

Capital Convergence and opportunities for positive social application of insurance solutions

Thesis

This paper will attempt to explore, at a high level and drawing on a range of published sources, the convergence of various components of the financial system from an insurance perspective and identify opportunities for the insurance industry to “Do well as well as Do good”. Key aspects of the paper will include:

- A high level review of the capital convergence and influx and the various strategies being investigated to manage and distribute said capital including but not limited to
 - o Hybrid risk underwriters and asset managers
 - o Super “sidecar” structures
 - o ILS and associated structures
- Review and comment on examples of insurance solutions proactively influencing and benefiting public policy and social engagement (“Do Well & Do Good”)

Introduction

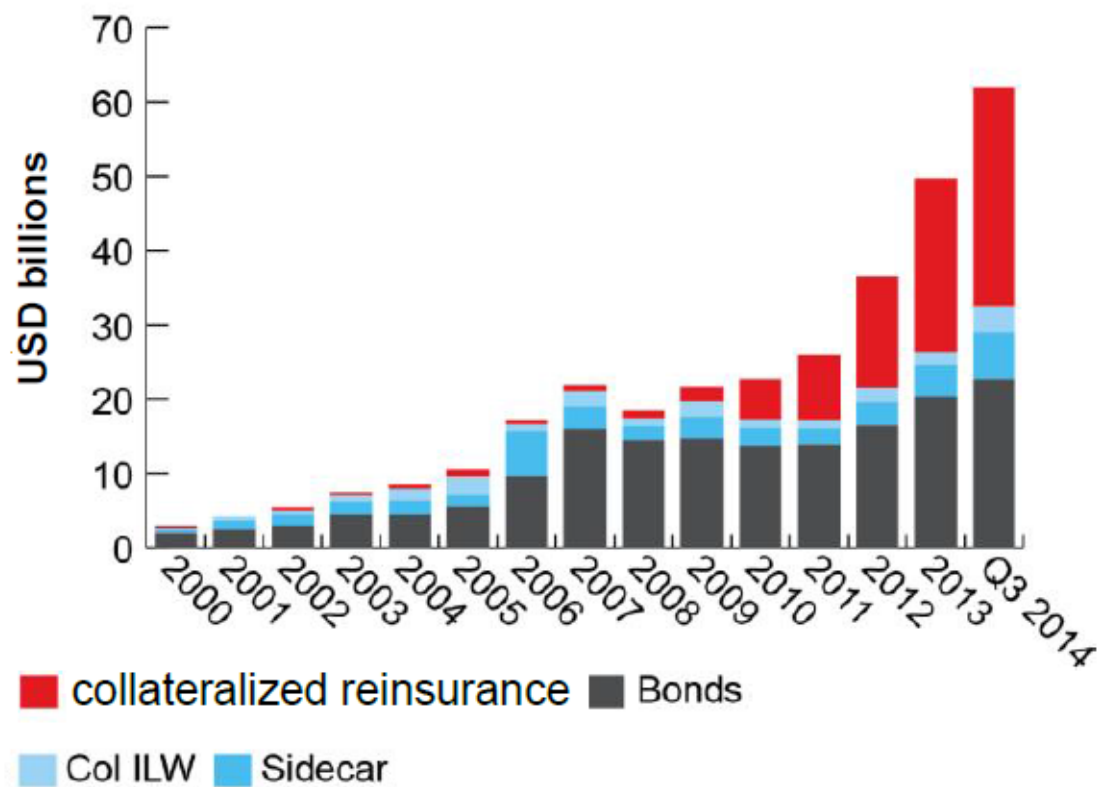
With the accelerating pace and adoption of change, a number of emerging, or existing, concepts, particularly those combined with technology and data analytics, have the potential to significantly disrupt the traditional business models across financial services. Although these changes have the potential to negatively impact profitability and market share, they also represent an enormous opportunity for financial institutions that are adaptive. A competitive advantage exists for those financial institutions that can identify, adopt and/or adapt to truly game-changing models, with the potential of rendering successful businesses more nimble, competitive and efficient.

Combining that open mindset with an ability to identify and engage with new capital sources can accelerate the ability of a firm to demonstrate clear differentiation and separation from the pack. Demonstrating that growth in new capital sources Aon Benfield estimates that global reinsurer capital alone totalled USD575 billion at the end of 2014, an increase of 6% over the course of the year. This calculation is a broad measure of capital available for insurers to trade risk with and includes both traditional and alternative forms of reinsurer capital.

Traditional capital rose by 4% to USD511 billion. Major insurers and reinsurers generally maintained their solid operating performance during 2014, aided by below average insured catastrophe losses, economic recovery in the United States, exposure growth in emerging markets and relatively stable capital market conditions. Retained earnings were bolstered by unrealized gains on bond portfolios, driven in particular by lower yields in the eurozone, providing a boost to reported capital positions.

Alternative capital continued its strong growth, rising by 28% to USD64 billion in 2014 (see chart below). This was reflected in record levels of catastrophe bond issuance, expansion of fully collateralized placements, the establishment of new sidecar vehicles and the exploration of alternative business models by hedge fund managers.

Bond and collateralized market development



Source: Aon Benfield Securities, Inc.

Capital Convergence

1) Hybrid risk u/w and asset managers

The announcements of recent months include the proposed launch by industry heavyweight Matt Fairfiled of Exin. Exin will seek to make use of a mix of traditional and alternative capital. This comes as other new vehicles are looking to use capital markets investors in innovative structures including for example ABR Re which will act as sidecar reinsurer for Ace, using assets managed by BlackRock. Separately, late in 2014, former Lancashire CEO Richard Brindle unveiled his latest venture Fidelis, which aims to match the investment strategy and income more closely with underwriting cycles and liabilities.

Brindle is seeking to raise \$2bn for the hybrid re/insurer and is likely to secure support from a range of sources including Crestview Partners, Pine Brook and Oaktree which are expected to buy a quarter of Fidelis's common equity. Seeking to distinguish itself as a company that can profit when prices for commercial or specialty coverage are high while increasing its focus on investing in other periods. The company is also highlighting its flexibility to pick who will oversee its investments, in comparison with rivals set up by hedge fund managers like Dan Loeb or David Einhorn. The operation can "capitalize on opportunities that neither the traditional insurance model nor the hedge fund reinsurance model effectively capture," according to the document. Fidelis, working with Goldman Sachs to select investing strategies, has the "ability to dynamically adjust hedge fund allocations" and remove or add managers. The company believes it may have the opportunity to recruit industry veterans who are displaced by consolidation.

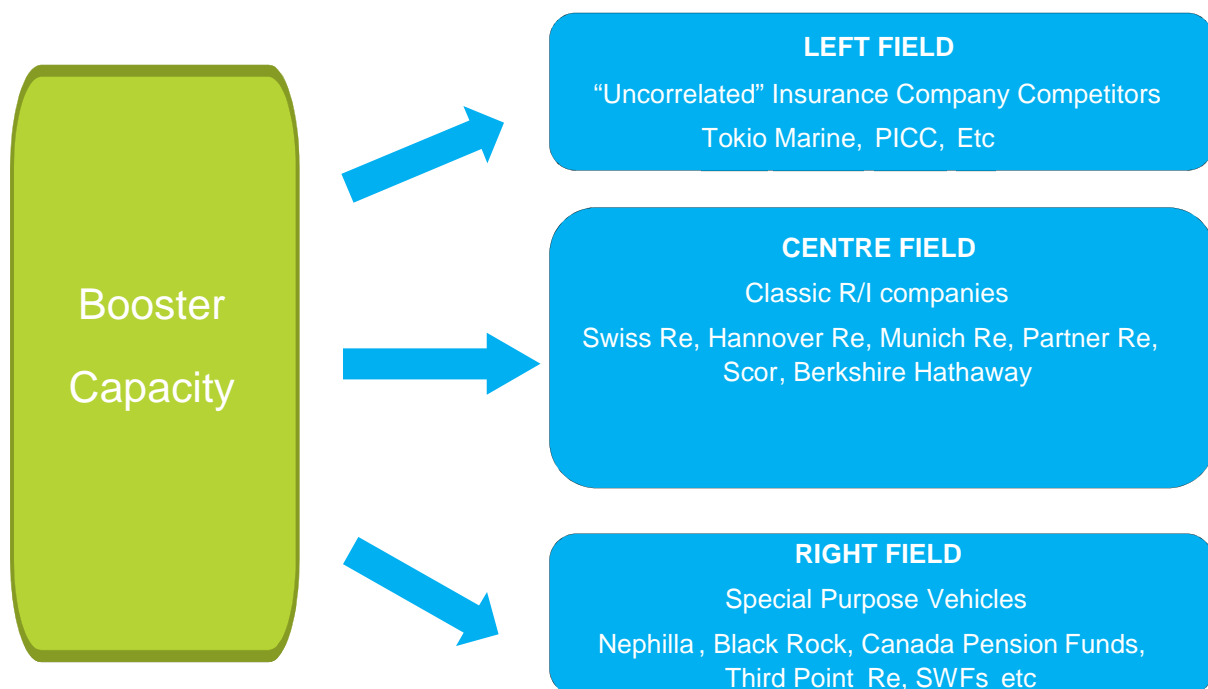
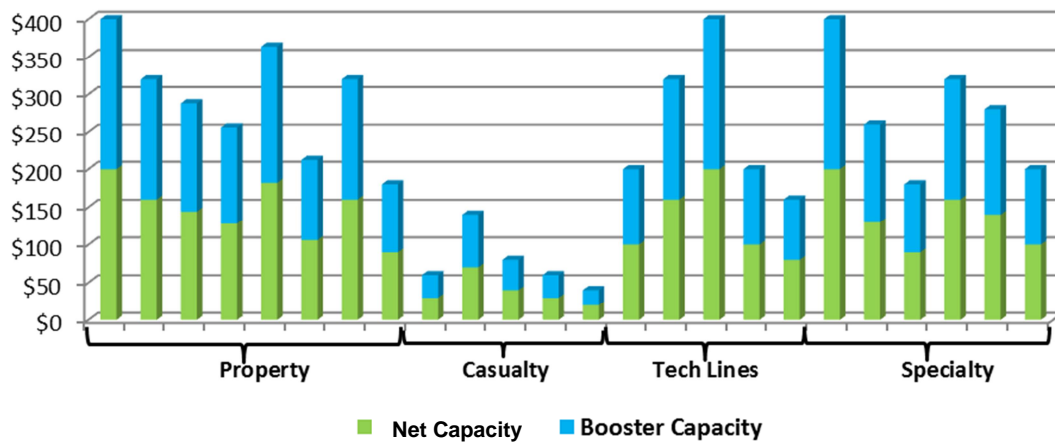
Additionally PIMCO stated in January 2015 that they believe P&C insurance and reinsurance companies may benefit from adjusting their capital deployment tactically throughout renewal season, and indeed beyond. Although these companies' primary business is not asset management, asset gains remain absolutely core to profitability. As such, P&C insurers and reinsurers should not accept current low yields as an excuse not to "sweat" their assets better on behalf of their shareholders.

PIMCO further said "In our view, P&C insurers and reinsurers often miss an opportunity as they do not generally think of their asset portfolio as a balancing item in their tactical deployment of capital. As recent industry conferences in Monte Carlo, Monaco, and Baden-Baden, Germany, conclude, the Chief Underwriting Officer should have a clear perspective on the amount of P&C capital needed. In turn, we believe that a Chief Investment Officer ought to provide a clear strategy on how to tactically redeploy any excess P&C capital." From PIMCO's perspective, it would seem like the right time for the P&C industry to redeploy capital by taking more asset-side risk, rather than write underpriced liability-side risk. Most redeployments of capital within the P&C insurance and reinsurance space tend to be driven by a change of business lines, which in turn tends to call for broad business decisions requiring years of re-allocation of resources, personnel, client bases and systems. Conversely, asset-side shifts can be implemented and reversed almost immediately by buying and selling higher risk/higher capital charge positions. Crucially, such a change in risk assets can usually be implemented within days of a liability repricing event.

2) Booster / Super sidecars

The Booster concept ("single line surplus") offers interested parties the ability to sit behind a recognised insurer in their distribution, risk selection, risk underwriting, claims servicing, data

capturing, brand and rating capabilities and deliver efficient profit streams to all parties whilst recognising the respective parties contribution to the creation of that profit.



3) ILS

Insurance-linked securities, or ILS, are financial instruments which are sold to investors whose value is affected by an insured loss event. As such the term insurance-linked security encompasses catastrophe bonds and other forms of risk-linked securitization. Insurance-linked securities are generally thought to have little to no correlation with the wider financial markets as their value is linked to non-financial risks such as natural disasters, longevity risk or life insurance mortality. As securities, insurance-linked securities can be and are traded among investors and on the secondary-market. They allow insurers to offload risk and raise capital, they also allow life insurers to release the value in their policies by packaging them up and issuing them as asset-backed notes.

Catastrophe bonds, also called cat bonds, are an example of insurance securitization to create risk-linked securities which transfer a specific set of risks (generally catastrophe and natural disaster risks) from an issuer or sponsor to investors. In this way investors take on the risks of a specified catastrophe or event occurring in return for attractive rates of investment. Should a qualifying

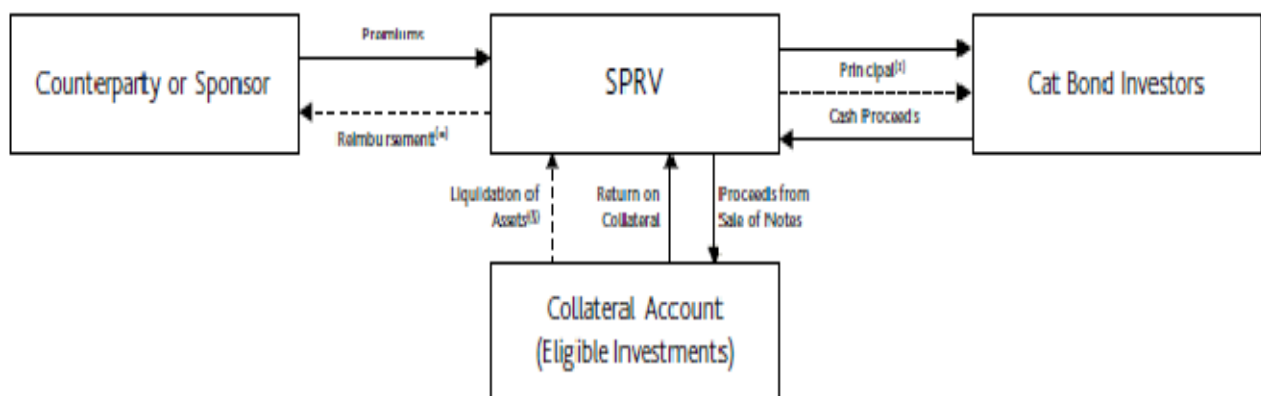
catastrophe or event occur the investors will lose the principal they invested and the issuer (often insurance or reinsurance companies) will receive that money to cover their losses.

Catastrophe bonds were first issued in the mid 1990's, with a comprehensive database available containing the details of nearly every (over 280) catastrophe bond transaction since. Major catastrophe events which hit the U.S. such as the Northridge earthquake and Hurricane Andrew were seen as events of such magnitude that the insurance industry began to look for alternative methods to hedge their risks and through collaboration with capital markets companies catastrophe bonds were born. One of the key elements of any catastrophe bond is the terms under which the securities begin to experience a loss. Catastrophe bonds utilise triggers with defined parameters which have to be met to start accumulating losses. Only when these specific conditions are met do investors begin to lose their investment. Triggers can be structured in many ways from a sliding scale of actual losses experienced by the issuer (indemnity) to a trigger which is activated when industry wide losses from an event hit a certain point (industry loss trigger) to an index of weather or disaster conditions which means actual catastrophe conditions above a certain severity trigger a loss (parametric index trigger).

A catastrophe bond can be structured to provide per-occurrence cover, so exposure to a single major loss event, or to provide aggregate cover, exposure to multiple events over the course of each annual risk-period. Some catastrophe bond transactions work on a multiple loss approach and so are only triggered (or portions of the deals are) by second and subsequent events. This means that sponsors can issue a deal that will only be triggered by a second landfalling hurricane to hit a certain geographical location, for example. The typical catastrophe bond structure sees a special purpose vehicle or insurer (SPV or SPI) enter into a reinsurance agreement with a sponsor (or counterparty), receiving premiums from the sponsor in exchange for providing the coverage via the issued securities. The SPV issues the securities to investors and receives principal amounts in return. The principal is then deposited into a collateral account, where they are typically invested in highly rated money market funds.

The investors coupon, or interest payments, are made up of interest the SPV makes from the collateral and the premiums the sponsor pays. If a qualifying event occurs which meets the trigger conditions to activate a payout, the SPV will liquidate collateral required to make the payment and reimburse the counterparty according to the terms of the catastrophe bond transaction. If no trigger event occurs then the collateral is liquidated at the end of the cat bond term and investors are repaid.

The diagram below shows a typical catastrophe bond structure including where the capital flows from one party to another.



(4) Event Contingent

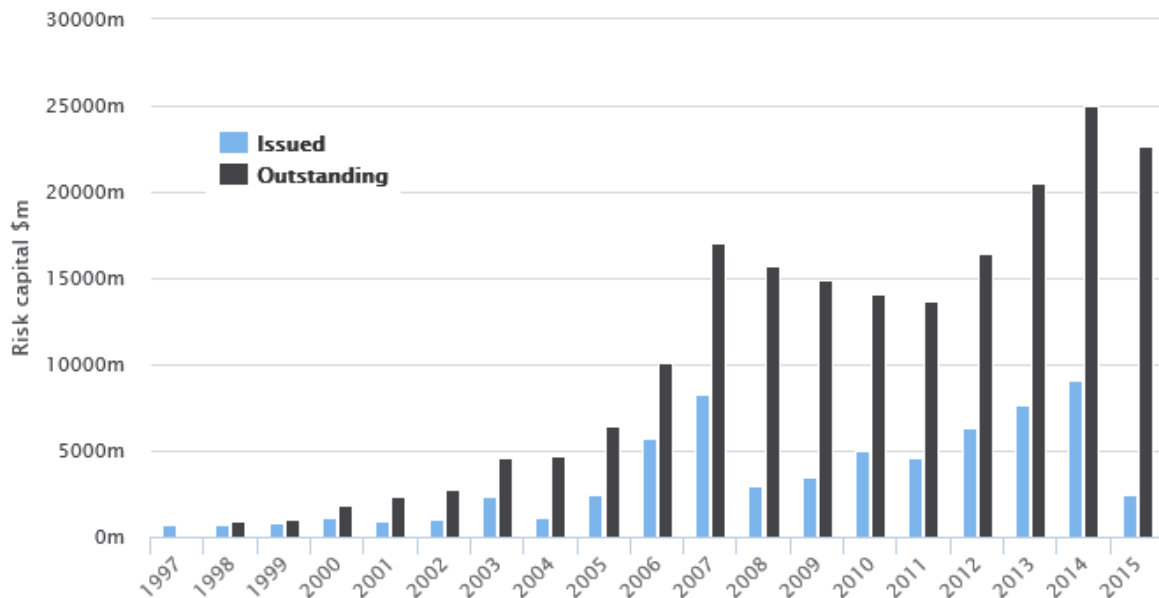
(5) At maturity

(6) Event contingent or at maturity

Source: Moody's Investors Service

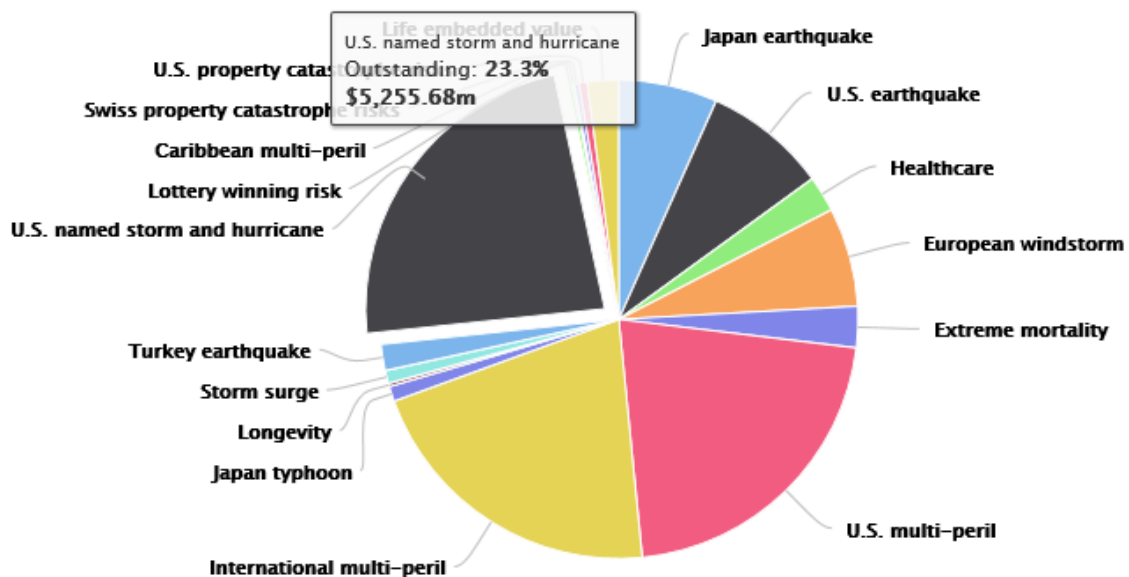
Catastrophe modelling is vital to catastrophe bond transactions to provide analysis and measurement of events which could cause a loss as well as to define the exposed geographical region. Catastrophe bond structures have been used to hedge risks of hurricane, earthquake, typhoon, European windstorm, thunderstorm, hail and even life insurance related risks such as longevity and health insurance claims.

Catastrophe bond & ILS risk capital issued & outstanding by year



Source: www.Artemis.bm Deal Directory

Catastrophe bonds & ILS risk capital outstanding by risk or peril



Source: www.Artemis.bm Deal Directory

Summary

The above categories amply demonstrate the evolving status of the insurance industry and clearly demonstrate the continuing availability of capital to the sector. With that growth in capital comes opportunities, and indeed commercial, moral and societal requirements for the insurance industry to seek other ways to put that capital to work.

Do Well & Do Good

Introduction

The explosion in capital available to the insurance industry has, in large part, led to the rapid growth in alternative approaches some of which are detailed in the first part of this paper. This evolution can enable the industry to apply its solution delivery capabilities in a broader capacity than simply for pure commercial gain. In addition the fact that in recent years, the financial services industry more broadly and to some extent the insurance industry has come under increased public scrutiny, in particular for its role in contributing to the financial crisis, and in light of on-going scandals should encourage that broader thinking.

The resulting deterioration of public confidence has led many to question the role of financial services in society. Building on a multi-year effort, led by chief executives and senior managers of financial institutions, regulators, economists, academics and civil society representatives to restore trust in the financial system, questions remain on a number of critical issues, including: improving conduct within the industry, managing trade-offs between innovation and safety, and supporting credit growth without creating asset bubbles.

In parallel to that the global insurance sector has become increasingly engaged with UN related climate processes. In 2014, the level of practical cooperation and coordination accelerated significantly with high profile events and contributions to support emerging 2015 outcomes and a deepening set of collaborations and relationships.

These developments have produced real momentum and an active dialogue on the role of insurance to support each of the major UN 2015 processes including:

- the renewal of the Hyogo Framework for Disaster Risk Reduction (March);
- the International Conference on Financing for Development (July)
- the updated Sustainable Development Goals (September);
- the UNFCCC Conference of the Parties (COP) Paris (December);
- the UN World Humanitarian Summit in 2016.

While each are distinct, they share an interest in the potential role of insurance and a desire to identify areas where insurance can support optimal outcomes individually and collectively.

This approach is being adopted more broadly across the government and NGO sector as catastrophic droughts, floods and heatwaves increase with climate change is making environmental disasters increasingly common. In Germany Environment Minister Barbara Hendricks wants the G7 to see insurance policies as an alternative to traditional development aid (see Africa Risk Pool case study later in this paper).

2015 is a fateful year for the international community's development and climate goals. In September, the United Nations will agree on the new Sustainable Development Goals (SDGs) and in December, delegates at the Paris climate conference will attempt to reach a binding agreement to limit greenhouse gas emissions post-2020, and keep global warming below the critical limit of +2°C.

But as the World Bank has warned for some time, even if governments manage to cut emissions quickly, some of the effects of climate change cannot be stopped. Sea levels will continue to rise over the coming centuries, and further global temperature increases will bring more heatwaves and climate disruption. The effects of climate change will hit the world's poorest populations hardest. For years, the international community has discussed possible solutions for insuring developing countries against the rising risks.

Supporters of the idea say such insurance policies present a sustainable alternative to traditional aid funds, as they would shift the emphasis from cleaning up after natural disasters, towards preventing them from occurring. Barbara Hendricks plans to use Germany's G7 presidency to pave the way for the entry of climate change insurance into mainstream environmental and development policy, and climate protection is high on the agenda for the June G7 summit in Ellmau, Bavaria. In April 2015 the Environment Ministry published a paper proposing that the seven leading industrialised countries contribute by ensuring that more people in vulnerable developing countries are insured against the risks of climate change. Their aim should be to double or treble the number of people insured. Barbara Hendricks hopes to implement pilot projects with the participation of the World Bank, building on existing regional insurance systems, and using private and public funds to generate the premiums needed. The Ministry has revealed that the German reinsurance company Munich Re is also involved in the project. The concept of insuring developing and emerging countries against the risks of climate change in itself is nothing new, and has been the subject of discussion for some time.

The 2007 Bali Action Plan called for the development of "risk management and risk reduction strategies, including risk sharing and transfer mechanisms such as insurance" to cover losses and damage in developing countries particularly affected by climate change. The signatories of the UN Framework Convention on Climate Change (UNFCCC) explicitly agreed in Cancún to promote insurance and other strategies to limit the impact of environmental disasters. A report by the Potsdam Institute for Climate Impact Research (PIK), published by the World Bank last year, showed just how urgent the need is to implement preventative measures. The report warned of the devastating consequences of global warming for the populations of the world's poorest regions. According to the researchers, the effects of global warming will be felt most keenly in the tropics. The report also highlighted the increasing threat posed by climate change to the development process and said it could "undermine the fight against extreme poverty". Hans Joachim Schnellhuber from the PIK said that the effects of global warming over the coming decades would probably "affect above all those that have contributed the least to the increase in greenhouse gas emissions: the poor".

The UN & The Insurance Industry

Rowan Douglas, of the Willis Science & Policy Practice believes that In 2014, building upon previous interactions and relationships, there were a series of notable developments in the relationship between the UN and the Insurance Industry. In summary:

- Hyogo Framework for Action on Disaster Risk Reduction (HFA)

Insurers have been engaged with the UNISDR and the HFA for some years and this deepened considerably in 2014 with active participation in HFA2 (the renewal of the framework from 2015 onwards) preparatory consultation and processes world-wide. A major summit in London in June 2014, organised by Willis and the International Insurance Society, on the Hyogo Framework propelled further engagement within the formal HFA preparatory processes in Geneva as well as

insurance driven DRR initiatives around financial regulation, resilience standards and investment and increasing access and penetration of natural disaster insurance. Looking ahead, the insurance sector is likely to play a significant part at the Third World Conference on DRR and the renewal of the HFA in Sendai in March this year and subsequent activities.

- **UN Climate Summit, Sept 2014**

Through preparatory engagement throughout 2014, the insurance sector emerged as a significant contributor to the Climate Summit arranged to support and propel progress towards the COP in Paris and other climate related developments 2015. Through two of its major bodies, the IIS and ICMIF, industry leaders made significant contributions and commitments around climate smart investment; risk evaluation, modelling and mapping; innovations in accounting and financial regulation and increasing allocation of natural disaster insurance capacity to exposed populations, including those in high risk developing countries. Follow up to the Summit commitments and initiatives has led to a regular interaction between the insurance sector and senior personnel across the UN system. The sector is also engaged with a wide range of leading stakeholders, national and regional governments, participants and sub-processes involved in the lead up to Paris.

- **Sustainable Development Goals & Financing for Development**

Following the wider progress and visibility at the Climate Summit, there has been a dialogue between UN and insurance personnel on the potential role of the insurance sector to support the emerging Sustainable Development Goals within the finance track and more widely.

- **2016 World Humanitarian Summit.**

More recently members of the industry have become involved with the secretariat and others involved with the preparation of the series of meetings comprising the World Humanitarian Summit (WHS) in 2016. Discussions are at a very early stage but, as leaders of the WHS related community identify challenges in developing a system to ensure an optimal response to future humanitarian emergencies, it appears there may be principles and structures operating across the global insurance sector that may help the humanitarian community understand how necessary contingent resources could be available to affected communities in a more secure and predictable manner.

This following content, previously authored by Rowan Douglas of Willis Capital , Policy and Science practice provides a brief overview to illustrate how the UN system and related institutions may further engage with the insurance sector effectively and efficiently.

- **Observation on General Roles and Capabilities of the Insurance Sector in relation to 2015 Processes**

The insurance system undertakes functions and creates facilities that have relevance across the 2015/2016 agenda. These functions are expressed through standards and utilities that may offer the potential for coherent threads of integration across the various 2015 / 2016 processes and help foster commonly desired outcomes.

The functions derive from the role of insurance to enable society to come together, understand and manage their risk to enable them to fulfil their potential. These fall into five major groups around the core roles of a) Managing and Underwriting Risk and b) Investment, usually medium to long term, either for their own funds or on behalf of third parties as asset managers.

- **Understanding Risk**

This represents the function of translating knowledge and employing scientific and quantitative methods to identify, measure, integrate and assess risks. It encompasses an analysis of hazards,

exposures and human behaviours. To achieve this, insurance needs to employ standards of classification, mapping, metrics, statistical methods and translation into financial or other outputs.

In recent years, insurers have updated these principles through the adoption of new analytical techniques, data requirements and platforms to assess risk - especially in areas of climate and natural disaster risk analysis. As a consequence, they have become the pre-eminent gearbox for translating science and engineering information on these risks into tractable information that can inform policy making and financial decisions.

- **Managing Risk**

From an understanding of risk, the insurance industry then manages it at the individual or societal level. In coordination with consumers and policy makers, it sets parameters for tolerable levels of risk and sets codes for resilience and standards of behaviours. Building codes, zoning laws, fire departments and safety related practices were driven and enforced by the insurance sector, creating conditions for access to the shared pool of community capital. Without these standards, risk would be unmanaged and the capital to support insurance unsustainable.

This role has represented a major role of insurance across sectors, geographies and generations. Here, insurance, such as with urban fire, has acted in a similar way to the impact of mass sanitation was to public health: creating the environment to reduce the level of risk

- **Risk Pricing, Sharing and Transfer**

For the risk that cannot be reduced, the insurance system communicates the level of residual risk through the price system and also conveys when a risk may remain so high (at an individual or societal level) that it is uninsurable.

Thereafter, risk is shared between the individual or entity concerned and wider society via a range of mechanisms. The key is that this sharing of risk enables individuals, institutions and communities to achieve sufficient resilience to liberate resources to be put to effective use rather than being held back for self-security.

- **Long term investment**

The insurance sector manages around \$35 trillion of financial assets - the collected premiums (or taxes) to serve the needs of pension holders, health insurance customers or homes and business with protection from climate and natural disaster risks. The nature of these reserves is that they are often held for a long time, with maturities expected to match the eventual needs of customers which could lie decades away.

These factors: the magnitude, scale and nature of insurance reserves is a significant and distinct source of funds for development investment married to institutions with an acute understanding of climate related risks and resilience.

- **Public Policy Agent & Vector**

Insurance systems represent a key instrument and integrating force for public policy and the creation of national and regional institutions and even national identity. As one example, in the UK the word 'insurance' is in the title of some of our most defining acts of legislation in the 19th and 20th Centuries. Many government activities and institutions can be seen through the prism of sharing risk between populations.

Insurance also acts to foster a range of related institutions: from fire departments to financial regulatory systems and health care facilities that provide significant public goods and outcomes beyond the provision of insurance payments. In this manner, insurance is a key transmission system or 'gearbox' integrating and balancing the forces of science, capital and policy in a constantly

updating equilibrium with an aim of achieving resilience and sustainability. This brings significant potential within and across the 2015/2016 processes.

- **National & Regional Catastrophe Insurance Facilities**

In recent years catastrophe risk financing facilities operating at a multi-sovereign level, often within developing markets, have received widespread attention. Leading and high profile examples including the Caribbean Catastrophe Risk & Insurance Facility (CCRIF) and the Africa Risk Capacity (ARC) programmes which support sovereign level risk, via pooled multi-state facilities against defined levels of natural hazard event using modern parametric and index based coverages. Similar schemes are under consideration in Asia, the Pacific and elsewhere. Meanwhile, national level publically arranged natural disaster facilities have been developed for decades including the New Zealand Earthquake Commission (EQC) the US National Flood Insurance Programme (1968); the Turkish Catastrophe Insurance Programme (2001) and many others. Meanwhile, agricultural insurance against climate risk is usually supported by public sector finance in most countries. There is a particular focus on public-private (and mutual) cooperation to build upon this heritage to support wider coverage for populations against natural disaster risk, especially vulnerable and poor communities and across developing and emerging countries. This is an area of significant opportunity but where better public-private coordination is required to ensure that promising words move forward to tangible facilities.

Coupled to this area is the widening and deepening of access to micro-insurance to protect individuals and families against the direct and indirect consequences of climate risks and natural hazards. There are examples of these facilities emerging at scale, hundreds of thousands of families were supported by payments from micro-insurance policies after Typhoon Haiyan in 2013 but there is scope for significant growth within the context of wider micro-finance and related communications and distribution advances.

The Insurance Industry & the Post 2015 UN Agenda

Rowan Douglas of Willis has further identified a number of specific opportunities and priorities around each UN Process including HFA 2. The engagement of the sector within the imminent renewal of the HFA is significant with significant opportunities for insurance sector support across the mainstream roles and functions of insurance across disaster risk reduction and the renewal of HFA - as the first major event in 2015 - provides an opportunity to introduce these concepts and mechanisms to inform the later processes. These include :

Risk Modelling, Mapping & Metrics with the applications of insurance related metrics, platforms and facilities to enable communities to gain a much clearer understanding of risk in ways that can then be applied practically in construction, finance and wider public policy, including safe schools and hospitals, urban planning and agricultural risk and resilient supply chain across industrial and rural economies. This is being prepared following the announcement by the insurance industry at the UN Climate Summit of a Resilience Modelling and Mapping Forum to make these capabilities more widely available.

Disaster Insurance Coverage. There is a growing appetite for disaster insurance penetration to protect exposed communities, from micro-insurance for farmers through to multinational, sovereign and regional protections schemes (see African Risk Pool case study below). The data, underwriting capacity and finances are increasingly available to undertake valuable facilities but too often these

promising opportunities do not come through. We need to redouble our efforts to achieve more progress in this area (see below) and seek some level of accountability under the reporting processes of the Hyogo Framework for Action.

Investment. The UN Climate Summit also catalysed the announcement of the Climate Smart Investment Framework and related increases in future allocations accountable under HFA reporting. The role of insurance investment in leading the creation of resilient cities and infrastructure is a significant opportunity.

Financial Regulation: The final area of focus is using techniques pioneered in the insurance sector to incorporate climate and natural disaster risks into wider financial regulation, accounting standards and credit ratings. Until these risks are incorporated, accurately and proportionately, into mainstream economic and financial decision making it is unlikely that underlying risk creation will be significantly reduced.

At present, the insurance sector is contributing significantly to the preparations for the renewal of HFA-2 at the World Conference in Sendai and is preparing for an active role as a de facto 'Actor' within Hyogo Framework Activities post 2015.

There is a growing recognition that the insurance sector could play a significant role in strengthening and revitalising the global partnership for sustainable development through a coordinated set of contributions across Finance, Technology, Capacity Building, Trade and Systematic Issues including policy and institutional coherence, multi-stakeholders partnerships and data, monitoring and accountability.

Case Study – Africa Risk Pool

Agricultural production in many parts of Africa is affected by natural climate variability and is likely to be significantly compromised by climate change through the higher incidence of drought, erratic rainfall and damaging high temperatures.

Drought accounted for an average 36% of all aid responses between 2002 and 2009. In 2009, the World Food Programme (“WFP”) assisted 53 million people in sub-Saharan Africa, spending US \$2.5 billion – 63% of WFP’s global expenditure that year. By comparison, the Consolidated and Flash Appeal for 2009, which covered all sectors, required over US \$6 billion for Africa, of which approximately US\$ 4.5 billion was received.

Analysis by the African Risk Capacity (“ARC”) suggests that a widespread catastrophic drought in sub-Saharan Africa today could cost upwards of US \$3 billion in emergency assistance, which would put an unprecedented financial strain on African countries and donor countries’ aid budgets.

As currently structured, the system for responding to natural disasters is not as timely or equitable as it should, or could be, with much of the cost borne by farmers. International assistance through the appeals system is secured on a largely ad hoc basis after disaster strikes, and governments are forced to reallocate funds in national budgets from essential development activities to crisis response. Only then can relief be mobilised toward the people who need it most – and it is often too late. Lives are lost, assets are depleted, and development gains reversed – forcing more people into chronic hunger, malnutrition and destitution across the continent.

Contingent funds linked to early warning systems and appropriate contingency plans linked with credible national response mechanisms offer the best solution for delivering more effective and efficient responses to weather shocks in the short term and can facilitate longer-term investments in increasing food security, disaster risk reduction and climate resilience. By shifting away from the old paradigm of treating the effects after a crisis occurs, Africa can move towards effectively managing its risks. Managing risks is more economical, more efficient, and saves more lives and livelihoods. The aim of ARC is to catalyse a better risk management system for Africa and provide the capacity building support required to implement such a system.

To facilitate discussions on how ARC works to benefit Member States, ARC partnered with leading game designers, Pablo Suarez and Janot Mendler de Suarez, to create a drought risk management scenario game. The purpose of the game was to catalyse discussion with senior African government officials on the cost effectiveness and impact of the African Risk Capacity (ARC), and create a dynamic and engaging environment through which government officials can evaluate the spectrum of choices related to managing drought risk.

- How it Works

ARC is composed of two entities: the Specialized Agency and a financial affiliate, ARC Insurance Company Limited (the Company). The Agency is a cooperative mechanism providing general oversight and supervising development of ARC capacity and services; providing capacity building to individual countries; approving contingency plans and monitoring their implementation. The Company is the financial affiliate that carries out commercial insurance functions of risk pooling and risk transfer in accordance with national regulations for parametric weather insurance in Bermuda (where it is located until such time that an equally favourable legal and regulatory regime exists in an AU Member State – See Article 11 of the Establishment Agreement).

As an insurance risk pool, ARC's objective is to capitalize on the natural diversification of weather risk across Africa, allowing countries to manage their risk as a group in a financially efficient manner in order to respond to probable but uncertain risks. These techniques, while not new, can be applied by African countries in innovative ways to lower the cost of the response to disasters, before they become humanitarian crises, and provide better services to those affected.

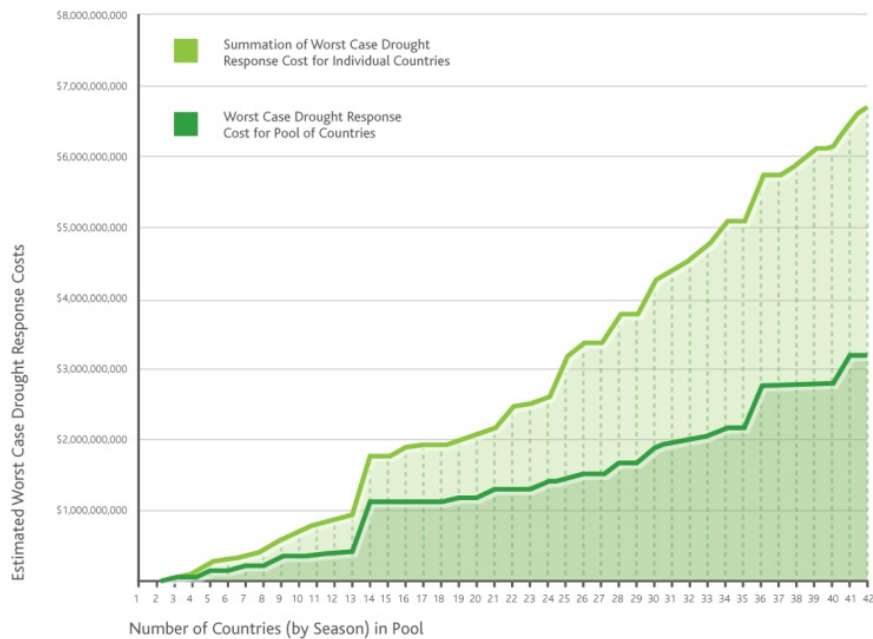
- The initial capital comes from participating countries' premiums as well as one-time partner contributions.
- ARC works with countries to calculate country premiums and allocate payouts to member countries based on predetermined and transparent rules for payment.
- Countries select the level at which they wish to participate by selecting the amount of risk they wish to retain and financing they would want from ARC for droughts of varying severity. (ARC will provide coverage for other hazards, including floods, at a later date.)
- Operations plans, which are meant to optimize ARC disbursements, are a prerequisite for participation and take into account existing mechanisms, priorities and needs of each participating government. These plans are evaluated by the ARC Board's Peer Review Mechanism according to standards set by the Conference of the Parties.
- The pool reinsures itself as well as benefits from investment income so that builds and protects the capital available for coverage to member governments.

- Early Intervention

ARC payouts arrive in the national treasury within 2-4 weeks of harvest so that the first assistance should start to reach needy households within 120 days – the time period at which asset depletion at the household level begins. Experts from the University of Oxford and the International Food Policy Research Institute (IFPRI) conducted a cost-benefit analysis (CBA) to examine the economic advantages and disadvantages of establishing a risk pooling facility as an early response mechanism to severe drought in sub-Saharan Africa. A further analysis by the Boston Consulting Group shows the potential benefit of ARC outweighs the estimated cost of running ARC by 4.4 times compared to traditional emergency appeals for assistance, as a result of reduced response times and risk pooling. This means one dollar spent on early intervention through ARC saves four and a half dollars spent after a crisis is allowed to evolve.

- Risk Pooling and Risk Transfer

A risk pool like ARC combines the risk of a drought occurring across several countries to take advantage of the natural diversity of weather systems across Africa. That pool then takes on the risk profile of the group rather than the risk profile of each individual country, combining the uncertainty of individual risks into a calculable risk for the group. Since it is unlikely that droughts will occur in the same year in all parts of the continent, not every country participating in the pool will receive a payout in a given year. Because a continental risk pool's exposure to covariant drought risk would be significantly smaller than a given country's or region's exposure, an ARC pool could manage drought risk with fewer funds than if each country financially prepared for its own worst case drought scenario individually.



Indeed, preliminary findings indicate potential savings of 50% from diversification of drought-related losses across Africa, i.e. a 50% reduction in the contingent funds needed if the risk is pooled among nations and managed as a group rather than borne by each country individually. Approaching the market as a group will therefore significantly reduce the individual premiums required to maintain the solvency of the facility. These are savings that can then be invested in longer term development projects and resilience-building activities.

- How do Countries Participate in ARC?

As an insurance-based proposition, ARC is not appropriate for managing risks that happen every year. Countries that participate in ARC will be participating in an index-based insurance mechanism for infrequent, severe drought events. In order to participate in ARC, countries must undertake several processes, including customizing the Africa RiskView software, signing MOUs for in-country capacity building, defining a contingency plan for ARC payouts, and determining risk transfer parameters.

When countries have satisfactorily completed this process, they will receive a Certificate of Good Standing from the ARC Agency Governing Board, and will pay a premium to ARC Ltd, after which they will be members of the risk pool.

- How a Country Gets a Payout

Members of the ARC risk pool receive a payout when the rainfall deviation is sufficiently severe such that the estimated response costs – estimated by Africa RiskView – cross a certain pre-defined threshold. When that threshold is crossed, qualifying risk pool members receive a payout within 2-4 weeks of the end of the rainfall season, thereby allowing them to begin early intervention programmes before vulnerable populations take negative coping actions.

The payout threshold is determined by the risk transfer parameters selected by each country. Specifically, governments select the deductible/attachment point (the risk the country wants to retain and manage using other resources), the limit (the maximum payout a country can receive in the case of an extreme drought), and the ceding percentage (the percentage of the total modelled

risk the country wishes to transfer to the pool) to customise their participation profile. These parameters will determine the premium amount and potential payout levels by each member of the risk pool.

The ARC currently offers a maximum coverage of US \$30 million per country per season for drought events that occur with a frequency of 1 in 5 years or less.

From an advisor and insurer perspective it is widely accepted that the creation and management of the ARC pool is suboptimal from a returns perspective. The value comes in terms of wider societal benefit and demonstration of innovation which can be capitalised on more broadly.

Conclusion

It is clear from this paper that the insurance industry is undergoing a rapid evolution on a number of fronts driven by the wider macro-economic environment in tandem with global societal developments and pressures. By tying together the proliferation of capital available with concepts that generate a reduced financial return but deliver other benefits, at a time when capital is seeking return in an increasingly wide range of structures, there is a window of opportunity to introduce solutions which begin to deliver answers across a wide spectrum of challenges and which would otherwise remain theoretical in other circumstances. The onus is on the insurance industry to engage constructively and clearly with governments, NGO's, charities and aid organisations, and other financial institutions to deliver.

References & Sources

Artemis.bm

World Economic Forum (weforum.org)

Rowan Douglas ; Willis Research Network / Willis Capital, Science & Policy Practice

Fidelis Investors LP - Goldman Sachs private placement memorandum

Insurance Day

ARC

Pimco.co.uk/viewpoints