THE GENEVA ASSOCIATION

General Assembly Review 2016

43RD GENERAL ASSEMBLY | ROME

June 2016

The Geneva Association

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.

The Geneva Association membership comprises a statutory maximum of 90 chief executive officers (CEOs) from the world's top insurance and reinsurance companies. It organises international expert networks and manages discussion platforms for senior insurance executives and specialists as well as policymakers, regulators and multilateral organisations.

Established in 1973, The Geneva Association, officially the 'International Association for the Study of Insurance Economics', is based in Zurich, Switzerland and is a non-profit organisation funded by its members.

June 2016
General Assembly Review 2016

Published by The Geneva Association (The International Association for the Study of Insurance Economics), Zurich.

General Assembly Review 2016

43RD GENERAL ASSEMBLY | ROME

The Geneva Association

Talstrasse 70, CH-8001 Zurich | Tel: +41 44 200 49 00 | Fax: +41 44 200 49 99

secretariat@genevaassociation.org www.genevaassociation.org

The Geneva Association is committed to adhering strictly to the letter and principles of national and international antitrust laws. Meetings conducted under The Geneva Association's auspices are designed solely to provide a forum for the expression of various points of view on topics described in the programs or agendas for such meetings. Under no circumstances shall GA meetings be used as a means for competing companies or firms to reach any understanding—expressed or implied—which restricts competition or in any way impairs the ability of members to exercise independent business judgment on competition issues. Accordingly, meeting participants should refrain from any discussion which may provide the basis for an inference that they agreed to take any action relating to prices, services, production, allocation of markets or any other matter having a market effect. These discussions should be avoided both at formal meetings and informal gatherings and activities.

Contents

Secretary General's Statement

I am very pleased to present the review of our 2016 General Assembly in Rome.

Our annual Assembly sits at the heart of The Geneva Association's work as a forum for the leaders of the world's foremost (re)insurance companies. It provides an exclusive opportunity for our Members to meet and interact with selected global leaders and experts on some of the key challenges and opportunities facing their businesses today.

We were pleased to welcome more than 50 Members at this year's Assembly to discuss challenges and opportunities in the areas of financial stability and regulation, disruption, extreme events and climate risk, cyber and geopolitics. Our speakers included a Nobel Prize-winning economist, the Italian Minister of Finance and a former Prime Minister, as well as a current and former central banker, a national chief scientist and an array of some of the world's leading experts on the a.m. subjects.

This report provides a flavour of the insights discussed during our General Assembly. In addition, videos of the speeches given by Professor Robert C. Merton and Dr Robert Kaplan are available on our website and our YouTube channel, alongside interviews with eight of our panellists, providing some of the highlights of their sessions.

On behalf of the Members and staff of The Geneva Association, I would like to thank the CEOs who acted as the anchors for our panel sessions for their work in preparing the discussions and bringing out the relevant insights for our industry. I want to extend my special thanks to Philippe Donnet of Assicurazioni Generali and Carlo Acutis of Vittoria Assicurazioni for their generous support and hosting of this year's tremendous programme.

I hope you enjoy the review.

Anna Maria D'Hulster
Secretary General

Anna Maria D'Hulster
Secretary General
The Geneva Association


43rd GENERAL
ASSEMBLY
ROME
8-11 JUNE 2016

The Role of Financial Innovation in Addressing the Current Economic Climate

Robert C. Merton | Nobel Prize Laureate for Economics |
Distinguished Professor of Finance at the MIT Sloan School of Management

Twenty-eight years ago, Professor Merton gave the Geneva Association Research Lecture in Paris and expressed how pleased he was to be returning to the Association to speak again.

In order to have growth and economic development, a well-functioning financial system is needed and the real economy and financial economy are inexorably connected.

Crisis can induce innovation that can promote permanent improvements. In the U.S. in the 1970s, a series of shocks and risks hit the system to create a crisis—the fall of Bretton Woods, the first oil crisis, double-digit inflation not seen since the 19th century Civil War. There were double-digit interest rates and the U.S. stock market dropped 50 per cent in 16 months. There was no mortgage money at all, no matter what your credit rating. There was 9 per cent unemployment and stagflation. These things were all hitting the system at one time.

So what was the reaction in the financial system? Innovation. Some examples are the creation of the first options exchange, of financial futures, new ways of hedging, NASDAQ high-yield and floating-rate bonds, and index funds. This wave of innovation opened the door to the institutionalisation of the investment process. TIAA CREF was the first institution to create diversified investment theory. That led to securitisation and the creation of the modern mortgage market. Since then, there's always been a mortgage market in the U.S. The Research and Innovation Support and Advancement (Risa) was created—the foundation for global diversification—as well as the Q Group. A wave of financial innovation followed the crisis. These markets, created in the U.S., spread to almost all areas of the world.

So what will happen in the aftermath of this crisis? There were some regulatory reactions, and reactions may still do a lot of damage even if they are for the greater good as in the case of fire: water used to douse the fire may cause quite some damage, but it is necessary and stops wider harm. It is also similar to the unfortunate side-effect of a drug. Regulatory reactions can cause damage, but we can use innovation to cope with this damage.

The unconventional monetary policy will be discussed by the panel, but for pension funds, the cost has been enormously destructive in value and has taken some into insolvency. U.S. municipal public pension plans have liabilities that have been as much as USD 4 trillion under water during the financial crisis. Now the shortfall is at about USD 3.5 trillion (not taking account of Federal government liabilities for military and public-sector pensions, etc.).

So what are the challenges for the insurance industry? First, insurers have to prepare themselves for the fact that low interest rates are not the result of QE. When QE ended in the U.S., there wasn't an interest rate spike. So once QE is reversed, there is no guarantee the rates will go back to where they used to be.

Regulatory reactions can cause damage, but we can use innovation to cope with this damage

Left: In his keynote speech Professor Robert C. Merton described the potential role of innovation in solutions to address the current macro-economic conditions.

A second challenge is competition to the insurance industry in the form of disruption. Wherever there is processing, clearing and settling, for example, there is likely to be disruption. And this is really where we get to the importance of trust. The financial services industry needs to rebuild its trust if it is to stay ahead of innovative disruption. Today, transparency is being used as a substitute for trust. We've noticed that since 2008/2009 there has been a shift away from active investment management and a massive increase in the use of tracker funds—the ultimately transparent instrument. Look at the success of trackers. People don't trust financial institutions as much as they did before the crisis. Insurers need to think about trust.

Now to move on to the opportunities…

Some activity is inherently opaque. For example, for a knee surgery, you could know every tool that will be used, all the timings, all of the medicine and anaesthetics required, but still the success of the surgery is dependent on something that isn't transparent—the skill and experience of the surgeon. When trying to think about solutions to crises, with banks—much of what they do is opaque—if banks are going to be restored to their former prominence, they need to be trusted again. Netflix is a prime example of the importance of good content as well as process. The process at Netflix gets you a film when you want it, how you want it, where you want it. The process is incredibly effective, but the issue is that the content is not necessarily what you want, the selection of films is only OK at best and so, quite quickly, you no longer use it. This is a good and is extremely important parallel for financial services, because the quality of content on investment products only becomes apparent over a much longer period of time. The process from a Silicon Valley disruptor may be excellent but the advice may be poor (given that financial services require all sorts of human skills that are opaque, as in the case of surgery). If the advice a financial advisor gives me (which is inherently opaque) is poor, that becomes clear only much later on. So at heart, are you really going to trust a company that was set up in Silicon Valley recently with no track record in financial services that's offering you process-based financial advice without the ability to know for a while whether that advice was good? Probably not.

The issue of trust is a hugely important area and a fundamental message of what I am saying today—how can insurers create trust and increase it. If you can answer that question you will find that what Silicon Valley does will not compete with your business but it actually leverages you. You use the technology of FinTech to reach many more people with the same quality. If your business model is truly advice, then look at this process-based model not as a competitor, but also as an enhancement of your business. It will displace parts of your business—the mechanics—but your great opportunity lies in the high value of trust and competence.

Demographics

It is no longer the case in the U.S. that people are really going to retire at age 65. There is a huge growth opportunity for insurers to serve that population in a richer way. The role of annuities and the reverse mortgage needs a lot of work and design, but they are going to be one of the cornerstones of how we finance retirement. These people's assets are a bank account and a house—usually nothing else. Leveraging that asset will become increasingly important to pay for the longer lives we are seeing.

There's also empirical evidence that our cognitive skill-set eventually deteriorates between ages 75 and 80. As this happens, so our ability to make financial decisions reduces, making trust even more important. Being a trusted advisor that supports people in retirement will be a significant but valuable responsibility.

The financial services industry needs to rebuild its trust if it is to stay ahead of innovative disruption

The European Central Bank's quantitative easing programme started on 9 March 2015 and will last at least until September 2016.

The QE Conundrum—the Exit and Path to Growth

Discussion following the keynote speech by Professor Merton, on the current debt crisis and the potential means of reigniting economic growth.

Albert Benchimol, CEO of Axis Capital, opened the panel session by adding to some of the medical analogies used by Professor Merton. He pointed out that, while doctors might think of the impact of some forms of treatment as side-effects, the use of ultra-low and even negative interest rates as medicine to avoid a financial crisis might be considered more as collateral damage for the insurance industry. He described how, even with medicine, one might experiment with treatments and that a patient will bear the side effects if needs be, but that if the treatment is not working, then doctors should consider trying another treatment.

PANELLISTS:

Albert Benchimol (Chair)
President and CEO
AXIS Capital

Lorenzo Bini Smaghi
Chairman
Société Générale

Jaime Caruana
General Manager
Bank for International Settlements (BIS)

Robert C. Merton
Nobel Prize Laureate
Economics

William R. White
Chairman
Economic and Development Review Committee, OECD

William R. White

In relation to the issue of low interest rates and quantitative easing (QE), Dr White mentioned he would touch upon four issues:

a. What is the problem?

b. How did we get into 'the mess'?

c. What role has QE played?

d. Which policies will solve the problems?

According to Dr White, the underlying problem is a very slow growth in all major regions, including emerging markets. We have not yet seen the end of that, he said. The problems arose long before the breakout of the financial crisis in 2008. The outset of the problems go back to the 1990s and can be linked to demographic changes in many Western economies and to a rising work force, not least in China. These fundamental changes pushed up profits and kept wages subdued. The outcome is, generally speaking, that consumers are hesitant to spend, and owners of productive capacity see no need to invest in productive capacity.

Central bankers started lowering interest rates long ago, but that was not always a wise answer to the challenges. They eased monetary policy, but no political action was taken to raise the share of wages in total factor income at the expense of profits.

Underlying the challenges in the real economy are financial issues. Financial liberalisation has led to the build-up of debt, which has created many problems. But those problems were hidden by the monetary easing and no one saw the problems emerging.

Central banks face an 'exit' problem, Dr White posited. Tightening policies with inadequate growth and high debt levels could severely cut growth. This possibility is compounded if bond rates overshoot as a result of momentum trading, and low liquidity levels exist due to regulation. However, not tightening policy encourages people to take on more debt in what the BIS calls the 'debt trap'.

In effect, the global economy has an insolvency problem that only governments can fix.

It is well known that credit-fuelled booms can lead to downturns that can last decades, according to Dr White. Productivity growth this time has been very low and potential growth is very low—the economic models did not warn us about this. For example, the International Monetary Fund has lowered its current estimate for global economic growth on several occasions, but has not questioned whether its economic model is basically right. The basic presumption is that lower interest rates will stimulate demand and will have no negative effects. This is wrong, according to Dr White. In response to lower interest rates, consumers will save more because they need more savings to uphold expected future income streams.

QE has had unintended consequences. Productivity in the real economy has been kept down by allowing activities with relatively low productivity to stay in business instead of being forced out. And QE is a problem for the banking sector, which is hurting in many countries.

Dr White finished by underlining the need for governments to revive growth and reduce debt. Monetary policy is currently doing more harm than good according to Dr White.

Monetary policy is currently doing more harm than good according to Dr White

Jaime Caruana

Mr Caruana elaborated on the importance of the financial system in the real economy, the complex interaction between the financial side and the real side, and the role of finance in the allocation of resources. He organised his remarks around three points:

a. Because of the interaction between the financial side and the real side, the global economy currently faces the challenge of low productivity growth and high debt.

b. The policy response so far has relied too much on monetary policy; continuing to do so will entail increasing costs; taking the pressure off monetary policy will require that other policies do more.

c. Incentives for debt accumulation need to be reduced; interest rates will eventually go back to more normal levels; and financial markets may see volatility during the transition, but that should not deter us from going towards the destination.

Many current challenges facing the global economy can be traced back to the combination of low productivity growth and high debt. Productivity growth had started to decline in advanced economies well before the 2008 financial crisis. Debt has continued to rise globally. In crisis-hit advanced economies, public debt as a share of GDP has increased, while the private sector has deleveraged. In other advanced and emerging market economies, however, private-sector corporations have leveraged up since the crisis. This weighs on their earnings capacity.

Poor productivity and debt are related: credit booms tend to shift resources towards sectors with slow-growing productivity, thereby undermining productivity growth. BIS research on advanced economies estimates that credit booms have cut productivity growth by one third to one half in recent years relative to what would have happened had there not been a boom. Keeping the cost of credit persistently low facilitates and perpetuates the misallocation of resources.

As such, continuing to rely on monetary policy alone cannot be the answer. Persistently low or negative interest rates hurt banks, insurance firms and pension funds—the very foundation of the financial system. They also undermine growth by allowing unproductive companies to carry on. The risk is that public confidence in the 'only game in town' could wane at some point.

Other policies must therefore do their part. Fiscal expenditures can serve growth better by focusing more on investing in the future rather than making current transfers. Fiscal space, which is prone to overestimation, needs a more critical assessment. Structural reforms can help remove distortions that impede growth and promote productivity.

Along with the change in the policy mix, incentives for taking on debt, such as the tax advantage of debt over equity, should also be reduced through reforms. The very low interest rates that have been depressing term and risk premiums and pushing up asset valuations cannot be considered an equilibrium: they will have to return to more normal levels at some point. This could result in short- or medium-term volatility in financial markets. But this transition is necessary, Mr Caruana emphasised.

Lorenzo Bini Smaghi

Dr Bini Smaghi concurred with the other panellists on the assessment of the crisis and on debt becoming a major problem. However, noting that the earlier panellists had presented a rather unified approach as to monetary policy being a source of problems, Dr Bini Smaghi elected to present a slightly more provocative

Above: Panellists from panel session 1 (left to right) William R. White, Chairman, Economic and Development Review Committee, OECD; Jaime Caruana, General Manager, BIS; Robert C. Merton, Nobel prize laureate for economics, Distinguished Professor of Finance at the MIT Sloan School of Management; Lorenzo Bini Smaghi, Chairman, Société Générale and Albert Benchimol, President and CEO, AXIS Capital.

approach and not identify monetary policy as the source of the problem—but rather as its consequence.

It is necessary to reduce debt to GDP, he urged. One way to address this is through increasing GDP growth, but this is not possible and policies to enhance GDP growth are not very effective, so this is not an effective channel. So, reducing the debt to GDP can be done through three channels:

a. Paying off debt

b. Default

c. Reducing the servicing of the debt—either the interest you pay or the real amount of the debt itself in real terms.

The calibration between these things is the decisions policymakers have to make. They don't have a choice–they either have to make the decisions or cope with the consequences of not doing so. If you want less financial repression, there will be more defaults and more strain on the economy. So, negative and low interest rates provide an equilibrium and provide a path to a lower debt to GDP future.

So, the current problems must be viewed as an expression of unsustainable levels of debt. There is too much saving and accumulation of wealth. Dr Bini Smaghi recognised that this view might be seen as provocative, yet he insisted that there is too much saving compared to the return on savings, which is not sustainable.

Like the panellists before him—Dr Bini Smaghi pointed out that the high level of savings is due to the low interest rates through the effects on returns for a growing number of pensioners trying to maintain a stable (expected) income stream. Many of the reform proposals being brought forward would only add to the problem. What is needed is structural reform. The structural answer to the demographic changes, including increases in longevity, is to increase the number of working years. People need to retire later and work longer.

In conclusion, Dr Bini Smaghi summed up that the basic, underlying problem is an excess of savings over investments. If the accumulation of wealth continues, the problems will not be overcome. Finally, he underlined that a 'society of retirees' requires a revised business model for insurers. He suggested that more thought is needed on how best to adapt to demands for stability in expected income future streams. High levels of wealth are not the answer and could lead to business defaults and financial instability, he said.

Right (clockwise from top): William R. White, Chairman, Economic and Development Review Committee, OECD addresses the panel; William R. White; Jaime Caruana, General Manager, BIS; Patrick de Larragoiti Lucas, President, SulAmérica SA looks on; Lorenzo Bini Smaghi, Chairman, Société Générale and Albert Benchimol, President and CEO, AXIS.


THE
GENEVA
ASSOCIATION
43rd GENERAL
ASSEMBLY
ROME
8-11 JUNE 2016
G-SII policy
IAIS

Key Current and Future Regulatory Developments at the IAIS

Dr Yoshihiro Kawai | Secretary General | IAIS

Thanks to IAIS members and the engagement of internationally active insurance groups (IAIGs), the global insurance capital requirement is developing well and within the IAIS' proposed time frame.

The IAIS has developed and adopted the first two capital standards—the Basic Capital Requirement (BCR) and Higher Loss Absorbency (HLA) in 2014 and 2015 for global systemically important insurers (G-SIIs). The IAIS now has the third standard in its sights—the development and adoption of the Insurance Capital Standard (ICS).

The ICS will happen, and it will have a significant impact on insurance business and regulation in the coming years

BCR and HLA

The development of the BCR and HLA is a landmark achievement. They are the first-ever global capital standards in the insurance sector. While they are 'blunt' by design, they show we can reach consensus on global insurance standards.

We should also be mindful that BCR is a provisional solution. BCR plays a role as the foundation for HLA, but once ICS is developed in a few years' time, ICS will replace BCR as a foundation for HLA.

The International Capital Standard (ICS)

The ICS will happen, and it will have a significant impact on insurance business and regulation in the coming years. The ultimate goal of the ICS is to achieve substantially the same outcomes across jurisdictions. In other words, the goal is to develop a common supervisory language and create a level playing field that enables IAIGs to operate efficiently globally. Valuation convergence remains a challenge, but it will be achieved gradually. ICS will see a gradual implementation from 2020 with the incorporation of the ICS rules into national legislation. The ICS is being developed in close discussion with supervisors and IAIGs and it is a joint project with around 40 IAIGs taking part in the field test.

The ICS is the ultimate global capital standard applying to all IAIGs. This is the most important and urgent initiative in IAIS history.

All IAIGs around the world are within the scope of the ICS. We are going to develop two versions.

ICS Version 1 will be achieved in mid-2017 and it will be a standard method for calculating the ICS capital requirement and an approach to capital resources whilst still allowing two valuation approaches (GAPP plus and MAV) to co-exist—ultimately with the intention of reconciliation.

ICS Version 2 will be developed in the end of 2019 and will have an improved level of comparability compared to ICS Version 1. It may still include the two valuation approaches, but aspires to reduce differences in valuation, and for the

Left: Special address by Dr Yoshihiro Kawai, Secretary General, International Association of Insurance Supervisors.

ICS capital requirement, may allow for both the standard method and other methods of calculation, including partial or full internal models; external models or variations to the standard method. The implementation of Version 2 will start from the beginning of 2020.

U.S. SII holding company capital requirements

Capital regulation development is a process. Currently, the U.S. Federal Reserve Board is introducing simple capital standards with GAAP based valuation combined with the introduction of stress tests for systemically important insurers. The Federal Reserve Board, Federal Insurance Officer (FIO) and the National Association of Insurance Commissioners (NAIC) are fully engaged in the ICS and are a significant contributor to ICS work.

Global systemically important insurers (G-SIIs)

Based on lessons learnt from the financial crisis, in 2013 the IAIS developed the G-SII policy framework that covers G-SII assessment methodology and G-SII policy measures. In collaboration with the FSB, nine insurance companies are currently designated G-SIIs. Reinsurance companies were not included in the scope until last year but will be included from this year. In line with its commitment, the IAIS has been conducting the review of G-SII methodology including a clear and solid articulation of NTNI (non-traditional and non-insurance activities), which is a key part of systemic risk analysis. The IAIS consulted on a draft updated G-SII methodology and draft note on clarification on the notion of NTNI activities and products in November last year. Based on received comments, the IAIS is finalising the revised G-SII assessment methodology including the notion of NTNI activities and products. The final documents will be issued in mid-June 2016.

Fintech—a new development

Fintech and digitalisation are significant new developments in the space. For example, China's Zhong An, the first truly digital insurer, has underwritten over 630 million policies (80 times the Swiss population) in its first year of operation. It applies Internet thinking from product design to claims servicing. In Kenya, 55% of credit contracts in the last two years were conducted by mobile phones. These examples demonstrate that, thanks to block-chain technology, huge increases in mobile and smart phone ownership and digitised money, the financial industry and overall economy will enjoy remarkable new opportunities and enhancements of business efficiency. Consumers will benefit from better service and better products at competitive prices.

The IAIS is interested in this phenomenon because of risk. For example, in Zimbabwe, 1.6 million policyholders lost their life insurance contracts sold by mobile phone overnight due to a disagreement between a partnership of insurance providers. In Bangladesh, the Central Bank of Bangladesh lost USD 81 million from their deposit in the New York Federal Reserve. Had the Federal Reserve not detected the theft, the sums involved could have been as high as USD 1 billion. The opportunities of fintech are exponential, but the risks can also be exponential.

The opportunities of fintech are exponential, but the risks can also be exponential

The following are potential areas of concern for supervisors:

- **Operational risk**—including cyberattack risk, business interruption, fraud (theft from insurance companies, etc.).
- **Consumer protection**—due to the potential for almost instant widespread consumer impact
- **Data protection**—the sheltering of confidential and private data, which are the very core of fintech offerings. Regulation in this area is still underdeveloped and not globally harmonised.

As it is a global concern, we need a global solution. The IAIS is considering the creation of a working group to analyse fintech development and its impact on insurance regulation. Key regulatory principles should not be compromised due to technological development.

In summary, there are two key messages that are common to the ICS and fintech. Firstly, they will come, and will come soon. Secondly, they will impact insurers significantly so it is best to engage and be proactive.

Kodak's inability to adapt to the disruptive force of digital photography is a business school case study on disruption.

Accelerating Through Change—Disruptive Innovation & Technological Revolution

Chaired by Charles Brindamour | CEO | Intact Financial Corporation

The session, addressing innovation and possible disruption to the insurance market, was introduced by Anna-Maria D'Hulster, Secretary General of the Geneva Association.

Mr Brindamour began the session by discussing how people view disruption in different ways. He explained that the session will focus on the role software is playing on how people consume and access information, behave, interact, share and live. He highlighted that the panel assembled are not analysts or observers but rather active disrupters.

Disruption starts when there is a gap between what consumers expect and what the incumbents offer, said Mr Brindamour. In insurance, across a number of countries, one thing is clear: a number of areas are key for consumers, namely transparency, ease of access, simplicity and an ability to understand the consumer; there is a gap between consumer expectations and what the current market offers them. This is the gap that creates room for disruption, he said.

Mr Brindamour pointed to the pace of change under way in the technology and insurance space. Interest in insurance and financial services has exploded recently. For example, the venture capital invested in the financial services space has gone from a couple of billion dollars five years ago to USD 20 billion in 2015—a tenfold increase. Indeed, the Internet is now in its second coming, partly due to Web 2.0 technologies such as social media. Besides funding, the second big accelerator is mobility—people's access to mobile devices and smart phones. The trajectory shows that within five years, close to 90 per cent of the world population will have access to a mobile device with 80 per cent having access to a smart phone, he said.

A direct consequence of this change is that data are now produced in unprecedented quantities—not only structured data as we know it but also unstructured data. The fact that storage, processing and access to data have been democratised and are available to a far wider group of people creates some challenges, said Mr Brindamour. Challenges not just for people who use data to explain risk to the world but it also with regard to data privacy, ownership and supervision—a key theme that was discussed on the panel.

Another key element of the convergence of software, mobility and access to data is the fact that people share assets, expertise and, in some ways, risk, in a very different way than they did previously. This is one of the most influential trends and sources of disruption, potentially also in insurance. Taking this concept of software, data and the sharing economy forward and applying it to mobility indicates potentially dramatic implications for how people move from point A to point B and the role of insurance in that context, concluded Mr Brindamour.

PANELLISTS:

Charles Brindamour
CEO
Intact Financial Corporation

Andre Haddad
CEO
Turo

R. Michael Hendrix
Partner & Executive Design Director
IDEO

Christian Hernandez Gallardo
Co-Founder and Managing Partner White Star Capital

Chris Thomas
Founder and Partner
Fontinalis

Christian Hernandez

Mr Hernandez began his remarks by highlighting that he has had a long career in data, starting life as a data warehousing expert. He described that he has realised that many, many companies do not recognise the data assets that they own, nor do they know how to bring them to life to create a competitive advantage. Now that he is an investor, he focuses on how companies can use data to differentiate themselves, acquire customers and serve them better, and upsell them.

Mr Hernandez described the emerging ***macro-trends*** that are being underpinned by data assets. The first, he said, is the power of mobile phones. Smart phones are like supercomputers in our pocket, whereby the processing power of the phone is enhanced by the access provided to the cloud, Google's servers and supercomputers, etc. The mobile is also hugely important, he said, because it is probably the only computer that large numbers of people in the developing world will have (with a lot of sensors in them, he added).

The second trend Mr Hernandez described is ***social media***, which has changed the web from being a place of anonymity into a place of real identity. Indeed, users tend to tell Facebook things that they like, where they go and what they do that they would not dream of telling other companies, retailers or employers. Whilst many companies think of social media as a PR or marketing tool, in fact, it is a tremendous source of customer intelligence that should be closely matched to your primary data sources about your customers and used to better acquire, segment and serve them.

The third megatrend, said Mr Hernandez, is ***sensors*** and that today, the Internet of things is just a cheaper and more prolific means of gathering data. He pointed to the exponential growth in the volume of data being produced in the world. He cited research from Hal R. Varian, Chief Economist at Google, stating that, in 1999, humanity was creating 1.5 billion gigabytes of data per year. A 2015 study by McKinsey and IBM calculated that the world is now producing 2.3 trillion gigabytes of data…per day.

The fourth phenomenon is the almost ***zero-cost of storing data***, the huge increase in processing power that can be applied to data, and most recently, the use of artificial intelligence to process data. The data from individual sensors may not be interesting on its own, but at the macro-level can become very valuable. Mr Hernandez gave an example of an entrepreneur who offers municipalities in the U.K. free data storage for their municipal data. One of the data sets collected is the individual level of the water at sensor points and bridges around the U.K. Whilst one single data point of the water level in a particular place at a particular time in the U.K. is not that valuable individually, the entrepreneur sells the aggregated real-time data to financial services firms such as hedge funds and insurance companies as valuable risk information.

This leads to the interesting question of who creates the data and who pays for it, said Mr Hernandez, pointing to a number of ways in which data are collected on consumer products that are paid for by the consumer but which generate data for the company itself, for example, Waze and Tesla cars. He pointed to the data

Right (clockwise from top): Charles Brindamour, CEO, Intact Financial Corporation; Andre Haddad, CEO, Turo; R. Michael Hendrix, Partner & Executive Design Director, IDEO; Members enjoy a lighter moment; Chris Thomas, Founder and Partner, Fontinalis; Christian Hernandez Gallardo, Co-Founder and Managing Partner White Star Capital.

ownership issues that this creates and considered that Europe will drive most of the debate about who owns data and how that is regulated. The debate will be a societal, governmental and industrial debate, he concluded.

Andre Haddad

Mr Haddad discussed Turo's business model that allows car sharing between people. Cars lose value immediately upon purchase although they are typically a family's second or third most valuable asset. Turo allows the user to gain revenue from these cars during times when the car is not utilised—which is typically 70–80 per cent of the time. This service is cheaper than traditional rental car agencies, more accessible and, according to Mr Haddad, more fun. The model is utilised most by younger and more affluent individuals and could make people in urban areas rethink the current model of owning and storing cars. Whilst the current car rental model focuses on the borrower, Turo's model also focuses on the lender.

A very interesting aspect of the presentation was how the idea for this business model evolved. At first, Turo was a software-based company. It would install software in each Turo car that would allow easy access by borrowers. This implies no person-to-person contact similar to a lock box on a house up for sale. What Mr Haddad quickly learned is that lending a car is a personal decision and that lenders wanted to 'connect' with borrowers and borrowers want to connect with lenders. Borrowers want to make sure the car is well serviced and in good working condition. Lenders want to make sure that the borrower will take good care of this important asset.

This caused the model to change from a software model to a 'people' model. Haddad gave the example of his own Porsche 911 that he now lends on Turo. When he first purchased the car, he would not let his wife or mother drive it, let alone a stranger. With the personal connection on the Turo app, he now trades messages to other Porsche enthusiasts or those who always dreamed of owning a Porsche. This personal experience is what Haddad believes has made the model succeed. The key to the presentation was not only this great idea or this person-to-person market, but how businesses need to continually adapt to users' wants and needs.

Chris Thomas

Mr. Thomas provided perspectives on 'mobility disruption' which includes road, rail, air, and marine mobility and how technology is a change agent in the way transportation is evolving. Companies making progress in this space are data-driven, software-based and capital efficient and are focused on 'the superior movement of people services and goods across all modes bought about by new technology solutions'.

The trend is that mobility is moving from "me" to "we"—from silo transport models into more integrated models. Pain points that are driving these changes are unpredictable travel times, bad traffic and delays for example, while facilitators of the change are the advent of big data and the increasing use of smartphones and related technologies. Demographic trends are also providing an impetus for more integrated solutions. Indeed the scale of the issues is such that they cannot be solved by spending, but rather new solutions are needed. The ability for a consumer to choose the mode of transport and the route and it will be curated for us. Cities are creating significant demand for this, he said. The volume and concentration of people is creating both the demand and the opportunity for these types of technology.

Furthermore, the use of technology for mobility rather than driving a vehicle can save money and lives said Mr Thomas. The opportunities of technology are not just monetary, he argued, but offer significant savings of time and lives he said.

R. Michael Hendrix

The final speaker was Mr Hendrix, who posed that design is a 'warm strategy' for innovation. According to Mr Hendrix's Venn diagram called the Human Centred Mindset model, where design is the triple intersection between People (desirability), Business (viability) and Technology (feasibility). The process of creating design is an iterative process. Most companies only go through the design process once and fail to review the goals and outcomes and then reset the process.

Above (left to right): Charles Brindamour, CEO, Intact Financial Corporation; Christian Hernandez Gallardo, Co-Founder and Managing Partner White Star Capital; Andre Haddad, CEO, Turo; Chris Thomas, Founder and Partner, Fontinalis; and R. Michael Hendrix, Partner & Executive Design Director, IDEO.

Mr Hendrix then gave a very relevant case study on how his company worked with MassMutual to create an academy to sell insurance to millennials. After exhaustive surveying, IDEO determined that millennials are lacking financial literacy and do not really consider themselves 'adults'. IDEO discovered that life insurance products were ignored amongst the cohort, as they considered themselves below the age of adulthood. IDEO worked with MassMutual to create an "academy for becoming an adult" and positioned insurance products as a necessary part of becoming an adult. So, whilst the project began with the intention of selling insurance directly to millennials on their favoured channel, the Internet, and after multiple iterations, the project changed dramatically. This provided a good example of the iterative process of design that Mr Hendrix described.

Mr Hendrix explained the design of an "academy for adults" and how new academies in other cities are now being built. He also described how a range of subjects were taught at the academy, for example, from how to choose a wine or how to throw a dinner party, to other subjects designed to increase financial literacy, such as what a U.S. 401k savings plan is and what life insurance policies are relevant at different stages of life.

The open question session was brisk including the issue of which industry best uses data—the online gaming industry was the surprising answer according to Mr Hernandez. The number of gamers is tremendous and the amount of data collected is evidently extraordinary.

Speed of data and ease of 'hosting' databases were deemed the largest evolution in the sharing society. Data storage used to be a huge expense and only hosted by a few parties. Now there is a battle to attract data to hosts because the hosts now realise the value of the data. This has obviously reduced the cost of storing data.

Finally, a significant part of the conversation focused on who owns data and on privacy issues. If individuals submit data, do they have the right to have that data deleted? Can data gatherers sell data to third parties? These are issues that the industry is beginning to address. Companies are using these data to make risk decisions, and individuals are now realising this. It gives individuals the opportunity to understand the triggers to receive more favourable pricing of products and to act accordingly. The example given was the relatively new technology that places a device in a car to see how hard the driver brakes. The more braking and the more severe the braking will cause increases in auto insurance premiums. However, the drivers will realise this and have the opportunity to drive more carefully to receive a favourable rate from the insurer.

Speed of data and ease of 'hosting' databases were deemed the largest evolution in the sharing society


BANCA
D' ITALIA

Financial Stability in a World of Very Low Interest Rates

Dr Ignazio Visco | Governor | Bank of Italy

Since the 1980s, we have been observing a marked downward trend in nominal interest rates in the major advanced economies. This decline is explained by lower inflation and inflation risk premiums, and by a reduction of real interest rates. In these countries, real long-term yields have fallen on average from around 5 per cent in the early 1980s to about 2 per cent before the financial crisis, and to approximately zero per cent today.

More recently, very low or even negative interest rates mainly reflect the slack in the economy and excessively low actual and expected inflation. The euro area, in particular, is still slowly recovering from two consecutive financial crises and a long recession. Real GDP has only recently returned to the 2008 level, and cyclical positions continue to differ across Member States. Inflation remains well below the levels consistent with the ECB definition of price stability: it has now been below 1 per cent for almost three years and in the last few months, it has turned negative once again. Core inflation (which excludes the more volatile components) has not exceeded 1 per cent over the last two years; it reached an historical minimum (0.6 per cent) at the beginning of 2015 and stands only slightly above it in the latest readings. The risk of a de-anchoring of inflation expectations has become material since mid-2014 and is still high, although it declined at the beginning of 2015 following the announcement by the European Central Bank (ECB) Governing Council of its public-sector purchase programme.

While these considerations indicate that the current low level of interest rates is not an arbitrary choice of central banks, the risks posed by a protracted, very accommodative monetary policy need to be monitored carefully. And so they are. Very low (or negative) interest rates for too long raise fears that they may be a source of financial risks by fuelling asset price misalignments and endangering the profitability of financial institutions.

The risk of asset price misalignments (or 'bubbles') is strictly connected to the incentives for an excessive 'search for yield' that an environment of low nominal and real interest rates creates for investors and financial intermediaries alike. At present, indicators of imbalances in housing and credit markets do not point to increasing vulnerabilities in the euro area as a whole. To the extent that risks materialise, appropriate macroprudential measures at a country level can be implemented to limit their accumulation. Moreover, in assessing the risks of excessive 'search for yield' we should not forget that the quest for higher yields may also improve the scope for portfolio diversification. In the euro area, institutional investors certainly have room to better diversify their assets. According to recent estimates by the European Commission, for insurance companies and pension funds, the portfolio share of equity instruments is around 10 per cent, compared to more than 20 per cent in the U.K. and almost 45 per cent in the U.S.

The other main concern for financial stability is that low or negative interest rates may have an adverse impact on the profitability of banks and institutional investors, ultimately putting their financial soundness at risk. In evaluating this issue we should take into account all the effects that low interest rates may have on the balance sheets of financial institutions.

...the risks posed by a protracted, very accommodative monetary policy need to be monitored carefully

Left: Bank of Italy.

In the banking sector, the negative impact on interest income may be counterbalanced by a more favourable effect on other revenues: in addition to one-off capital gains on securities portfolios, an increase in fees and commissions from banking services and—given that low interest rates bring about an improvement in the economy and thus in borrowers' creditworthiness—a reduction in provisions. Institutional investors may also benefit from a stronger demand for asset management services by households, due to the latter's need to better diversify their portfolios, as well as from a broader range of investment opportunities thanks to corporations' greater demand for non-bank debt and equity capital.

In the short term, the main risk derives, not least for financial institutions, from the persistently weak and uncertain macroeconomic outlook; the most effective way to reduce this is to lift economic growth and employment. In the euro area, and in the other advanced economies that are still facing subdued activity and too-low inflation, this calls for economic policies to sustain aggregate demand; improvements in the cyclical position will also facilitate the implementation of structural reforms needed to raise potential output and ensure a sustained economic recovery.

Non-standard monetary policy measures are especially effective in alleviating the contractionary consequences of economy-wide deleveraging in an environment in which nominal interest rates are hovering around the zero lower bound. We have clear evidence that the measures undertaken by the ECB Governing Council over the last two years have been effective. Estimates by, among others, Banca d'Italia staff (which do not consider further possible non-linear effects) show that in the absence of the measures adopted between June 2014 and December 2015, both annual inflation and GDP growth in the euro area would be lower by about half a percentage point in 2015–2017. The expansion of economic activity in 2015 would have been slightly below 1 per cent, against an observed 1.6 per cent; inflation would have been negative, at about -0.5 per cent, against 0.0. These estimates are consistent with those of the Eurosystem and ECB staff. In Italy, the effects are estimated to be even stronger.

From a medium-term perspective, the financial stability implications of a low interest rate environment require a deeper assessment of the fundamental forces shaping real interest rates. In the current debate, there are varying views. According to the 'debt super-cycle' view, interest rates, growth and inflation are low because of the legacy of the financial crisis; in the medium term they will go back to 'normal'. According to the today fashionable 'secular stagnation' hypothesis, advanced economies suffer from a persistent imbalance resulting from an increasing propensity to save and a decreasing propensity to invest; excessive savings act as a hindrance to growth and inflation, and pull down real interest rates. A number of supply and demand factors, all characterised by a high degree of persistence, have been considered to justify this imbalance. Demographic developments, high demand for safe assets in emerging economies, increases in wealth and income inequality and a permanent decrease in total factor productivity are the main examples.

If we accept, instead, the view of those who suggest that we are in a transition towards the 'second machine age', low interest rates may be seen as the result of an adjustment temporarily characterised by weak demand and high unemployment; in the longer run, productivity gains due to the ongoing digital revolution and many other current and foreseen technological innovations will increase economic growth and raise real interest rates, even if with uncertain consequences for the distribution of incomes. It is not easy to assess which of these views is more likely to be confirmed by the future evolution, but none of them can be totally dismissed a priori; future developments could result in a combination of these different hypotheses. All this considered, it is conceivable that real interest rates will go up in future years, but how far in the future this will occur is very difficult to assess.

Since a scenario in which a low interest rate environment extends for a long time into the future cannot be ruled out, it is important to assess its possible impact on financial institutions in order to identify the appropriate responses. The main vulnerabilities for life insurance companies and pension funds would result from maturity and yield mismatches between assets and liabilities. As identified by the 2014 stress test conducted by EIOPA, a low interest rate scenario could put under particular pressure the profitability and resilience of insurance companies with long-term guarantees and negative duration gaps, leading to shortages in their solvency capital ratio. The risk is significant in some euro-area countries; it may be less marked in Italy, thanks to a fundamentally balanced financial structure.

To mitigate profitability concerns, life insurance companies and pension funds will have to adapt their business strategies. So far, actions taken by insurance companies have differed depending on whether they are related to new or existing products. For new contracts, there is a general trend to offer lower or no guarantees and develop other types of products, including unit-linked policies, in which the risk is held by policyholders and beneficiaries. This is also a response to the new Solvency II prudential regime, which requires additional capital for guaranteed products. For existing contracts, the main actions consisted in reducing the shares of returns distributed to policyholders and, where legally feasible, the renegotiation of contract terms.

To mitigate profitability concerns, life insurance companies and pension funds will have to adapt their business strategies

As far as retirement savings are concerned, the persistently low market yields have strengthened the tendency, already established, to replace defined benefit schemes with defined contribution schemes. The mechanisms to mitigate the risk of the underfunding of defined benefit schemes vary across national jurisdictions; they include increased capital buffers, additional sponsor support and guarantee funds, as well as the reductions of accrued benefits.

From a regulatory viewpoint, the introduction of Solvency II for European insurance companies is a major turning point. The new regulatory regime is a valid tool for mitigating portfolio risks. Some provisions were introduced in Solvency II to dampen the impact of interest-rate volatility on insurance companies' balance sheets, such as those related to the parameters for the extrapolation of risk-free interest rates at very long-term maturities and other measures that are meant to smooth the transition to the new prudential regime; such provisions may also reduce the impact of a prolonged situation of low interest rates. The scope for portfolio diversification has been enhanced by introducing lower capital requirements for investments in high-quality infrastructure and securitisation instruments, as well as in shares of closed-end funds targeting long-term investments and venture capital. In order to deal with system-wide instances of instability, other measures are currently being discussed at a macroprudential level, including a harmonised EU framework of recovery and resolution for the insurance sector; however, such framework is still at an early stage.

The low interest rate environment and the rapid pace of transformation of the supply of financial services make consumer protection as important as ever. Ensuring an appropriate level of consumer awareness and information is a policy priority, especially in countries where households depend, to a large extent, on guaranteed insurance savings products or funded pension schemes.

We all face a highly uncertain future environment. A deeper understanding of challenges and possible consequences is crucial for all the stakeholders in the financial industry.

Policymakers, financial institutions, firms and households need to be ready to rethink and, if necessary, adapt their behaviour.

In the short term, in particular in the euro area, an expansionary monetary policy remains of key importance to supporting aggregate demand and attaining price stability, and to preserving financial stability from debt-deflationary risks. As to the longer term, it is difficult to foresee how the factors affecting real interest rates will evolve, and this uncertainty bears on their current low level. Financial institutions should be aware of the compelling need to effectively adapt their business models, both in their internal organisation and in their supply of products; it will be especially important to fully exploit the new technologies in order to provide the most suitable financial products for firms and households. In any event, access to sound information about issuers and financial contracts, transparent behaviour by firms and financial corporations, improvements in households' financial education are key prerequisites for the financial sector to effectively allocate risks in the economy. For regulators, the challenge remains one of striking the right balance between allowing financial innovation while preventing it from endangering financial stability.

Article republished from Bank of Italy's website.

Right: The Creation of Adam painted on the ceiling of the Sistine Chapel by Michelangelo.

Mr Ignazio Visco, Governor of the Bank of Italy gave his speech at the Vatican Museum .

The May 2016 Fort McMurray wildfire is estimated to have resulted in between USD 4.4 – 9 billion in insured losses—the most expensive disaster in Canadian history[2].

Extreme Event and Climate Resilience: Opportunities for the Insurance Industry

Chaired by Denis Kessler | Chairman of the Board of Directors and CEO | SCOR SE

Disasters caused by meteorological, hydrological and climate-related extremes happen every day around the world, with profound impacts on people, communities, businesses and governments. This session brought together a leading academician, a country lead-scientist, a leader of the World Bank Group finance and markets division and two insurance CEOs to discuss the implications for the insurance industry and its role in economies and society.

Dr Erwann Michel-Kerjan delivered a keynote speech on opportunities for building resilience in cities for (re)insurers. He mentioned that megacity clusters dominate the world economy and that insurers would benefit from a shift in focus from the market and country levels, into a granularity at the megacity level. In terms of population and contribution to GDP, cities in Asia are the largest, but he also cited cities in Western Europe and the Eastern and Western Corridors in North America. Today, 1.5 billion people (22 per cent of world population) reside in cities. Cities also account for approximately USD 30 trillion of GDP (>50 per cent of 2007 world GDP) and 485 million households with GDP per capita of >USD 20,000. It is projected that by 2025, cities will have 2 billion people (25 per cent of projected population in 2025), USD 64 trillion of GDP (>60 per cent of projected global GDP) and 735 million households with GDP per capita >USD 35,000. The key question is, How do we make cities more insurable and a source of insurance growth? According to the World Economic Forum's *Global Risk Report 2016*[1], climate risk and failure in climate change adaptation and mitigation are the highest risks to our society and our cities. According to a 2013 study by the United Nations Strategy on Disaster Risk Reduction (UNISDR) following super storm Sandy, 80 per cent of households and 92 per cent of small businesses in New York City did not have flood insurance. The study evaluated four different adaptation and resilience options, by looking at: (1) What are current and future extreme weather risks? (2) Which strategies could work? (3) Who should pay? (4) What innovative financial solutions could work? They identify four options for adaption and building resilience. Dr Michel Kerjan pointed out that mitigation is often touted as a universal solution, but that is not always the case. In some circumstances, there are arguments for waiting for the climate dynamics to change and potentially get more severe before investment in mitigation measures will pay off. Instead , an innovative resilience investment strategy may be needed. Examples proposed include resiliency bonds or a resiliency fee that could be charged to visiting tourists. Summing up, Michel-Kerjan concluded:

- For (re)insurers, looking at their portfolio, using 'city' as the unit of market segment offers a different lens for underwriting/risk selection, asset man-

PANELLISTS:

Denis Kessler
Chairman of the Board of Directors and CEO
SCOR SE

Gloria Grandolini
Senior Director
Finance and Markets Global Practice
World Bank Group

Mike McGavick
CEO
XL Group plc

Erwann Michel-Kerjan
Executive Director
The Wharton Risk Management and Decision Processes Center

Dame Julia Slingo
Chief Scientist
U.K. Met Office

Mark Wilson
CEO
Aviva plc

1 http://www3.weforum.org/docs/Media/TheGlobalRisksReport2016.pdf

2 Canadian Underwriter (2016) AIR estimates Fort McMurray wildfire insured losses at between $4.4 billion and $9 billion, retrieved on 15 June 2016 from http://goo.gl/hfHt4E

agement and growth; many large and/or fast growing cities are exposed to climate risks and will be even more so in the future.

- As underwriters and asset managers, (re)insurers are ideally placed, working with governments, to enhance the resilience of cities, push the insurability frontier and provide solid return on equity to shareholders; in the current low interest rate environment, regulators should support those long-term investments.

- Smart data and digitalisation can help insurers if applied to the right questions—for example, to become smarter about cities (consumer centricity, better appreciation for business interruption and contingent business interruption, InsurTech, and new products).

...today the science of weather and climate forecasting has advanced enough to allow us to interface it with the CAT models

During an interactive session chaired by Professor Denis Kessler, four panellists responded to a number of questions:

Professor Dame Julia Slingo noted the development of CAT risk modelling in the (re)insurance sector that is founded on hazard, exposure and vulnerabilities in a backward looking (statistical) mode. She pointed out that climate changes are impacting the frequency, severity and location of natural catastrophes, hampering sustainability and economic development.

Traditionally, empirical modelling has been based on historical, observed hazard, but the past is no longer a reliable proxy for the future in the context of climate change. Recent advancements in supercomputing power, combined with innovation in physically based simulation, mean that weather and climate are now increasingly predictable on global, regional and even local scales. Scientific progress allows forecasting within days with remarkable skill, but also produces useful probabilistic models for the seasonal to annual timescales. On even longer timescales, these systems also tell us about how weather and climate extremes will change as the planet warms.

Furthermore, advanced scientific methods for estimating probabilities have been developed, known as ensemble prediction and related to the famous quote of Ed Lorenz, the father of chaos theory who said, 'one flap of a sea gull's wings would be enough to alter the course of the weather forever'!. The Met Office no longer makes deterministic forecasts but uses ensemble prediction across all forecast lead times from a few hours to a decade ahead. This provides potential weather and climate outcomes that are plausible but may lie outside our observed records—i.e. extreme events that are possible but that have not yet been seen. These are often described as 'black swans', and many occurrences of these events have been observed recently (e.g. U.K. floods). These synthetic event sets, produced in the ensemble system, mean that the tail of the distribution of extremes can be modelled far better.

Professor Slingo noted, however, that to benefit from these scientific advancements, the (re)insurance sector and the scientific community should engage in meaningful partnerships. She stressed that an enormous volume of data is available but that insurers and scientists will need to work together to extract the essential elements.

She stressed the enormous value of the predictive sciences, providing future trajectories (next hour to longer term) now with some confidence. High-quality five-day to one-week forecasts allow significant preventive and preparedness action to reduce the losses. Another issue is working with less developed countries to improve their access to forecasting for pre-event preparedness and post-disaster response and recovery.

Professor Slingo reflected on her previous cooperation with the industry and many lessons that have been learned. As one of the founding members of the Willis Research Network more than a decade ago, she stressed that, at that time, the science was not mature enough, but today the science of weather and climate forecasting has advanced enough to allow us to interface it with the CAT models.

She recommended:

- the opening of the CAT models in order to help scientists understand how to interface their data with the models;
- leveraging the use of public-based science for the greater good—this could include the forging of longer-term strategic partnerships on research;
- the need for the development of an integrated chain of information by harnessing the best science can offer with other information that could be interfaced with decision tools for resource and risk management.

Such is the emerging experience in the U.K. with the Natural Hazards Partnership, where the government is working to coordinate many agencies to leverage their information for national climate change risk assessment.

Finally, Dame Julia stressed that, from a personal point of view, the warming of the global climate is locked in for the next 20–30 years due to the emissions that have already been put into the atmosphere. In light of this, achieving the target of a maximum two-degree increase in average temperature is very challenging and there will probably be a need to extract carbon from the atmosphere. There is a real need for investment in extremely innovative technologies that will enable us to travel to a low-carbon future.

Dr Gloria Grandolini pointed that, in her role at the World Bank Group (WBG), there is deep interest in expanding coverage and protection in developing nations, and the WBG sees itself as the enabler between governments and the industry. Success means that they are no longer needed, because the relationships they have been fostering are now effective. One key challenge to the

WBG's work is that governments often do not have the right incentives to invest in *ex ante* solutions due to budget constraints and parliamentary processes. Dr Grandolini highlighted a few lessons learned from many years of working with middle- and low-income nations, that:

- there are tremendous opportunities for insurance penetration in emerging and developing countries.
- insurance solutions are key in disaster risk financing (DRF) and risk transfer.
- the 'one size fits all' approach does not work, so solutions need to be tailored to country circumstances.
- countries are increasingly asking for support to shift from post disaster to ex ante investments in prevention, but knowledge and expertise gaps remain a major hurdle.
- there is great opportunity for the insurance industry to get engaged, but this requires the building of trusting partnerships.

Dr Grandolini stressed that in the developing countries facing risks, disaster risk modelling and risk transfer have gained traction in a number of regions owing to regional pool developments. For many governments, there is no way to finance insurance themselves, so they need market-based solutions, but the same constraints mean that they do not have the expertise and institutional capacities to evaluate the risks and proposed solutions. The World Bank bridges this information and helps fill in the expertise gaps, and provides access to and use of CAT risk models.

Another issue is that governments do not look at the insurance portfolio but the broader investment strategy that goes in the distribution of prevention, preparedness, contingent liability and risk transfer. She emphasised the importance of public–private partnerships, noting a number of initiatives including the Caribbean and the Pacific risk pools as successful PPPs from which lessons can be learned.

Dr Grandolini noted that WBG is now screening all of its projects and investment portfolios and have seen a growth of over 20 per cent in resilience investments in developing countries. For example, in the area of energy solutions alone, there is a USD 6.5 trillion need for investment in transformative policies that embrace long-term investments, leveraging resources and piloting solutions in energy planning.

Mr Mike McGavick highlighted that incisive statistics are available on resilience building in New York, because the area is so well modelled compared to the rest of the world. This demonstrates, he said, the importance of modelling the rest of the world. He suggested some points that insurers should keep in mind:

- Because modelling is a skill that is central to the business of insurance, insurers should start modelling today, not in order of economic value but in reverse order of exposure on a moral principle basis.

- Once the exposure/vulnerability is understood you can cost–benefit analyse mitigation efforts and pool the risks. Whilst progress is being made on these risk pools, they are too geographically concentrated and are therefore inefficient.

- We can use micro-insurance as a way not only to protect zones but also the families within those zones.

- Insurers can find ways to practically unlock their investment capacity in support of infrastructure that is already going to be needed in the face of the changing climate.

- Insurers need to think about how they can use their significant investment resources to encourage the right behaviour.

Insurers can find ways to practically unlock their investment capacity in support of infrastructure that is already going to be needed in the face of the changing climate

Mr McGavick expressed hope that the Insurance Development Forum (IDF) will properly prioritise insurance contributions to these efforts.

Mr McGavick described how insurers' mindset is on creating pools of risk that can be affordably shared, which is a different expertise to analysing weather patterns and is also different to thinking about a governments' specific role. The purpose of a society is to care for one another and that will not change. However, all around the world, risk/price signals are being skewed by government policies. This is a hugely destructive phenomenon. Human beings are drawn to the most high-risk regions (near coasts and mountains), yet governments consistently prevent insurers from pricing the risk appropriately.

We also need to understand better the patterns of risk in the developing world. The (re)insurance industry can contribute its risk knowledge and modelling tools, as well as product innovation. Initiatives such as the G7 InsuResilience and Lloyd's new facility offer great opportunities for public–private partnerships. Regional pools in the Caribbean, the Pacific and Africa are showing promise as starting points, but these initiatives each have their response to a localised area and are rather concentrated. Insurers also need to give concrete examples about the risks the world is facing. Insurers are one of the few groups in the world who have the expertise to flag up this macro-risk that is currently not being recognised by governments. Furthermore, governments consistently stop individuals facing their personal responsibilities for risk by preventing risk-based pricing signals. In an additional point about the responsibilities of governments, Mr McGavick pointed out that there is tremendous perversion built into the capital requirements of Solvency II, where capital charges are attached to certain asset classes, not least infrastructure, that prevent insurers from investing in the highly desirable characteristics that infrastructure investments represent.

Mr McGavick indicated that, whilst he felt pessimistic about what governments would do to achieve the two-degree limit on global warming, he was very encouraged by, and supportive of, comments from Bill Gates on the importance of scientific innovation and incentivisation rather than punishment to inspire climate-conscious behaviour.

Mr Mark Wilson reflected on the famous quote about the Roman Emperor Nero who was accused of 'fiddling whilst Rome burned' during the great fire of AD 64 and hoped that the leaders and generations of today would not be considered to have been a 'Nero' generation. He posited that insurers need to look at climate change as both an investment and an underwriting issue. Aviva with the Economist Intelligence Unit, recently conducted an analysis of the investment impact of a six-degree increase in global temperatures by the end of the century—the current trajectory. The report concluded that, for investors, the impact would be USD 13.8 trillion and for governments, it would be USD 43 trillion.

As an insurer and investor, Mr Wilson stressed that, when one looks at countries, it is important to encourage governments to improve prevention measures. New products help, but the essence is in working together holistically. Furthermore, whilst governments have USD 160 billion to invest in international development, insurers combined with the rest of the business community have some USD 300 trillion in capital markets globally. So the potential for significant investment exists if only they will enable it. As for emerging economies, Mr Wilson sees a number of areas that need to be addressed:

- There will be no significant investment in resilience and preventive measures by the private sector until government addresses the conflict between capital/solvency regulation and investment in infrastructure.

- The issuing of 'green bonds' represents a good opportunity for financing resilience and prevention measures whilst matching the long-dated liabilities of insurers.

- A UN General Assembly resolution on sustainable finance and insurance that enforces government compliance with the first two points .

Mr Wilson considered that the issue is not whether the two-degree global temperature increase will be reached—it will—but whether and how it will affect the population. Whilst, currently, (re)insurers deal with CAT insurance with a short-term view (one-year contracts and pricing adjustments), from a long-term view, this issue is more of a systemic problem. Significant amounts of investments are coming from the energy companies: Can the (re)insurance industry influence those more as an investor? 'Yes, we can and we are', he said. The (re)insurance sector is in a unique position, not only as investors but also as a bearer of the liabilities, which means that it should take a central position in this debate.

Right (clockwise from top): The extreme events and climate risk session panellists; Mark Wilson, CEO, Aviva plc.; Dame Julia Slingo, Chief Scientist, U.K. Met Office; (left to right) Gloria Grandolini, Senior Director, Finance and Markets Global Practice, World Bank Group; Mike McGavick, CEO, XL Group plc; and Mark Wilson, CEO, Aviva plc.; Erwann Michel-Kerjan, Executive Director, The Wharton Risk Management and Decision Processes Center; Denis Kessler, Chairman of the Board of Directors and CEO, SCOR SE.

The frequency of cybersecurity incidents is increasing. In the fall of 2014, the PricewaterhouseCoopers (PwC) annual global information security survey of corporate executives, which included 9,700 participants, reported that almost 43 million detected cybersecurity incidents occurred during the previous year – the equivalent of 100,000 attacks per day and a 48 percent increase over the number of incidents reported in the 2013 survey[3].

Cyber: Risk Without Borders

Chaired by Inga Beale | CEO | Lloyd's

Cyber risks are expanding at an exponential rate. During this session, it was emphasised how relatively easy it is to conduct cyberattacks—on personal data, important business information, banks, power plants or at national level through attacks aimed at undermining national security.

Very often cyber risk is associated with the theft of data. But the risk is much more far-reaching and includes data destruction/loss of data and data disruption—and combinations of these various forms of risk.

Cyber risk is not just a new risk which can be managed in a traditional way and left to the IT department of businesses. It is a fundamental business risk, and to manage it, it is necessary to consider all aspects of the business, including the culture. Cyber risk does give rise to opportunities for insurers, but also to many challenges. There is no established framework defining and scoping the risk, and calculations are made difficult because of the lack of suitable historical data and loss experience.

This session was chaired and opened by Lloyd's CEO ***Inga Beale***, who described cyber risks as transcending geographical borders and any traditional concept of insurance markets. Indeed, some of the most valuable commodities of the future will not be those of the past such as chemicals and hydrocarbons, but rather data and its accompanying services. With big data comes the risk of cybercrime and, as data and associated services become more and more important, so does cyber risk. According to a Thomson Reuters prediction, by 2025 almost all our electronic devices will be connected to the Internet in some way, and the data analytics industry itself will be worth USD 50 billion in just a few years. Data is being weaponised. G20 nations are suffering the bulk of losses, and the costs are running into the billions. Indeed, the annual cost of cybercrime is now estimated to be USD 450 billion, according to Ms Beale. Using a live map of attacks taking place around the world from Kaspersky Labs, Ms Beale highlighted the vulnerability of insurers and other businesses, as well as the opportunity for insurance to play a role in supporting its customers.

Éireann Leverett provided a demonstration of some of the hacking techniques used to access company systems. He showed how people using machines deceive other people and also how people use machines to deceive other machines. Mr Leverett developed three key themes in his presentation, firstly, how hackers get access to your data, secondly, how the attacks can be persistent and last over an extended period and finally, how the files that represent almost all data content (emails, pictures, videos and data) are technically files that represent a vulnerability. In a first example, Mr Leverett showed how a USB stick can be programmed to permit access by another computer. On being

PANELLISTS:

Inga Beale
CEO
Lloyd's

Hans Allnutt
Partner
DAC Beachcroft

Andrew France
Former Deputy Director
Cyber Operations, GCHQ, U.K.
Consultant Wynyard Group

Mel Goddard
Market Liaison Director
Lloyd's Market Association

Éireann Leverett
Senior Risk Researcher
Centre for Risk Studies
University of Cambridge

3 PwC, Managing Cyber Risk in an Interconnected World: Key Finding from The Global State of Information Security Survey 2015, paragraph 7 (September 2014), available at http://www.pwc.com/gx/en/issues/cyber-security/information-security-survey.html

plugged into the target computer, the programme on the USB stick creates a 'reverse shell' in which the USB stick registers itself as a keyboard and then 'types' a series of commands that open the target computer to the hacker's device, so that all the files on the victims computer can be accessed persistently each time the device is connected to the Internet.

In a second example, he showed how a rogue Wi-Fi access point can attract a Wi-Fi-enabled device and then capture and save the information that is conducted on the Wi-Fi device.

Mr Leverett commented that industrial systems tend to be considered secure but that, in his experience, they are far less secure than, for example, bank systems. The reason appears to be that the cost of failure for industrial systems and the desire to attack them has been underestimated. In a video demonstration, he showed how an industrial process system can be hacked and the username and password discovered, enabling abuse of the system. Forms of abuse include the changing of data to interrupt processes and cause system failures, or worse, industrial accidents, or the stealing of data to uncover secret information such as recipes for food products. Even after notification, it can take two years for these vulnerabilities to be addressed, Mr Leverett revealed.

As a former expert civil servant and now principal advisor on cyber risk, ***Andrew France*** described his two main concerns about cyber risks—technology transfer and capability. Technology transfer is the potential for an extremely experienced hacker to write a script and publish it on the Internet that any person could use. This massively proliferates the potential damage caused by individual, very capable hackers. Technology transfer is happening on a day-to-day basis. Data is a commodity that is now bought and sold. It is probably an individual's most valuable asset. The markets for it exist, but they exist in dark corners of the Internet. There are five key groups of hackers—script kiddies who can write code but are not hugely capable but can use sophisticated text written for them; the second is hacktivist groups, people who coalesce around a cause such as anti-G20 groups who use cyber as a vector to make their point; the third group is cybercrime groups—professional businessmen who use cybercrime as a way to generate revenue. For example, one spelling mistake stood between a bank in Bangladesh and a fraud of USD 950 million. A fourth group are politically motivated hackers—normally working for rogue states that supplant military power with cyberattacks. The top group is the nation state players who are doing it for economic gain and nation state ends.

The narrative about cyber is focused on data theft—it is by far the largest reported crime. However, this only represents a very small proportion of the other crime that is taking place.

A second risk is data disruption. In a world where everything is digital, if your IT system fails to function, then your business may also fail. Data disruption is becoming a really attractive proposition to hackers. This explains the rise in ransomware. Ransomware has been around since 2000 but, because we now keep almost everything we do on our mobile phones, it provides a single point of leverage on the individual.

Data is a commodity that is now bought and sold

Thirdly, data integrity. We have to be sure that information that is held jointly, for example, between an individual and a bank about an account, is consistent for both parties. This is important for financial services companies like insurers and banks but it is even more crucial for organisations like hospitals, where incorrect data could be life-threatening. Criminal fraternities are looking to extort money by changing the integrity of many forms of data—medical and financial data included.

Data destruction is a fourth key vector for criminals, the most recent example being Sony Pictures, where 50 per cent of the company's total infrastructure and data, including the back-ups, was destroyed. The code used in the Sony attack has been bouncing around the Internet since the attack took place, and the potential for less sophisticated users to take this code and use it themselves is evidence of the significant potential for damage caused by data transfer in action.

By focusing on data theft, we are missing three quarters of the threat, said Mr France. He underlined that cyber risk should not just be considered an IT risk which is handled within the IT department. It is a fundamental business risk, and to manage it, you must consider how you think of your business.

An example: How do you lay off people? Do they have access to your valuable data and can they misuse this access? Cyber risk can never be reduced to zero, but it can be managed and appropriate controls can be introduced so that proper intervention can take place.

Hans Allnutt echoed the comment by Andrew France about the confusion within companies about who 'owns' cyber risk. From Mr Allnutt's perspective, it is a business risk from an operational, informational and physical perspective.

From an operational perspective, in the last 12 months, Mr Allnutt pointed to a number of cyber insurance claims that he has handled, including a business that had suffered a distributed denial of service attack, losing GBP 5 million in profits in a matter of days, as customers were unable to access its site, and a company whose systems were encrypted with ransomware. These examples evidenced how a cyber risk can have very real financial consequences immediately, said Mr Allnutt.

The informational aspects arise not only from the increasing amounts of data that companies hold, but also from the changing legal regimes about holding that information. He pointed to a trend in the U.K. for attacks on law firms, where hackers use information to impersonate clients, and direct the firm to transfer client funds to accounts operated by the criminals.

He mentioned that the legal regimes on data are being changed, particularly through the EU's General Data Protection Regulation announced in May and which will come into force on 25 May 2018. Whilst politically it is aimed at big corporations who collect and use increasing volumes of personal data, the new law will apply to any company that processes data in Europe, or offers goods and services to European citizens from outside Europe. In respect of data security breaches, the law provides for fines of up to 4 per cent of annual worldwide turnover or EUR 20 million, whichever is higher. As an example, Mr Allnutt highlighted that, following Sony's data security breach in 2011, it was fined GBP 250,000 out of a maximum of GBP 500,000 by the U.K. regulator under the current regime. Under the May 2018 regime, Sony could have faced a fine of up to USD 1 billion.

The compensation regime is also changing in Europe, reflecting a desire by governments, courts and citizens that, when companies hold customer data and lose it, compensation should be paid. The new May 2018 regime allows for individuals to sue a company for their non-financial damage resulting from data breaches and also pass on their rights to a non-profit institution to pursue the case on their behalf—class action lawsuits by another name, said Mr Allnutt. The regulation is global in scope in that, even if you are not based in Europe, if you sell products and services into the EU, you are subject to this law.

From a physical perspective, there is also a real fear of physical assets being infiltrated and damaged, such as through the examples provided by Mr Leverett and Mr France. Even here the law is changing, where national critical infrastructure is obliged to inform government when it is attacked.

Mr Allnutt's final point was on notification, where, if a company becomes aware of a breach when the new regime comes into force, you have to notify the regulator within 72 hours. Indeed, rather than data being like the new oil, he likened the risks related to data liability as being the 'new asbestos', because the amount of data is so vast and so widespread that companies are rushing to understand what data they hold and where, in order that they can understand where their risks are.

Mel Goddard opened her comments by highlighting the need for a framework that describes cyber risks in order that any and all discussions between insurers and their clients take place on a basis of mutual understanding.

A new data breach product has been launched in recent years that is innovative and responsive to U.S. regulation. It will be launched elsewhere, including Europe, in the coming months. It has produced some minor surprises in terms of

frequencies and severity, and it is providing a sense of the extent of personal data breaches and the first - and third-party losses that are associated with it.

However, the much bigger and tougher challenges are the new exposures arising from the technological evolution of risk and how this impacts existing lines of business. The framework for that needs to deal with in-house computer systems, cloud storage, industrial control systems (including artificial intelligence and the Internet of Things), and finally, national critical infrastructures, which are the biggest challenge in terms of the physical risks, and business interruption losses.

From the ongoing debate, it seems that many stakeholders consider cyber risk an 'old risk manifesting itself in new ways'. But from an underwriting perspective, there are a raft of questions an underwriter needs to be asking and challenging in order to understand the new exposures. Cyber permeates many existing lines of business in new ways. Many property policies already include property definitions that may not encompass data or exclusions for data risks created for the Y2K event, but these wordings are as yet untested in this new cyber environment. Terrorism is excluded in many marine and aviation policies, whilst directors and officers (D&O) policies, for example, are silent on cyber, although the legislation described by Mr Allnutt will give rise to a board risk that sits potentially in a D&O policy, according to Ms Goddard.

The issues mentioned so far are all physical losses, but there are also a plethora of potential non-physical liabilities created by cyber. Contingent business interruption, reputational risk and loss of intellectual property are examples—this is cross-class and clearly systemic. From a practical standpoint, an underwriter is challenged to understand the probability and scale of a potential loss. To some extent new products are arising and a couple of the major brokers are trying to create products here, but there is a problem with a lack of data. The Department for Homeland Security in the U.S., and others in the U.K., for example, are proposing to collect data that will one day be helpful for insurers, but this is an immature area. Ms Goddard commented that, whilst there seems to be demand for new products to match these new risks, there does not yet seem to be any appetite to pay for new products. It is clear that losses are occurring, but they are uninsured, not hitting the headlines and therefore not driving real insurance demand at this point.

Historic examples show us that new products can be produced in response to new technologies—the motor and aviation industries are good examples—and initially these were set based to some degree on acts of faith by the insurer. Increased regulatory scrutiny has also been a driver of new policy development, in the liability area, for example. It is critically important that a mechanism is in

Above (left to right): Inga Beale, CEO, Lloyd's; Andrew France, former Deputy Director, Cyber Operations, GCHQ, U.K., Consultant Wynyard Group; Mel Goddard, Market Liaison Director, Lloyd's Market Association; Hans Allnutt, Partner and Leader, Cyber Risk and Breach Response Team, DAC Beachcroft; Éireann Leverett, Senior Risk Researcher, Centre for Risk Studies, University of Cambridge.

place for collecting data so that the exposure can be assessed and underwritten. The issue with cyber risk is that it is a cross-class exposure and an intangible world that is not readily understood, so this is not an easy challenge to solve, but to which insurers have to respond.

They have to define cyber risk and decide what exposures they want to give in order to be ready to meet their clients' needs, concluded Ms Goddard.

...cyber risk should not just be considered an IT risk which is handled within the IT department. It is a fundamental business risk

Right (clockwise from top): Inga Beale, CEO, Lloyd's; Éireann Leverett, Senior Risk Researcher, Centre for Risk Studies, University of Cambridge; Hans Allnutt, Partner and Leader, Cyber Risk and Breach Response Team, DAC Beachcroft ; cyber risk panellists; Andrew France, former Deputy Director, Cyber Operations, GCHQ, U.K., Consultant Wynyard Group; Mel Goddard, Market Liaison Director, Lloyd's Market Association.

Geo-political Dynamics Around the World

Robert D. Kaplan | Senior Fellow | Center for a New American Security

Dr Kaplan opened his remarks by stating that we avoid tragedy by thinking tragically. We live in a world that has more and more uncertainty. This doesn't necessarily mean that this will end in disaster, but it is a more anxious, complex and fraught world than ever before, where globalisation and geopolitics, rather than being in contradiction, actually reinforce each other. Now places are far more interconnected and interrelated than ever before. Geopolitics is operating in a more complex way than ever before.

What is it that we are seeing when we witness the collapses in Syria, Iraq, Yemen, and Libya, and the crises in Europe, Asia and the South China Sea? That we live in a post-imperial moment, an age of comparative anarchy—not absolute anarchy, just more anarchy than we had in the Cold War and the post-Cold War periods.

...it is a more anxious, complex and fraught world than ever before, where globalisation and geopolitics, rather than being in contradiction, actually reinforce each other

The post-imperial moment

We have been brought up in schools and colleges to believe that imperialism is evil, the original sin that the Western world inflicted on the developing world. As Oxford scholar John Darwin points out, the Cold War was imperialism by another name whereby the Soviet Union and U.S. were not official empires but, in a functional sense, their challenges and frustrations were the same as those of empires in the past.[4]

In the last decade, you see the weakening of or a more deliberate and cautious attitude on the part of the last remaining great power of imperial dimension—the United States. When the British and French empires collapsed, you did not have the breakdown of states; you had the rise of regional post-imperial strongmen like Saddam Hussain, Muhammar Ghaddafi and others. They operated according to the borders artificially set up by empires. Because those borders were contrary to ethnic and sectarian borders, these strongmen had to set up secular state identities. And because those borders were, in many cases, artificial, an extreme form of totalitarianism was required to keep the state together in the first place. They maintained order at an extreme price. Then they disappeared from the scene. The result of that was an utter void—sheer chaos. Why? Because they left no institutions in their wake. With weak institutions, there are weak state identities, and religious and cultural forms of identity fill the void. Then you have doctrinal battles. This is why the Middle East is the way it is today.

The U.S. during the Cold War and the years afterwards was able to project power through dictators. You only needed one phone number to reach a specific dictator. But the breakdown of dictatorships has made it harder for the U.S. to project power, because there are dozens and dozens of actors whose points of view have to be taken into account. Therefore, the U.S. finds itself in a more complex world where its influence is much less than it was.

The places in the Middle East that are the most coherent are Turkey and Iran. Iran has a deep civilizational sense of itself and it is therefore in a different category to

Left: In his keynote speech, Dr Robert Kaplan, Senior Fellow, Center for a New American Security provided an overview of the main geo-political dynamics around the world.

4 Darwin, J. (2007) *After Tamerlane: The Global History of Empire since 1405.*

many of the other Arab states. Iran may go on as an extreme grievance-driven regime that is still coherent and stable. Turkey will also go through domestic unrest, but it will always exist as a state. It's hard to say the same of its neighbours. Saudi Arabia is much less of a power; it doesn't cohere with the rest of the peninsula in the same way that Turkey does with its location and borders.

We will see a growth of regional and city states all acting together, and the picture of Europe will be more complex and multi-layered

Asia is the inverse of the Middle East. In the Middle East, my narrative has been on the weakening of states, whereas in Asia, the opposite is true. The geopolitical issues in the South and East China seas have mainly been due to the strengthening of states. Look at second half of the Cold War— China was internally focused, Japan in a state of quasi-pacifism, and Vietnam and Malaysia focused on civil wars and communist insurgencies; many thought Singapore would not last that long, and Taiwan was under an enlightened dictatorship. Now look where we are: all these countries are strongly institutionalised and are in a much more coherent state. China shows that capitalist success or pseudo-capitalist success over many decades leads to trading relationships and interests throughout the world that have to be defended and, with that, comes issues of status. With the emergence of status, a nation quite naturally wants to develop a military. This is not that different to the pattern that happened in the U.S. after the Civil War. With China expanding, Japan has returned to normal nationalism as its default option. Vietnam and Malaysia are now at peace and have been for decades; they are internally secure so that they build navies and air forces to counter the growth of China and meanwhile, Singapore has become this Israel-like military dynamo in the southern extreme of the South China Sea.

And technology has not negated geography. For most of history, India and China were largely unrelated to each other. Now Indian ballistic missiles can reach most Chinese cities as well as Chinese warships in the Indian Ocean. Fighter jets in southern China can reach most of the Indian subcontinent and Indian warships in the South China Sea. The defeat of distance through technology has led to a new geography of rivalry between India and China, and bought them together in a way that has not existed before, and this is how technology has made geography more claustrophobic.

Europe

French geo-historian Fernand Braudel wrote that Europe's southern border is not the Mediterranean but rather the top of the Sahara desert, because that is where the climatic system that defines Europe essentially ends. What we see now with refugees from North Africa and from the Levant is Europe dissolving into greater Eurasia, and North Africa and the Mediterranean basin can be thought of as one unit.

One of the many reasons that Europe was more or less peaceful, secure and prosperous during the Cold War years and the following decade was that it was functionally separated from the issues in Soviet Russia and North Africa.

Europe now faces an integration of sorts in terms of human traffic with the rest of Eurasia and Russia in a way it hasn't before. If you look at the growth rates of populations in Africa and sub-Sharan Africa compared to Europe, you see that the refugees might just be the tip of the iceberg in terms of migration pressure. Divisions within Europe are on the increase.

Jan Zielonka[5] has suggested that, in a positive way, a new medievalism will come to exist in the EU whereby the EU will still exist but it won't be a one-dimensional super-state. We will see a growth of regional and city states all acting together, and the picture of Europe will be more complex and multi-layered.

China and Russia

There is a debate on how deep the economic crisis in China will go. For the last 35, years we have had non-charismatic, collegial risk-averse technocrats running China. Because of that, foreign policy towards China has been fairly bipartisan without the ideological battles you see in Washington. In other words, China, run by authoritarians, was predictable—as good a situation as you could possibly get in such a huge region. The next 30 years in China will not be as easy as the last 30. A more charismatic leader emphasising central control with the cult of personality has emerged to face off domestic challenges. The anti-corruption drive is what it purports to be, but it is also a purge of enemies. So the domestic situation will become more fraught, which could lead to more aggression in the South China Sea, because one way to deal with domestic disarray is through an appeal to nationalism.

Concerning Russia, the one thing more dangerous than Russian military strength is Russian internal weakness. The economic situation in Russia is much more severe than that in China, and Russia is a more weakly institutionalised state than China. What you can really see in Putin is the legacy of 70 years of the Soviet Union run by a narrow group of elite in Politburo style. With oligarchs instead of chieftains on top, very weak institutions below, and a somewhat chaotic and criminalised version of capitalism and a deepening economic crisis, Russia will not collapse, but we could see a weakened state that becomes more aggressive and all that this entails.

That is why we live in an age of comparative anarchy, meaning more risk and more uncertainty, in comparison to more predictive eras such as the Cold War and the years immediately afterwards.

The U.S. has had unimpressive economic growth during the last years. It's technically close to full employment, but many of the jobs created are low-quality jobs. What I have discovered is that the U.S middle-middle-class is disappearing. A small number are moving up into an upper-middle-class-segment, but the majority are moving into the lower class and are only one or two unforeseen incidents away from poverty. The issue is that this quiescent middle class has generally been supportive or at least permissive of American foreign policy, asking for policy that prevents future 9/11s but does not extend as far as the Iraq invasion. Anything in between was considered OK. That middle-middle class is dissolving, and this may lead to a sea change in U.S. foreign policy.

5 Zielonka , J. (2006) *Europe as Empire: The Nature of the Enlarged European Union.*


GEORGIA
Tbilisi
ARMENIA
Yerevan
Tabriz
Tehran
Qom
TURKEY
Samsun
Adana
Aleppo (Halab)
Mosul
Baghdad
SYRIA
Beirut
Damascus
Amman
IRAQ
Basra
JORDAN
Sakākah
Aqaba
CYPRUS
LEBANON
ISRAEL
Jerusalem
Sinai

Geo-Political Dynamics—a New World Disorder?

Chaired by Dr Nikolaus von Bomhard
| Chairman of the Board of Management | Munich Re

Nikolaus von Bomhard introduced the session by observing that insurers are confronted with an ever longer list of risks, some of which they are not used to handling—political risks and economic risks as well as security risks. The first question is, has the world economy become more insecure—is it perception or fact? The answer is that it is probably fact, but what are the ultimate implications of these developments for us as citizens of the world, for the corporations we run and for the business we are responsible for?

Dr von Bomhard went on to point out that it is not only the amount of risk that increases but also the interconnectedness of risks. If one takes the fall of the Iron Curtain, one might presume that the world would have become a more stable place. But, if you count conflicts after the fall of the Iron Curtain there are about three times as many conflicts as there were before. And, with these conflicts, the international toolkit no longer seems to work. Syria is a good example here, where you have to disentangle several different conflicts— rich versus poor, sectarian divides, minority versus majority, proxy wars of different nations—all of these things entangled in a single conflict. Perhaps for insurers, there are times when the way that we handle risks and our expertise in analysing risks may be helpful to politicians, he suggested. But it seems that the accumulation of uncertainty confronting the world today is unprecedented—extremism, fragmentation, segmentation, isolationism and protectionism, are just some examples of the issues that face us today.

Carl Bildt

Carl Bildt began by highlighting that the U.S. National Intelligence Council have the job of producing a document every four years to give to the incoming new or returning president as a briefing on global geopolitics. The draft produced for the forthcoming new U.S. president described the outlook as 'messy and volatile'.

Looking back at where we have come from, we had a period of some sort of stability during the Cold War—an intense rivalry between the two major powers that stabilised a divided Europe, but also the danger of that confrontation turning into nuclear Armageddon. Then we saw the collapse of the Soviet empire, the opening up of China and the liberal economic reforms in India and went into a quarter of a century that has been among the best decades that mankind has seen. There are more democracies, economic growth that has lifted hundreds of millions out of poverty, a dramatic reduction in deaths from disease, and a reduction in child mortality to a fraction of its former levels. In fact, nearly every indicator of economic and social stability and progress has moved in a good way and more dramatically than ever before. Of course, one of the areas most significantly aided was Eastern Europe, where we were able to take 10 nations formerly within the USSR from their rather desperate situation and provide them with some sort of democracy, some sort of market economy, some sort of stability. The thought that we could achieve this without a war was unthinkable until then.

PANELLISTS:

Dr Nikolaus von Bomhard
Chairman of the Board of Management
Munich Re

Carl Bildt
Former Prime Minister of Sweden

Eric Chaney
Chief Economist
AXA Group

Robert D. Kaplan
Senior Fellow
Center for a New American Security

Things now have shifted and we are now in a new era.

Mr Bildt described the new paradigm as the 3 D's:

Davos—the world of globalisation that predominated during that era—an almost constant economic growth of 4–5 per cent per year was a time of great growth and prosperity. Since the near-death experience in 2008 with the failure of Lehman brothers, economic growth has stalled, and for nearly seven years now, growth has been weak or non-existent.

Donetsk—the name of a Ukrainian town, this reflects a more brutal form of geopolitics than we have seen in a long time. The geopolitical landscape is characterised by a clearly revisionist Russia, an assertive China and a, in a number of ways, hesitant West. The U.S. has retrenched somewhat with public opinion affected by the long war in Afghanistan and the issues in Iraq. Russia and China are visibly testing the limits of their power and pushing the envelope to gain advantage and respect internally. Russian President Putin recently said in a speech that we are living through a time of great change and that these periods are marked by regional wars. It is instructive that this is the narrative he is pushing, which echoes a very similar narrative from the Chinese in the South China Sea. Furthermore, there is a blurring of lines between war and peace. The rise of cyber warfare and the proliferation of non-linear insurgencies is fuelling this sense of uncertainty. The net result is that the West is no longer projecting stability out into the world but rather, its neighbours are projecting their instability back into Europe.

Dabiq—is a village in Syria that, among some Islamic scholars, is their equivalent of 'Armageddon', where the final battle between good and evil is believed to take place. It also happens to be the name of the propaganda magazine of Daesh. This is, of course, only the latest incarnation of the waves of violence from inside the civilisation of Islam. Al-Qaeda was one, and Daesh is another—the politics of identity have become very strong, and this is an Islamic version of the struggle for identity. This is a region that is likely to go through significant change in the years to come. The return of geopolitics, assertive powers—be they rising or declining—and conflicts, rivalries and the blurring of lines. It is likely to see information warfare and cyber warfare as well as physical battles in the years ahead.

So what is the silver lining, Mr Bildt asked? That nuclear war did not happen, that that enormous danger is gone. After this period, we will live in a period of constantly evolving dangers, and their build-up is somewhat concerning. We could also have been in a war between Israel and Iran; that war is also gone, and that is a testimony that, in spite of the dangers, there is still room for diplomacy in this world.

...in spite of the dangers, there is still room for diplomacy in this world

Eric Chaney

Mr Chaney posited that one area for potential concern is the likelihood of civil and political unrest as a result of economic fundamentals. He described two big factors that might fuel potential unrest; one is macroeconomic risk, what former U.S. Secretary of State for the Treasury Larry Summers calls 'secular stagnation'. The second is the more microeconomic impact of the ongoing revolution in technology on the distribution of income, that the majority of income in the new economy is now concentrated among a very small number of elite people.

Secular stagnation is a thesis that sits very well with the facts that we see today. There is an imbalance between supply and demand, and that is why we are living in a low inflation or even slightly deflationary environment. What is the cause of the imbalance between supply and demand? Is it overcapacity? There is some overcapacity in manufacturing in China; there is some overcapacity in some sectors such as cement or steel. However, according to the World Bank there is an annual unfunded infrastructure requirement of some USD 2 trillion in emerging markets. So the issue is not one of supply but rather a lack of demand that is creating this soft deflationary world. Why is that?

Deflation of debt bubbles in the past has always caused a deflationary environment, especially when driven by the housing market. After a debt bubble, debt is considered to be evil, and there is a strong aversion to risky decisions on the corporate side. Governments meanwhile work hard not to increase debt and this causes a lack of demand. Because it is not the consumer at the root of the issue but rather corporations and governments, this implies slower growth in the longer term. Central banks had the right answer when trying to stimulate demand by lowering interest rates. However, when they get to zero, try negative rates and then realise that this is tricky for banks, they lower bond yields over the entire curve by buying assets. Once you have done that, you have reached the limits of what monetary policy can do. So, it is a tool that has reached its limits, and we are now seeing the side effects in the system. If the symptom is a lack of demand, then it is up to governments to spend more provided doing so strengthens future competitiveness and growth. Investing in emerging market infrastructure is an obvious thing to do. Although governments in many countries do not have the capacity for this, there are enough private sector savings in the world to do it. It is also worth noting that, if insurers are able to invest in infrastructure, then they not only get a good return, but they also invest in a public good. So, if the solution does not come from governments, then central banks will keep rates very low but, at some point, slowing potential growth will meet demand and then we might see the return of cyclical inflation in a situation where everyone is convinced that low inflation is here to stay for the next 30 years.

Above (left to right): Carl Bildt, Former Prime Minister of Sweden; Dr Nikolaus von Bomhard, Chairman of the Board of Management, Munich Re; Eric Chaney Chief Economist, AXA Group; Robert D. Kaplan, Senior Fellow, Center for a New American Security

One more consideration is, and it's not a risk for the next three to five years, that the monetary policies that are being put in place now might generate a loss of confidence in money, in which case, we won't have deflation but very high inflation.

...monetary policies that are being put in place now might generate a loss of confidence in money, in which case, we won't have deflation but very high inflation

The second source of economic risk which I see, and it is hard to counteract, is innovation. Innovation in technology is taking place in all disciplines of science. The fact is that with globalisation, the new capital created by technology has this incredible possibility to reproduce itself at almost no cost. In that instance then, the benefits only go to those who have done the innovation. Of the income generated by new technology, 80 per cent is going to 5 per cent of people, and this is creating huge tensions. One thing is for sure: the frustration in populations is more likely to increase rather than decrease, which is fuelling populism, not only in the West, but also in the developing world.

Above (clockwise from top): (left to right) Dr Nikolaus von Bomhard, Chairman of the Board of Management, Munich Re; Eric Chaney Chief Economist, AXA Group; Robert D. Kaplan, Senior Fellow, Center for a New American Security; Eric Chaney, Chief Economist, AXA Group; Dr Nikolaus von Bomhard, Chairman of the Board of Management, Munich Re; geopolitical session panellists; Robert D. Kaplan, Senior Fellow, Center for a New American Security; Carl Bildt, former Prime Minister of Sweden.

Photo Gallery

Social events and networking

Left: General Assembly attendees. Above: GA Chairman Mike McGavick thanks and bids farewell to long-standing Board Members (top) Nikolaus von Bomhard, Chairman of the Board of Management, Munich Re, and (below) Michel M. Liès, Group CEO, Swiss Re Company Ltd.

Left then clockwise (each photo, left to right): Bronek Masojada, CEO, Hiscox plc; Willem A. J. van Duin, Chairman of the Executive Board, Achmea Holding N.V.; Sten Dunér, President and CEO, Länsförsakringar AB; Peter Hancock, President and CEO, AIG, Inc.; Constantine Iordanou, Chairman and CEO, Arch Capital Group Ltd.; Albert Benchimol, President and CEO, AXIS Capital; Ulrich Wallin, Chairman of the Executive Board, Hannover Rück SE; General Assembly hosts Carlo Acutis, President Emeritus, Vittoria Assicurazioni SpA and Philippe Donnet, Group CEO, Assicurazioni Generali SpA

Above, clockwise (each photo, left to right): Yan Wu, Chairman, The People's Insurance Company (Group) of China Ltd.; Christopher Williams, CEO, Tokio Marine HCC; Markus Riess, Chairman of the Board of Management, ERGO Insurance Group Corporation; John R. Strangfeld, Chairman and CEO, Prudential Financial Inc.; Nikolaus von Bomhard, Chairman of the Board of Management, Munich Re; Eric Chaney, Chief Economist, AXA Group; Carl Bidlt, former Prime Minister of Sweden

Above then clockwise (each photo, left to right): Kevin J. O'Donnell, President and CEO, RenaissanceRe Holdings Ltd.; Emmanuel Clarke, President and CEO, Partner Re Ltd.; Charles Philipps, CEO, Amlin plc; Inga Beale, CEO, Lloyd's; Herbert Haas, CEO, Talanx AG; Edward J. Noonan, Chairman and CEO, Validus Holdings Ltd; Ajit Jain, President, Berkshire Hathaway Group

Above (left to right): Breakfast with Italian Finance Minister, Pier Carlo Padoan
Below (left, then clockwise): Anna Manning, President, Reinsurance Group of America, Inc.; Mel Goddard, Market Liaison Director, Lloyd's Market Association; (left to right) Yasuyoshi Karasawa, Chairman and Representative Director, Mitsui Sumitomo Insurance Co. Ltd.; Tomoatsu Noguchi, President and CEO, The Toa Reinsurance Company Ltd.; (left to right) Philippe Donnet, Group CEO, Assicurazioni Generali SpA; Yoshihiro Kawai, Secretary General, IAIS; Shuzo Sumi, Chairman of the Board, Tokio Marine Holdings Inc.

Above (Left then clockwise): Assicurazioni Generali, lead host of this year's General Assembly; (left to right) Emmanuel Clarke, President and CEO, Partner Re Ltd.; Nikolaus von Bomhard, Chairman of the Board of Management, Munich Re; Albert Benchimol, President and CEO, AXIS Capital. (left to right) Herbert Haas, CEO, Talanx AG; Ajit Jain, President, Berkshire Hathaway Group; Ignacio Eyries, CEO, Caser Group; Sten Dunér, President and CEO, Länsförsakringar AB. Below: General Assembly attendees

The farewell dinner overlooked the dome of San Carlo al Corso.

Photo credits

Cover: Rome Skyline by Bert Kaufmann from Roermond, Netherlands under CC BY-SA 2.0, via Wikimedia Commons

P. 10: European Central Bank, Frankfurt by Epizentrum (own work) under CC BY-SA 3.0, via Wikimedia Commons; p. 20: A Film strip by Bart from New Orleans, Louisiana, USA under CC BY 2.0, via Wikimedia Commons; p. 26 Palazzo della Banca d'Italia (Perugia) by Dawid Skalec under CC BY-SA 3.0, via Wikimedia Commons; p. 31: The Creation of Adam by Michelangelo, in the public domain; pp. 32: Alberta fire, Canada By Cameron Strandberg from Alberta, Canada (own work) under CC BY 2.0, via Wikimedia Commons; p. 40: Code, hacker by tigerlily713, in the public domain, via Pixabay.com; p.52: Syria, middle-east by ErikaWittlieb, in the public domain, via Pixabay.com

This General Assembly Review is a retrospective on some of the key discussions in Rome at the 43rd annual General Assembly of The Geneva Association. Members discussed challenges and opportunities in the areas of financial stability and regulation, disruption, extreme events and climate risk, cyber and geopolitics. Our speakers included a Nobel Prize-winning economist, the Italian Minister of Finance and a former Prime Minister, as well as a current and former central banker, a national chief scientist and an array of some of the world's leading experts in the subjects under discussion.

The Geneva Association—'International Association for the Study of Insurance Economics'
Talstrasse 70, CH-8001 Zurich | Tel: +41 44 200 49 00 | Fax: +41 44 200 49 99
secretariat@genevaassociation.org