues. Its purpose is to support and encourage research in the economics of risk, uncertainty, insurance and related institutions by providing a forum for the scholarly exchange of findings and opinions.

## Working Papers “Etudes et Dossiers”

These working documents present intermediary or final results of conference proceedings, special reports and research done by The Geneva Association and its partners. Among the last issues:

- *6th Chief Risk Officer Assembly, A vision for risk management in the “new normal”, No. 370, March 2011*
- *World Risk and Insurance Economics Congress, No. 369, February 2011*
- *7th Geneva Association Health & Ageing Conference, U.S. and French Long-Term Care Insurance Markets Development, No. 368, January 2011*
- *7th International Liability Regimes Conference of The Geneva Association and 12th Meeting on The Geneva Association's Amsterdam Circle of Chief Economists, No. 367, January 2011*
- *The 2nd Climate Change and Insurance (CC + I) Seminar, Climate Change: Opportunities for Latin American Insurers?, No. 366, December 2010*
- *5th Chief Risk Officer Assembly, Navigating the storm. Risk management during an economic crisis, No. 365, November 2010*
- *M.O.R.E. 24 Seminar, Modelling and Mapping Risks (MMR), No. 364, October 2010*
- *10th CEO Insurance Summit in Asia, No. 363, August 2010*
- *6th Insurance and Finance Seminar of The Geneva Association, No. 362, August 2010*
- *The 8th ART of CROS, Annual Round Table of Chief Risk Officers, No. 361, June 2010*
- *26th PROGRES International Seminar, Global Regulatory and Supervisory Repair: Aligning National Interests and International Necessities, No. 360, May 2010*
- *13th Joint Seminar of the European Association of Law and Economics (EALE) and The Geneva Association, Insuring Corporate Liability Risks, No. 359, April 2010*
- *Sessions organised by The Geneva Association and Silver Workers Institute at the XIXth IAGG World Congress of Gerontology and Geriatrics, & World Ageing & Generations Congress, No. 358, February 2010*
- *6th Geneva Association Health and Ageing Conference, No. 357, January 2010*
- *M.O.R.E. 23/1st CC+I—Seminar of The Geneva Association and XXXII Hemispheric Insurance Conference FIDES 2009 (Selection), No. 356, January 2010*