

# Future risk

## Insuring for a stronger world

Centenary Future Risk Series: Report 6

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*The CII wishes to thank Ben Franklin, former policy and research manager at the CII for authoring, editing and compiling the Future Risk reports. We would also like to thank the expert authors for providing such compelling and insightful essays which have sat at the heart of the series.*

## Foreword

2012 saw the Chartered Insurance Institute celebrate its centenary year as a chartered professional body. Whilst it is important to celebrate the successes of the past, we should not take the future for granted. Rather, we must strive to build an industry that is well equipped to meet the needs of tomorrow's world. Therefore, to mark our centenary, we have published a series of reports, each of which explores some of the risks and opportunities that might face the industry in the decades to come, drawing on the assessment of commentators across various fields of expertise.

Whilst 'future gazing' does not always lead to accurate predictions, it is an important exercise for the insurance industry to undertake as understanding and assessing emerging risks is at the heart of what we do. Indeed, central to the role of insurance is the ability to make informed, professional judgments about the relative risks of various hazards occurring over a particular period of time. By planning for the long-term and challenging assumptions about what the future might look like, the profession will be well placed to provide expertise and insight on the risks that lie ahead.

But this series is about more than just preparing the insurance industry for future challenges. It is also about building a strong, cohesive narrative that demonstrates the long-term potential value of the industry to society more broadly. This final report in the series is, therefore, the culmination of a year's worth of research, debate and intellectual argument spanning many different disciplines, and considering a large number of diverse and complex risks.

We hope that this report and the rest of the Future Risk series, has provided much food for thought about some of the key insurance sector and public policy challenges of the coming decades and has stimulated some scenario thinking of your own. And most importantly, we hope to have demonstrated many of the ways in which the industry can help to build and sustain a stronger world.



**Amanda Blanc**

President of the Chartered Insurance Institute

## Introduction

This report is the last in the Future Risk series marking the CII's centenary year as a chartered professional body. At its heart, the series has sought to identify risks that are likely to shape the world's future and discuss what the potential implications of these risks might be for society, the insurance sector and financial services in general. Inevitably the series has also sought to address how the insurance profession can devise strategies to help avoid or mitigate some of these risks and thereby deliver a better future.

The series has spanned five special reports over the course of 2012, focusing on risks related to: socioeconomic change, global warming, technological change and global ageing, amongst others. This sixth, and final report, brings the series to a close by reflecting on the arguments, insights and evidence embedded in the previous reports and develops a synthesis to provide an evidence base for some overarching recommendations for the insurance industry.

To achieve this aim, the report is split into five sections:

**Chapter one** revisits the approaches and methods that have been used during the series to gain insights into risks facing the industry and what it can do to mitigate them. As such, the discussion is centred on a technique known as scenario planning.

**Chapter two** sets out one final scenario based on the findings of previous Future Risk reports. It is a utopian vision from the perspective of a respected international affairs magazine in the year 2030. The vivid news article entitled "*The remarkable decade*" describes the kinds of actions from key stakeholders – including insurers – that will be necessary to deliver a better future.

**Chapter three** reveals the results of two major opinion polls into risk perception. The first of these is an opinion poll conducted for the CII by Ipsos MORI to identify how members of the public perceive the relative likelihood and impact of different risks (i.e. cyber attack, terrorism, overpopulation) occurring over the coming decades. The second major survey is an opinion poll into the risk perceptions of experts – namely CII members – regarding a similar set of risks.

**Chapter four** builds on the insights gained from these preceding chapters to set out some high level recommendations for the industry. We label our set of recommendations a "manifesto", because in many ways it is a call to arms which focuses on two specific areas: 1) how the industry can face up to some of the challenges posed by a dynamic and evolving external environment, and 2) how the industry can continue to demonstrate its relevance to the communities and societies it serves.

**Chapter five** concludes the report by reflecting on the main purposes of the Future Risk series, and the ways in which firms and practitioners might wish to use the reports going forward to prompt some of their own thinking about the future.

Before we begin on this journey, a quick "health warning" is necessary. What follows is not intended to be the final word. Thinking about and shaping the future must always be an iterative process; a process which evolves over time as new challenges emerge and better methods of investigation are developed. This report is also not intended to be a substitute for firms and practitioners doing their own scenario thinking about the future. Indeed, we strongly encourage organisations to utilise some of their own substantial brain power to address those specific risks that are likely to have strategic impacts in both the short- and the long-term. But this should provide a useful starting point.

## Executive summary

- The Future Risk series has sought to understand what risks are likely to face the insurance industry over future generations and what role the sector can play in building a secure and prosperous world.
- Scenario planning, broadly defined in terms of narratives, dialogues and discussions about the future has been the approach most closely followed throughout the series.
- In order to investigate some of the many relationships between the different risks considered over the course of the series, the final report develops one last scenario – a fictional news article from the year 2030.
- The news article illustrates how the insurance industry can play an important role, in supporting economic growth and development, in improving adaptation to climate change, in facilitating adequate retirement incomes in the face of global ageing and in driving improvements in risk management related to the development of new technology.
- But the industry cannot work alone. Governments and policymakers will play pivotal roles in determining the world’s future. Consequently public opinion, which “constrains or compels political action” will be critical in determining local, national and international responses to different types of risk.
- To shed some light on public opinion about the risks discussed over the series, we commissioned Ipsos MORI to survey a sample of global citizens from a selection of developed and developing countries. Our findings indicate that overpopulation and rising income inequality are perceived to be the greatest risks for many of the respondents.
- We also conducted a separate opinion poll amongst CII members to tap into the views of risk specialists. When comparing the results of both, we find that there may be material differences in risk perceptions between risk specialists and the general public, particularly with respect to the occurrence of cyber crime and terrorism.
- More work is needed to identify the extent to which perceptions diverge, but clearly the insurance industry has a key role to play in educating and informing the general public, not to mention policymakers, on many of the global risks that lie ahead.
- By building on the 2030 news article as well as the results from the two opinion polls, the penultimate chapter of the report sets out some high level recommendations for the insurance sector.
- We argue that the extent to which the industry is able to evolve as a profession, is able to innovate in the consumer interest, to communicate with the public as well as with government and policymakers, and to make sense of diverse and complex risks through a range of stakeholders, will determine the sector’s future relevance to the societies it serves.
- The insurance industry’s past shines with creativity and innovation which has allowed it to continue providing a service that is central to the functioning of a healthy economy. It is crucial that the industry continues to play this role, for as this series has repeatedly shown, a sound and stable insurance industry, has a key part to play in building a secure and prosperous future for us all.

## Approaches and methods (revisited)

### The problem

This series has sought to identify risks that are likely to shape the world's future and discuss what their potential implications might be for society, the insurance sector and financial services in general.

### Identifying a solution: methodology

#### Scenario planning

We began the series by noting that there are many perils of prediction. History is littered with examples of relatively short-term predictions that have turned out wrong, so trying to foresee precise trends and events twenty years or so from now is likely to be, apart from in some exceptional cases, a dangerous exercise – especially when there are multiple variables involved. It is more rewarding to build a number of possible models of the world or scenarios describing different types of futures. This allows policymakers and strategists to identify and consider the types of responses they might need to adopt should different states of the world emerge. Therefore scenario planning, broadly defined in terms of constructing compelling narratives, discussions and dialogues on the future, has been the method most closely followed throughout this series.<sup>1</sup>

#### Building the scenarios

In order to build scenarios on the future, this series of publications began by undertaking extensive desk and survey research to uncover key risk drivers around **four themes: socioeconomics, demographics, climate change (including energy security) and technology**. This approach is consistent with similar scenario building projects<sup>2</sup> though the initial research stage is seldom publicly reported in full. In light of the risks and key risk drivers identified during this first phase, we invited world leading experts from a multitude of disciplines to write detailed essays (2,500–3,000 words) providing their views on what these risks might mean and what action can be taken to mitigate them.

Twenty renowned experts responded to our call for evidence, providing narratives about the future. We are extremely grateful for their insights, which have illuminated this series. Using their analysis coupled with the results of our initial desk and survey research, each report developed three scenarios: an upside, central and downside, outlining different states of the world depending on the types of policy measures deployed by governments and the actions taken on the part of the insurance industry. In total then, we developed twelve different scenarios – three separate scenarios for each theme. These were not meant to be concrete forecasts of the future; rather they were intended to provide the basis on which firms could base some of their own internal discussions about what the future might hold and how different firms might react as different futures unfold.

<sup>1</sup> For an in-depth discussion of the relative benefits of scenario planning read, Government Office for Science (2009) “Scenario Planning: Guidance Note”

<sup>2</sup> See for example, OECD (2003) “Emerging Systemic Risks of the 21st Century”, and World Economic Forum (2012) “Global Risks 2012: Seventh Edition”

## Understanding interactions between the risks

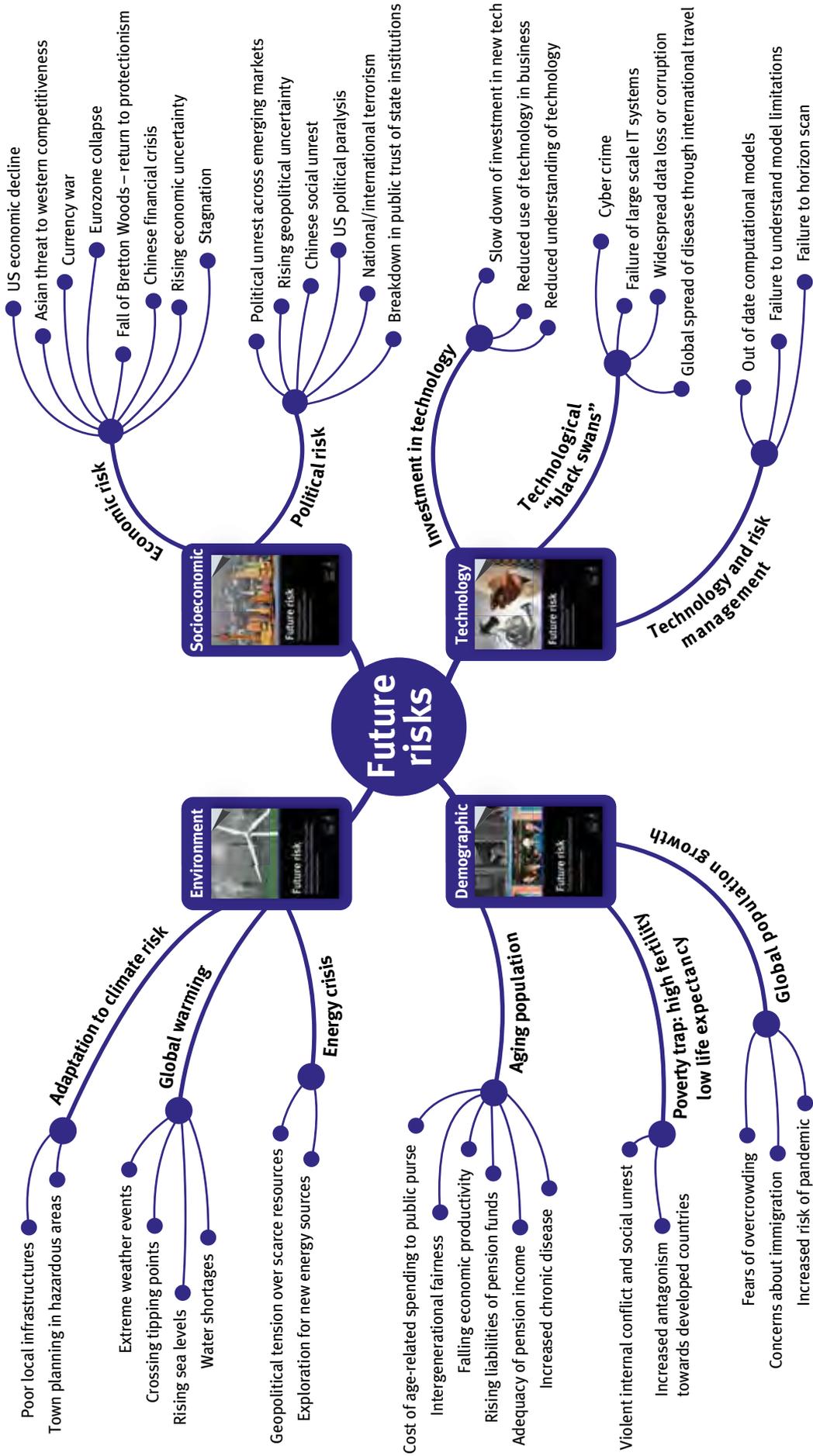
Throughout the series we took the view that, in the first instance, a thematic approach to identifying future risks would be simplest to conduct as well as provide the most understandable messages to keep readers engaged. But there is one obvious problem with this – many of the risks identified over the course of the series do not fit neatly into one specific theme or another. Indeed, many of the risks interact with one another intensifying some risks whilst reducing others. It would, therefore, be something of an oversight if we did not address some of the relationships between the different risks and risk drivers before the series is brought to a close.

Consistent with the approach taken by the World Economic Forum,<sup>3</sup> in order to investigate some of the relationships between the different risks, the following chapter outlines one final scenario based on all of the research conducted so far. The scenario takes the form of a vivid fictional news article from a respected international affairs publication during the year 2030 and includes reaction from experts at the time. We intersperse this with quotes from the Future Risk series to demonstrate some of the source material. Finally, we use this news story along with the latest survey research into perceptions about future risks, as the evidence base for some high level recommendations for the industry.

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<sup>3</sup> This is consistent with the approach taken in: World Economic Forum (2009) “The Future of the Global Financial System: A Near-Term Outlook and Long-Term Scenarios”

# Future risk mind map: some of the risks considered during the series



# approaches and methods



## Special report: The remarkable rebound

It may be hard to imagine now, but less than twenty years ago, the world was concerned about a repeat of a 1930s style Depression and a prolonged “lost decade”. The financial crisis had turned into a sovereign debt crisis threatening to bring down Europe, US policymakers looked paralysed when it came to dealing with their own government finances let alone maintaining an effective and credible foreign policy, and China and India were still in the process of defining their roles on the world stage. And let’s not forget those turbulent events in the Middle East. In addition to these issues, there were growing concerns about global ageing and climate change which threatened to exacerbate many of these problems.

The panacea was seen to be increasing growth and investment in technology, but even here there were growing concerns that “black swan”<sup>4</sup> events like the failure of large scale IT systems running power stations or widespread cyber crime might deter further innovation.

### Global leadership

Remarkably, the world pulled itself out of the mire. In the first instance, this was due to effective and collaborative global leadership. One of the world’s leading professors of political economy, Elizabeth Faulkner, Fellow of the Institute of International Studies, believes that the G20 Summit of 2016 was the crucial turning point. Nicknamed “The summit for growth” Professor Faulkner has argued that it set the “foundations for better relations between the developed world and the fast growing emerging economies”. The crucial trade agreement was struck at 4 am on the final day of the Summit. Following intense negotiations from leaders on all sides, it was agreed that China and India would, over a twenty year period, substantially reduce import tariffs to allow for greater Western-led exports to Asia. The US and Europe also agreed to reduce their own import tariffs to stimulate greater demand, particularly for primary sector goods from developing countries. Indeed it was accepted by major EU powers that the now infamous Common Agricultural Policy should be repealed.

In her acclaimed book, “*Versailles to Seoul: Summits that changed the World*”, Professor Faulkner reflects on the fateful G20 agreement: “...this was the Eureka moment when the world’s major economic powers decided to act in accordance with the long-term interest rather than for short-term political gain. With sudden vigour and purpose, they all realised that without immediate action to address the imbalances (in particular related to global consumption), not only would absolute levels of poverty rise, but that the stability of governments and regimes would soon come into question. Circumstances meant that their hands were forced, but world leaders still had to commit, and thankfully they stepped up to the plate”.

The G20 agreement set the building blocks for the rebalancing of the global economy witnessed over the last decade. It seems strange now, but back in 2012, then UK Chancellor George Osborne noted how the UK exported more to Ireland than to all of the BRIC countries combined (BRIC countries accounted for just 8.7% of UK exports)<sup>5</sup>. How things have changed – today BRIC countries account for nearly 50% of UK exports!

<sup>4</sup> “Black swan” events are low likelihood, very high impact events. They are, by their very nature, hard to predict. In Future Risk 4: “How Technology Could Make or Break our World”, Dr Peter Taylor discusses black swan events at some length

<sup>5</sup> Stephanie Flanders (2012) “*Re-routing UK trade*”, article for the BBC available from: <http://www.bbc.co.uk/news/business-17690854> [last accessed 9 December 2012]

“Strategists...must fundamentally reconsider the structure of various current global institutions. The G8, for example, will likely become obsolete as a body for making global economic policy. The G20 is already becoming increasingly important and this is less a short-term consequence of the ongoing global financial crisis than the beginning of the necessary recognition that Brazil, China, India, Indonesia, Mexico, Turkey and others are becoming global economic powers.”

Professor Jack Goldstone (2012), excerpt from essay for **CII Future Risk Report 5**

But the G20 Summit was not the only reason for what some have termed the “remarkable decade”. In 2016 Europe was still stuttering between two extremes – full fiscal and monetary union on the one hand or the breakup of the single currency on the other. For a number of years European leaders had tried to fudge the issue, taking measures to prevent countries like Greece from defaulting on their debts, but these measures were never seen as more than sticking plaster and a long-term solution was overdue. Finally, in the wake of the G20 (now the G30) success and buoyed by a number of core European member states emerging from recession, in late 2017, European leaders finally “grasped the nettle” and settled on a direct resolution path to full fiscal union and most sensationally of all, political union too.

No one could say that the transformation towards a new and deeper Europe has been easy, and the prospect of foregoing a degree of national sovereignty led to protests and some riots in the early years, but, on balance, it could be argued that the first seven years of a Federal Europe have been far better than the alternative of a painful Eurozone breakup. The numbers speak for themselves – all countries, even those from the so called “periphery” have experienced three years of continuous growth, declining unemployment and stable (real) inflation. Part of this improvement is of course down to increasing trade with the developing world following the gradual removal of import tariffs and subsidies, but the absence of sudden crises related to the solvency of governments has also helped lead to a surge in confidence in the Euro area and a growth in investment spending.

“In the bad scenario, the US economy slows sharply. The breakup of the Eurozone leads to a massive financial crisis in Europe, causing US unemployment and fiscal deficits to rise further...The overriding lesson is that there is more at stake in current economic policy debates in Washington and Brussels than most people realise.”

Dr Uri Dadush (2012) reflecting on the implications for the US economy of a Eurozone breakup. Excerpt from essay for **CII Future Risk Report 2**

## A private sector led recovery

Whilst the international agreements paved the way for an economic recovery, this still needed to be secured through a surge in private sector-led growth. In this context, another important factor in explaining the remarkable decade, has been the continual growth of technology related business and high-end manufacturing across Western Europe.

The story of Irish inventor and entrepreneur Tom McKinney sounds familiar. Like many great innovators he began at an early age, building component parts for computers and mobile phones from his parents’ garage before he was 12 years old. Six years later he had developed the world’s most efficient cooling device for laptops and tablets – an invention that would help make him a millionaire by the time he was 20.

But it was not all plain sailing. In his autobiography, “*Dreaming of Ireland’s Silicon Valley*” McKinney writes about the trials and tribulations of getting a product from prototype to mass distribution. “I knew I had a great product but had no idea about how to get it to market. I was a technology whizz not a businessman”. Ultimately it was his University’s science department that put him in touch with a number of prospective financiers, including Julia Tammy, who would become his business partner and Chief Operating Officer. McKinney notes that “Julia knew about things like recruitment and finance which became absolutely invaluable as we would soon find out.”

On 05 March 2018, just one month after the business had started to manufacture significant quantities of the new fans, one of the machines being used in the manufacturing process caught fire. An industrial accident transpired with the entire plant catching ablaze destroying virtually all of the equipment, though fortunately no one was injured.

“This could have been the death of the project and potentially the business” said McKinney, “but our insurers paid out for the damage to equipment and buildings as well as for losses we incurred through lack of trading. This crucial support allowed us to rebuild in less than three months...Most start-ups think achieving adequate funding from investors is the Holy Grail and of course this is a necessary condition, but we also learned first-hand the importance of having our risks fully underwritten”.

COO Tammy continues to speak with the firm’s brokers on a regular basis to ensure that their risks are fully understood by all parties concerned as the business continues to evolve. Speaking about their brokers in a recent interview with trade publication Insurance Today, Tammy notes, that “...their in-depth knowledge of the specific business area, and willingness and ability to find the appropriate cover for significant and complex risks has been an important factor in our success”.

The story of McKinney and Tammy is an example of the entrepreneurial spirit that has gripped much of Western Europe over the last decade, fuelled by the international free trade agreements, and supported by willing and able financial services intermediaries who have understood the risks related to new business ventures. According to the International Organisation for Economic Progress, the number of European technology start-up businesses has increased five-fold since the path to EU political and fiscal union was set out in 2017.

**“*...there is a huge task in re-orientating Britain’s exports towards these fast-growing economies and to building up the sectors in which the economy has comparative advantage, and in goods and services that are in demand. They include, clearly, advanced manufacturing, pharmaceuticals, aerospace, and financial, business and professional services. They also include knowledge-based sectors which have so far barely made it out of the laboratory.*”**

David Smith (2012) excerpt from essay for **CII Future Risk Report 2**

**“*Scientists and insurers must gaze through the same pane of glass. Scientists’ raison d’être is understanding nature and insurers also need to understand nature as the prerequisite to judging risk. Insurers and scientists, therefore, share the same need to understand our world.*”**

David Willetts MP (2012) excerpt from essay for **CII Future Risk Report 4**

But it is not just in the developed world where innovation has prospered. Right across the developing world, including in some of the historically poorer regions of Sub-Saharan Africa, entrepreneurial spirit is alive and well. With the abolition of the Common Agricultural Policy, there has been greater demand from Europe for cheaper African imports.

Bekele is a potato farmer from Ethiopia whose business has gone from strength to strength since the CAP was repealed. From the starting point of a small family run business, it has grown into a crucial part of an increasingly vibrant local economy. And from the profits that Bekele has earned through his core venture he has been able to expand into other areas, including Ethiopia’s blossoming floriculture sector which has become by far the largest in the world.

Bekele's ability to harness new technology to improve the business's productivity is a key reason for its success. But like the example of McKinney and Tammy, he too has benefited from external financial assistance. In an interview with magazine, "Entrepreneur Weekly", Bekele notes the important role that micro-credit and micro-insurance played. "Twenty years ago our family would not have been able to access the necessary finance to invest in the right sort of equipment to run the farm properly. We were also exposed to the elements. Weather here can be quite severe at times, a serious risk given the nature of our business. Affordable credit and insurance has, therefore, provided the much needed funding and protection to help the farm thrive."

Importantly, Bekele believes that external financial assistance like this can be a "win, win" for all concerned. "By providing us with the means to grow the business, we have been able to build a modern, sustainable farm that can withstand significant environmental hazards including drought. We are, therefore, far less of a financial risk now than when we started out, and we are also a consistent source of premium income for our insurers."

Microfinance has grown ten-fold in the last five years and now supports over 1.5 billion people living in the world's poorest areas. It has also helped to support the development of thousands of other micro-businesses which provide much needed income and employment to local communities.

**“ Qualitative evidence from New York University implies that, when combined with micro-saving – small deposit accounts for those on low incomes – the social value of micro-insurance could be a major step towards improving the wellbeing of the world's poor. So far, take-up of micro-insurance remains low across much of the developing world. But this should not deter the industry from trying to transform an innovative concept into a financial service that provides tangible benefits to potentially billions of people worldwide. ”**

Ben Franklin (2012), *Spotlight on Economy and Society*, special feature article for Post Magazine

## Resilience against climate change

Historically the world's poorest regions have been the worst affected by extreme weather events – acting to intensify other risk factors facing the developing world, the worst of which include war, famine, poverty and disease. But in the developed world too, weather events can wreak havoc including loss of life as Hurricane Katrina demonstrated so tragically a quarter of a century ago.

**“ Climate change, while a discrete challenge, is likely to act as a 'risk multiplier', interacting with other trends, exacerbating existing tensions and insecurity, and making it even more difficult to address poverty, disease, food and water insecurity. ”**

Professor Sir John Beddington (2012), *CII Future Risk Report 3*

Thankfully, despite the number of recorded extreme weather events increasing over the last ten years, the number of disaster-related deaths has actually fallen and the disruption to economic activity has remained relatively stable (after adjusting for inflation). There can be no doubt that the increasing prevalence of professional risk management including the provision of (micro)insurance has helped individuals to understand the environmental risks that they face and how they can reduce their exposure to them. But in the view of climate change experts, including the Indian Government's Chief Scientific Advisor Dr Aruni Shah, recent improvements in adapting to climate risk would not have been possible without also having governments on board to push through improvements in infrastructure.

“Whilst on the one hand the world’s population has become more concentrated and urbanised increasing the potential adverse impact of an event, this has been counteracted by governments ensuring that people moving into cities gravitate towards regions that are relatively safe from natural hazards like flooding. This has been aided by governments investing in crucial infrastructure like flood defences and early warning systems – supported by the United Nation’s Global Hazard Relief Programme”. Dr Shah also notes that improvements in technology and manufacturing processes have meant that “high quality building materials have become cheaper, enabling the construction of resilient new homes that can withstand some of the impact when the worst happens.”

Each of these factors has helped lead to a stark improvement in the chances for survival following an extreme weather event as well as helping to limit disruption to the economy. More can still be done to drive even better resilience, but the international community has taken a number of important first steps including acknowledging the problem and beginning to take effective, collaborative action. This has been supported by the insurance industry underwriting climate risk and spreading knowledge and awareness to both the general public as well as to policymakers.

**““ There is an enormous potential for insurers to provide economic incentives, data and modelling skills to help to manage risks more sustainably by encouraging adaptation to climate change. ””**

Professor David Crichton, *CII Future Risk Report 3*

**““ Comprehensive risk reduction, aligned with climate adaptation measures can help developing countries manage the risks they face. Insurance risk transfer can be a useful component in this strategy, if correctly designed and implemented. ””**

Dr Swenja Surminski, *CII Future Risk Report 3*

## Addressing climate change

Adapting to environmental risk is, however, just one part of the climate change jigsaw. It has long been argued, for instance, that global warming increases the extent to which extreme weather events occur, thereby raising the challenges and associated costs of adaptation.

Back in 2011, the then International Energy Agency’s Chief Economist, Dr Fatih Birol, outlined a number of possible climate scenarios for different assumed levels of energy consumption up until 2035.<sup>6</sup> In the central scenario, Birol described a world where energy demand would double over the period as a consequence of population growth and economic expansion, particularly in the developing world. This, he predicted, would result in global warming exceeding the internationally agreed 2 degree celsius target which could, he said, have serious implications for the wellbeing of populations in most at risk regions.

Remarkably, the world remains on course for beating the 2 degree target. The turning point was 2015, when a new deal known as Kyoto II was drawn up. It “locked in” the principles of “contraction and convergence” under which developing countries would be allowed to grow emissions while developed countries contracted theirs until the figures converged. It paved the way for fair cuts to emissions across the developing world – and in the process provided a roadmap for a more sustainable future.

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<sup>6</sup> See Dr Birol (2012) “Energy and Climate Change: Looking at Future Trends and Risks”. Chapter in CII (2012) Future Risk 3: Climate Change and Energy Security

The West, including the United States has led by example, using the economic problems of 2012–14 as the precursor for an industrial policy focusing on investment in sustainable sectors. There has also been a noticeable shift towards renewable sources of energy in China and India as they seek to mitigate against some of the environmental and, consequently, health risks, related to fast paced economic development, particularly in densely populated areas. Indeed, at a global level there has been greater focus on energy efficiency – including green technologies such as carbon capture and storage. In short then, whilst the world has grown somewhat warmer, for the moment at least, it appears as though we have dodged the doom-mongers worst case scenario of passing irreversible tipping points.

**“ Action to increase energy efficiency is the most important single step to tackling climate change, but not enough is being done. Alongside this, government support for renewable energy must be protected and expanded, even in the context of a challenging economic climate. ”**

Dr Fatih Birol, excerpt from essay for **CII Future Risk Report 3**

**“ Rising temperatures will affect weather and precipitation patterns, sea level will rise, heatwaves will increase, and there is the potential for an increase in extreme events, such as droughts, flooding and storm surges. ”**

Professor Sir John Beddington (2012), excerpt from essay for **CII Future Risk Report 3**

## **Defusing the longevity time bomb**

Over the last twenty years or so, average global life expectancy has increased from around 70 to 80 years of age. During this period, there have been dramatic improvements in the treatment of heart disease, cancer and HIV. There have also been significant improvements to living conditions around the world, helping to ensure a significant reduction in the extent to which water borne disease has affected some of the world’s poorest regions. So while risk factors like overeating, smoking and drinking alcohol remain serious concerns, the world has made significant progress in tackling some of the main causes of early death.

Coinciding with people living longer, families have become smaller. Fertility has fallen from roughly 2.5 children per woman in 2010 to around 2 children today. This contrasts with an average of 5 children per woman 80 years ago.

Longer life coupled with lower fertility means that the world has grown older. Yet governments have not become crippled by ever-increasing debt linked to their ageing populations as some had predicted. Policy measures have helped in this regard. For example, many countries have taken measures to raise state retirement age in line with rising longevity, to abolish default/mandatory retirement ages, and to invest in the re-skilling of the labour force – each of which has led to more people working for longer, thereby reducing the burden on the state for funding retirement. And with falling fertility rates, we have experienced the short-term benefit of having fewer younger dependants. Indeed, over the past decade, many Western based countries have actually experienced falling dependency ratios,<sup>7</sup> though for how long this trend will continue is hard to say.

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<sup>7</sup> Dependence ratio tells us how many young and old people depend on those of working age. It can be calculated by dividing the number of people aged 0–14 and those aged 65 and over by the number of people aged 15–65

**“...because of low fertility rates, the labour force as a share of total population has been increasing and is expected to increase through 2050. Thus one of the most widely cited fears about population ageing – that there will be a crushing rise in elderly dependency...appears unfounded for the world as a whole.”**

David Bloom. Axel Birsch-Supan, Patrick McGee and Atsushi Seike, (2012), excerpt from **CII Future Risk Report 5**

In the opinion of the Global Monetary Fund’s Chairman and acclaimed labour market economist, Professor Hana Lee, economic growth has also played a major role in ensuring that governments have not baulked under the fiscal weight of an ageing population. “With global demand having increased beyond our best hopes over the last ten years, this has ensured a strong, healthy labour market. Unemployment has fallen by a staggering 20% over this period.”

When asked about what might have happened had economic growth been weaker, Professor Lee adds “...if unemployment had risen in line with our worst case, governments would have been hit hard twice – in the short-term through the provision of automatic stabilisers (i.e. unemployment benefit), and in the long-term through the provision of greater retirement benefit to those who had not accrued sufficient savings during weak labour market conditions. Compounding all of this would have been poor taxation revenue over the entire period. In sum, it would have been fiscally bad no matter what policies governments had taken to incentivise working in later life.”

The healthy macroeconomic environment has reaped other benefits too – asset prices, for example, have been rising, increasing the size of pension pots and thereby consolidating the benefits of saving for retirement. The pensions and asset management industries have also played their part in this regard, seemingly successful in: a) communicating the message that people must save for the future, b) in improving the techniques used to model longevity risk, and c) in understanding and managing asset price volatility. All of these elements have boosted trust and confidence in the financial services industry which has, in turn, led to a tightening of the savings and protection gap.

**“Governments, employers, insurers and reinsurers must work together to achieve a long-term, sustainable infrastructure for retirement provision.”**

**“Considering a number of alternative scenarios for each disease both in terms of diagnosis and treatment, and how these interact with different scenarios for other diseases, will help achieve an understanding of potential uncertainty in future experience.”**

Daniel Ryan and Ron Wheatcroft, excerpt from **CII Future Risk Report 5**

## **Role of technology**

Over the last twenty years, increased use of technology has continued to drive improvements to many areas of our lives. This article has already touched on this with respect to adaptation to climate change and supporting economic growth, but arguably there is no better illustration than with respect to care of the elderly.

Two decades ago, there were concerns that, as the world grew older, governments and individuals would struggle with the costs of caring for those in later life. In England and Wales, for example, it was estimated that the average cost of a care home was over £30,000 per annum – a cost that invariably fell on the individual or their family. It was argued that this was an unsustainable position<sup>8</sup> since it meant that those entering care risked losing virtually all of their assets and wealth in paying for it.

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<sup>8</sup> For a detailed analysis of the long-term care problem see Commission on Funding of Care and Support (2011), “Final Report”

Since that time, one of the biggest game-changers in care of the elderly has been the development of telecare. This has allowed people to stay in their own homes for far longer than they would have been able to in the past. Improvements in technology have meant that new, cheaper and more effective systems have been developed to monitor health and wellbeing at home (such as identifying increasing trips to the bathroom, or falling out of bed) as well as responding to immediate needs (such as a cooker being left on).

These types of systems were available to some in the first decade of this century, but were too expensive and the technology too crude to be widely used. Today, telecare is commonplace, providing assistance to millions of elderly citizens in the UK and even more around the world. In turn, the ability to live at home in later life has been aided by improvements in the treatments of dementia and physical disability. According to Daphne Baudrillard, head of global charity Age United; “thanks to a number of technological and scientific breakthroughs, old age is starting to be transformed. People are entering their later years with less anxiety than ever before. We can finally start celebrating rising life expectancy – the greatest barometer of human progress. We must consolidate these gains in the years ahead”.

## Managing technological risks

Whilst technological developments have continued apace, the number of technological accidents has remained relatively stable and we have experienced few occurrences of so called technological black swan events. It is worth reminding ourselves that episodes like the “Flash Crash” of 2010 and the power blackouts across India in 2012 suggested a new dawn of technological failures that could severely disrupt economic activity putting lives at risk. Cyber crime exacerbated these fears with viruses like Stuxnet threatening to sabotage important industrial installations.<sup>9</sup>

Thankfully we have averted disaster growing ever more competent in using technology, in understanding its limitations and risks without the downside effect of deterring further innovation. Indeed innovation has been key to ensuring that computer systems have remained one step ahead of those who wished to cause disruption. And good risk management practices have been adopted by corporations and governments based on the zero failure principles used by “high reliability organisations”. This is where no weak links in complex systems, however seemingly minor, are ignored. This reduces the likelihood of cascade failure – a phenomenon most famously and tragically demonstrated by the Challenger shuttle disaster in 1986.

Tom Diver, CEO of reinsurance firm Hanoi Re, believes that we have significantly improved our abilities to understand the risks associated with complex systems. He argues that “compared with practises even a decade ago, the time and expertise spent testing and investigating the possible glitches in complex systems and machinery has greatly improved. No stone is left unturned. And this is an iterative process – just because there has not been a problem for a number of years does not mean we just assume that all is fine. We go back and look again. As a result, we are able to have a good degree of confidence that some of the greatest engineering projects taking place right now will succeed as hoped.”

“*Ultra large scale systems represent major challenges to the engineers responsible for the construction and ongoing maintenance of the constituent systems, and they also present major challenges to anyone concerned with the measurement and control of risk.*”

Professor Dave Cliff, excerpt from **CII Centenary Report 4**

In summary, technological progress has reaped vast benefits and been a main driver of the remarkable decade. But, arguably, these successes would have been tempered, were it not for the adoption of proper risk management techniques, to ensure that risks associated with new technologies and large scale systems have been appropriately mitigated.

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<sup>9</sup> Jonathan Fildes (2011) “Stuxnet targets and spread revealed”, article for the BBC. Available for download from: <http://www.bbc.co.uk/news/technology-12465688> [last accessed 9 December 2012]

## Why so remarkable – the role of financial services

The last decade has been truly remarkable. There are, of course, many challenges ahead, but few could argue with the fact that there is a genuine sense of optimism about our future – akin to the early 1990s after the fall of communism in Central and Eastern Europe. There is a real belief that global leaders are able to work together to chart a safer course through shared political, social, economic and environmental problems, and that citizens of the world are in turn, able to make something of themselves and give something back to their local communities. Financial services has played an important role in all of this – supporting the economic recovery, underpinning efforts to adapt to climate change, reducing the prospects for pensioner poverty and mitigating technological risks. But nothing works in isolation – all the pieces have come together at the right time providing the best conditions possible for the remarkable decade. Long may it continue!

## Summarising the “remarkable decade”

### Reforms to the international economy

- World leaders work together to reform global economic imbalances.
- EU agrees path to full fiscal as well as political union.
- Trade specialisation to develop a sustainable international trading system based on comparative advantage.

### A vibrant private sector

- Economic development supported by effective financial services intermediaries including insurers and banks.
- Private sector led growth supported by effective partnerships between research centres, entrepreneurs and business leaders.

### Action on climate change: mitigation and adaptation

- Effective adaptation to environmental hazards led by the international community and buttressed by the efforts of informed insurers and risk managers.
- Robust government action to reduce fossil fuel emissions based on the principle of “contraction and convergence”.

### Improving healthcare, falling pensioner poverty

- Improvements in healthcare and living standards cause a dramatic rise in global life expectancy.
- Demographic time bomb defused through measures to extend working lives aided by the global economic recovery. Advances in telecare reduce the cost of providing long-term care for the elderly.
- Demographic pressures on public finances are reduced through greater private savings – supported by improved communications about the benefits of saving and better modelling of longevity risk.

### Dynamic technological change

- Increased use of technology helps drive improvements to many areas of our lives.
- Downside risks, including technological “black swans” are avoided as business leaders and policymakers adopt a qualitative approach to risk management following a zero tolerance to failure approach.

## The importance of risk perception

So far, this report has explored some of the relationships between the different risks uncovered during the course of the Future Risk series in the form of a vivid news article from the year 2030. But how do members of the public as well as those from the insurance industry perceive some of the risks discussed throughout the series? This is an important question. As we explored in the first Future Risk report, public risk perceptions can act to “constrain or compel political action”.<sup>10</sup> Getting risk perception right is, therefore, a crucial part of ensuring appropriate action by governments and policymakers to prioritise certain kinds of risks over others at the local, national and or international level.

In order to shed some light on the views of the general public, as well as risk experts from the insurance industry, we undertook two major international surveys. The first survey was a poll of members of the public across five countries, each in separate continents conducted by Ipsos MORI. The second survey was a poll of CII members’ views regarding a similar set of risks. Members of the public as well as risk experts were asked about the relative likelihood and impact of a number of different risks occurring over the next forty years. This allowed us to establish which risks were perceived to be the most significant by each group. Results from the two surveys are reported below.

### Ipsos MORI survey into global public risk perceptions

#### About the survey

Results are based on a total of 2,678 interviews conducted in five countries: Australia, Brazil, Great Britain (GB), India and the United States (US) (c. 500 interviews in each). Countries were chosen to ensure a diverse mix of developed and developing nations from all corners of the globe. Fieldwork took place between 6 December and 19 December 2011. The survey was conducted using the Ipsos Global @dvisor omnibus service – a monthly online survey in 24 countries. The data has been weighted.

Please note that while data has been weighted, taking an online approach in countries where there is a lower level of internet penetration, such as India and Brazil, means that we cannot necessarily view the results as representative of the whole population. Rather, we should view the data as reflective of the views of a more educated, affluent or ‘connected’ group.

#### The questionnaire

Respondents were asked to rank the relative impact and likelihood of a number of risks occurring. To meet this aim, we asked people to rate which ‘two or three’ risks (assuming the likelihood of each happening will be the same) would have the biggest impact on their country’s future. We then asked them to rate the likelihood of those risks materialising over the same time period. This allowed us to create a risk register for each of the countries surveyed by plotting perceived impact against the perceived likelihood of occurrence.

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<sup>10</sup> See CII (2012) Future Risk 1: “Learning from History”, p.57

The list of risks was chosen following our analysis of key risk drivers, set out in the first report within the Future Risk series published in early 2012. The list was then refined to ensure a limited set of options to keep the survey simple and easy for respondents to understand. The final list included the following options:

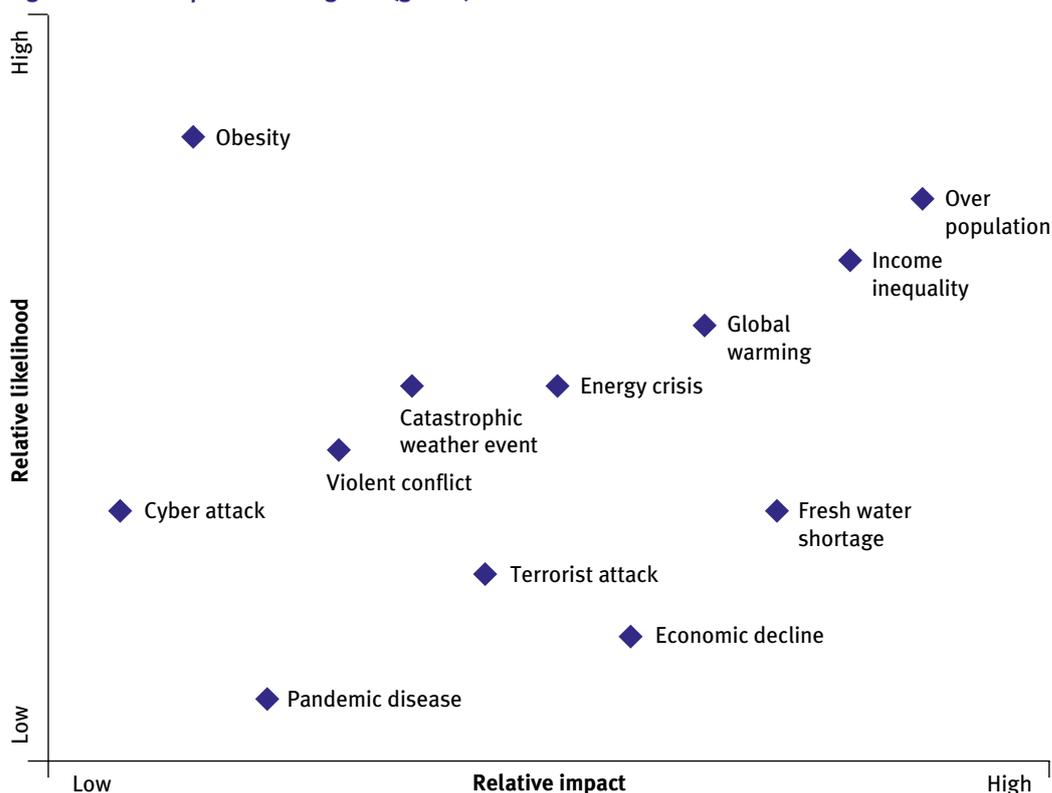
- Major terrorist attack
- Violent conflict
- Growing income gap between rich and poor
- Sustained economic growth
- Sustained economic decline
- Major worldwide outbreak of a disease, such as pandemic flu
- Big increase in the number of people who are over weight
- Major worldwide energy crisis
- Substantial global warming
- Increase in catastrophic weather events
- Severe fresh water shortage
- Major cyber attacks on government and businesses' computer systems

## Global results (public)

**In reporting “global” findings, results are not weighted to reflect the proportion of the global population attributable to each country. The results, therefore, just represent the views of our sample rather than something that could be called a genuine “world view”.**

At a global level, **over population**, **income inequality** and **global warming** were the three risks that were both considered relatively high impact and high likelihood. **Cyber attack**, **obesity** and **pandemic disease** were all rated as relatively low impact – though obesity came highest in terms of likelihood across all of the risks that were considered. **Sustained economic decline** was ranked as a relatively low likelihood, but medium impact risk – a similar story for **major terrorist attack**. Respondents perceived the risk of an **energy crisis** as a medium impact, medium likelihood risk whilst a **fresh water shortage** was seen to be relatively high impact, low likelihood risk.

Figure 1. General public risk register (global)

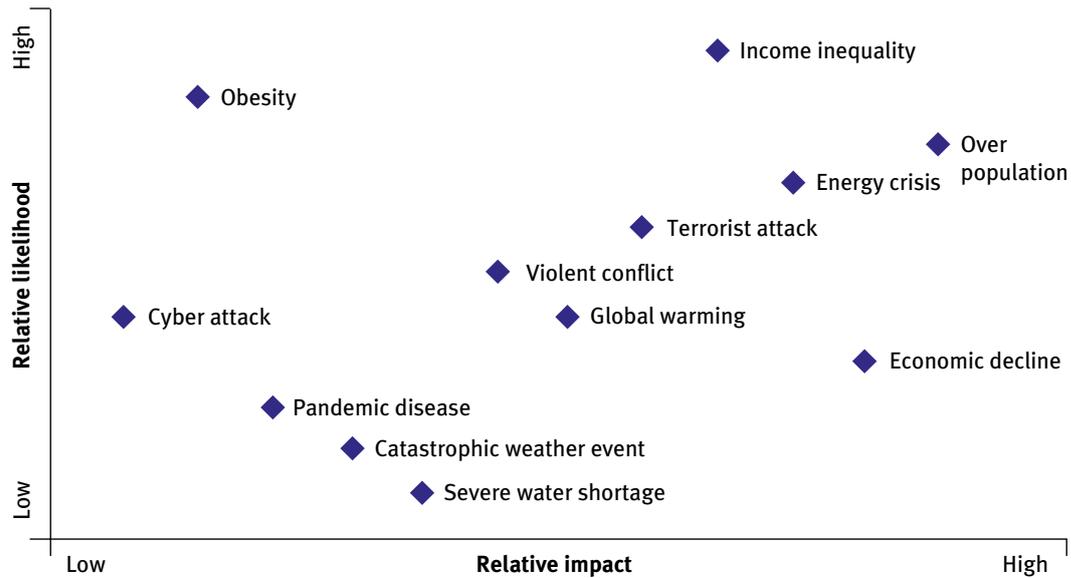


As one would expect there were some interesting differences in perceptions between participants from different countries. To illustrate this we look at the differences in sentiment between respondents from Great Britain and India below.

### GB results (public)

GB respondents were most concerned about the risks of **over population, energy crisis and income inequality**. **Sustained economic decline** was also noted as a relatively high impact risk though it was not thought to be as likely to occur as many of the other risks considered. Medium impact, medium likelihood risks included **terrorist attack, global warming and violent conflict** whilst **cyber attack and pandemic disease** were perceived to be relatively low likelihood, low impact events. Interestingly, **catastrophic weather events** were also seen to be relatively low likelihood/low impact. It should be noted that the survey was conducted before the UK's flooding episodes in 2012 so this may explain the relatively low ranking of this risk. As with the global sample, **obesity** is seen as very high likelihood but relatively low impact.

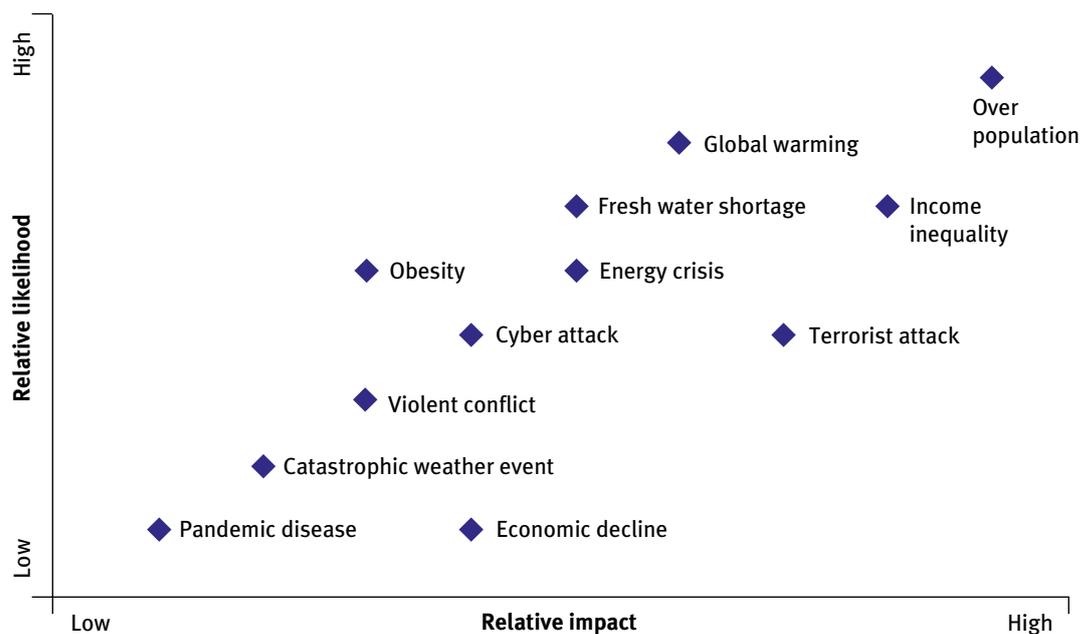
Figure 2. GB risk register (public)



### India results (public)

Similar to the results of the GB survey, **overpopulation** and **income inequality** were perceived as the top ranking risks according to Indian respondents. The threat of a **major terrorist attack** was also seen as a significant risk in terms of impact, though a number of other risks were perceived to be more likely. Environmental/energy risks including **global warming**, **fresh water shortages** and **energy crises** were all seen as medium to high level risks with **global warming** ranked as the second most likely risk of all. Interestingly, **cyber attack** was ranked relatively high by comparison to the GB and Global risk registers outlined above. A **cyber attack** was believed to be far more likely to occur than **sustained economic decline** whilst both were perceived to have a similar impact. Episodes of **violent conflict**, **catastrophic weather events** and **pandemic disease** were perceived to be the risks of least concern – all ranked as relatively low impact, low likelihood events.

Figure 3. India risk register (public)



## Reflecting on the public opinion poll

The risk registers imply that, on the basis of a mixture of developed and developing world countries, we should be taking robust action on overpopulation and income inequality whilst we should spend relatively limited time and resources in trying to mitigate the risks of a cyber attack or pandemic human disease.

Importantly though, different countries see the same set of risks differently and our survey evidence suggests that, for example, India should also be seeking to prioritise efforts to address environmental risks like climate change, fresh water shortages and crises over the supply of energy. On the other hand, GB should be focusing on tackling terrorism and economic decline.

The crucial question that stems from this analysis is whether the risk perceptions of the general public are appropriate. Would governments and policymakers be correct, for example, to prioritise overpopulation? Should GB be spending more time and resources looking into cyber risks as distinct from seeking to address terrorism? These questions are impossible to answer without a crystal ball – something that, regretfully, was not available at the time of writing. But one would assume that the closer public opinion is to that of risk specialists, the greater the likelihood of the general public taking the correct decisions on which risks to prioritise. This would in turn, provide a powerful incentive for governments and policymakers to take appropriate action.

### Contrasting public opinion with that of risk specialists

In the following section we outline key findings from our second major global survey – this one assesses the views of members of the insurance sector. In reporting results, we contrast some of the findings from the survey of CII GB members with the Ipsos MORI public opinion poll results from the same country. It must be noted that reported differences in sentiment between the two sets of respondents should be treated with caution. The two surveys were undertaken during different time periods and using different sampling methods. In addition, some of the risks included within the member survey appear slightly differently to the Ipsos MORI survey making direct comparisons somewhat spurious. Therefore, rather than treating these differences as “real”, it is better to use the analysis to prompt further thinking on the role of the insurance industry in making sense of risk, and informing the general public’s own risk perceptions. This is a topic that we will come back to during the recommendations chapter later in this report.

## CII member survey into risk perceptions of the insurance profession

### About the survey

In order to understand the views of risk experts, we conducted a survey of CII members. 4,367 members completed our questionnaire across six regions: GB (3,360), Asia developed (215), Europe (145), The Americas (101), Africa (231) and Asia Developing (233).<sup>11</sup> Fieldwork took place in March 2012. Excluding Great Britain, results were grouped by region rather than country, given the small number of respondents outside of the UK. Indeed, even after accounting for this change, the overwhelming majority of respondents was GB based (77%).

<sup>11</sup> Asia Developed” included countries such as Australia and New Zealand whilst “Asia Developing” included India and China amongst others.

The survey was administered online through an email sent out to CII members. This method of distribution, coupled with the low sample sizes achieved for some of the regions, means that there is likely to be a relatively large margin of error for the non-GB member results. As a result of these technical difficulties, we just report risk registers for GB and non-GB members (sample size of the latter was 1,007) below. Results are not weighted.

### The questionnaire

Consistent with the approach taken for the public opinion poll reported above, CII members were asked to rank the relative impact and likelihood of a number of risks occurring. The risks included:

- Major terrorist attack
- Geopolitical conflict<sup>12</sup>
- Growing income gap between rich and poor
- Sustained economic growth
- Sustained economic decline
- Major worldwide outbreak of a disease, such as pandemic flu
- Big increase in the number of people who are over weight
- Significant increase in life expectancy<sup>13</sup>
- Major worldwide energy crisis
- Substantial global warming<sup>14</sup>
- Increase in catastrophic weather events
- Severe fresh water shortage
- Major cyber attacks on government and businesses' computer systems

### GB risk register (member)

GB based CII members perceived **income inequality, overpopulation** and **major terrorist attack** as relatively high impact, high likelihood risks. **Sustained economic decline** was seen as having the highest impact of all, though members rated the chances of it occurring as less likely than a number of the other risks. This is broadly consistent with the public opinion poll discussed above, though CII members may perceive the risk of terrorist attack as somewhat more severe.

Similar to the public opinion poll findings, CII GB members perceived that an **energy crisis** would have a relatively strong impact, though there were a number of other risks that CII members thought were more likely, including **significant increase in life expectancy** (medium impact, medium likelihood) and obesity (low impact, high likelihood). Interestingly, **cyber attack** was seen by CII GB members as a relatively medium impact, medium likelihood risk. This contrasts with results from our survey of the general public which placed **cyber risk** bottom in terms of relative impact and relatively low down the pecking order in terms of likelihood too.

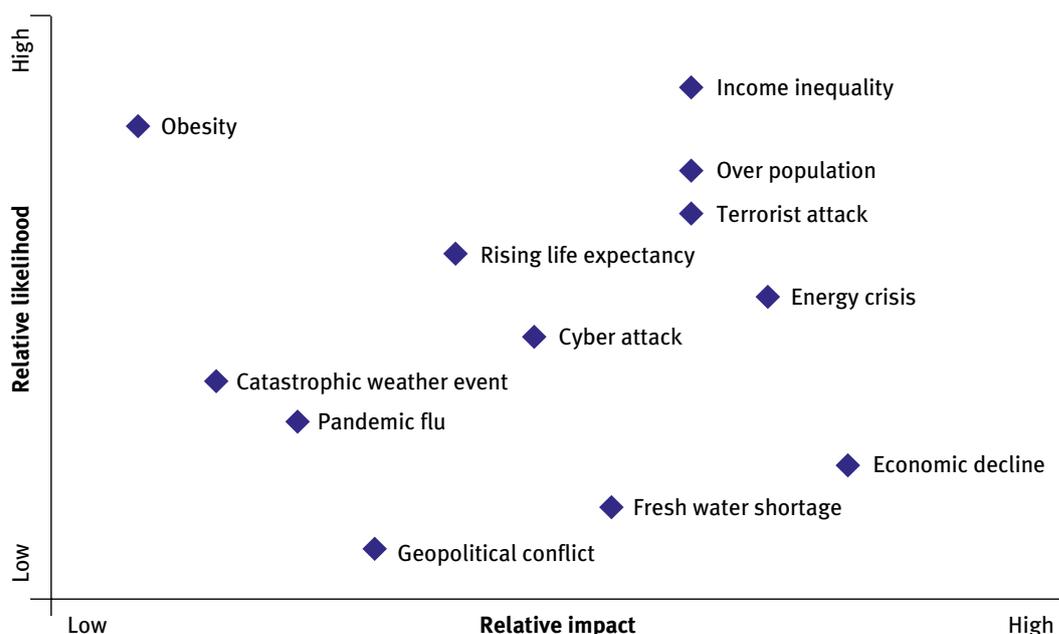
Consistent with the public opinion poll, **catastrophic weather event** and **pandemic** were both ranked as relatively low likelihood, low impact events by CII GB members. Again this may be a consequence of the timing of when the survey took place – before some of the most severe flooding episodes in 2012. It might also be a consequence of how members have interpreted the term “catastrophic” – arguably, freak weather events like severe hurricanes, for example, are pretty unlikely in GB. As might be expected, **fresh water shortages** were perceived as relatively high impact but amongst the most unlikely of events.

<sup>12</sup> We changed the terminology from “violent conflict” to “geopolitical conflict”. We thought the former was too vague so amended it in time for the member survey

<sup>13</sup> We decided to test member views about the impact of increasing life expectancy which was not included within our poll of the general public

<sup>14</sup> Unfortunately, whilst the survey asked members about the relative impact of climate change, members were not asked about the likelihood of climate change. This means climate change was omitted from the overall risk registers though relative impact scores were still obtained

Figure 4. GB risk register (member)

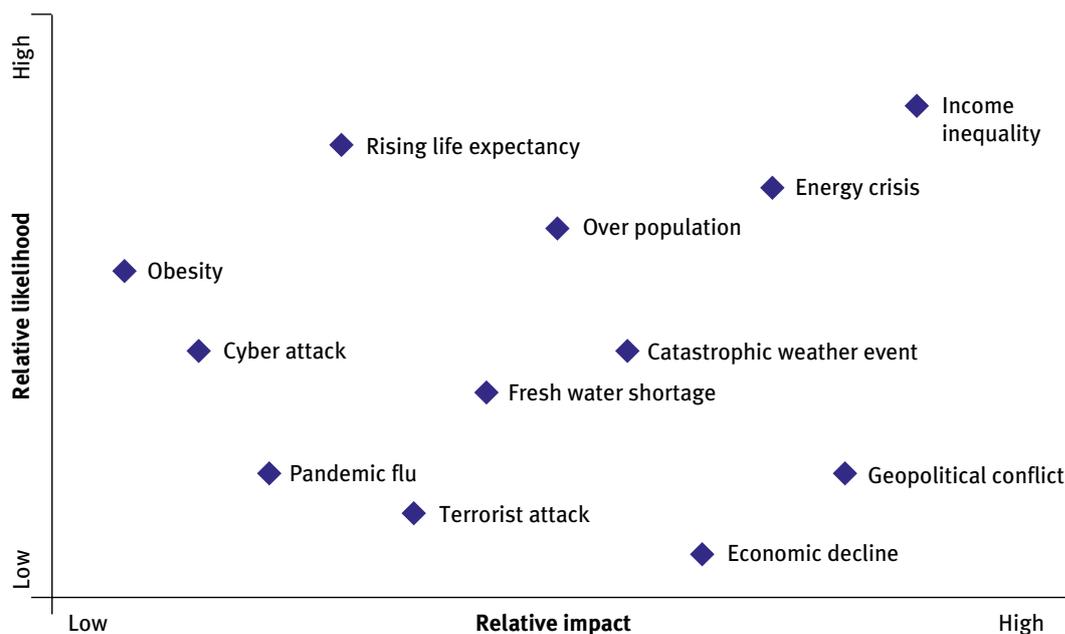


### Non-GB risk register (member)

By comparison to GB members who ranked **over population** as one of the biggest risks facing their country, non-GB members perceived this as a medium impact, medium likelihood risk. For non-GB members, **income inequality** was seen as the greatest risk followed by an **energy crisis**.

A **catastrophic weather event** was perceived as a relatively medium impact, medium likelihood event by non-GB members. This contrasts with GB members who ranked this relatively low down the list of risks. **Obesity** followed by **cyber attack** were the lowest ranked risks for non-GB members. The latter result contrasts with GB respondents who ranked **cyber attack** as a relatively medium likelihood, medium impact event. Interestingly, **rising life expectancy** was perceived to be of greater relative likelihood for non-GB respondents than GB respondents, though both groups perceived this to be relatively low impact compared to a number of the other risks considered. Unlike GB members who placed the risk of a **terrorist attack** in the top three risks, non-GB members rank this risk as a relatively low likelihood, low to medium impact event. **Geopolitical conflict** was seen as having the second biggest impact after **rising income inequality**, which contrasts with respondents from GB who ranked this as low impact. However, both GB and non-GB members saw the chances of geopolitical conflict as low.

Figure 5. Non-GB risk register (member)



### Summary of survey results

- Understanding the relative impact and likelihood of various risks is crucial to ensuring that we are able to appropriately prioritise certain risks over others.
- Governments and policymakers are driven by how the general public perceives different risks, but public risk perceptions may not always be well informed.
- The Ipsos MORI public opinion poll implies that policymakers should be focusing on mitigating the risks associated with over population and income inequality and give relatively limited priority to preventing cyber crime and pandemics.
- Similar to the Ipsos MORI poll, the CII member survey into the views of risk specialists also suggests that policymakers should prioritise income inequality and over population.
- However, with respect to the risks facing Great Britain – CII members perceive terrorism and cyber attack as relatively high impact, high likelihood events hinting at a discrepancy between the views of risk specialists and the general public.
- These findings help to underline the fact that risk specialists will continue to play a key role in promoting greater awareness of the various risks that we face – helping to inform public opinion along the way.

## Key recommendations

### The story so far...

This report began by outlining how many of the challenges and risks discussed over the course of the Future Risk series might be addressed over the years ahead. To meet this aim, we set out a vivid news article from the perspective of 2030. The article illustrated how the insurance industry could be an important factor in driving a better world – helping to foster economic growth, mitigating the risks of an ageing population, ensuring sound adaptation to climate change and providing necessary risk management around the development and use of new technology.

We qualified each of these points by noting that the industry will not be able to solve these problems on its own – government action, for example, will be one of the most pivotal factors in determining the world’s future direction. A healthy insurance industry is, therefore, a necessary but not sufficient condition – and its future success will be linked to its ability to leverage its unique expertise in realms that have traditionally sat beyond the sector.

The report followed this analysis by turning its attention to the views of the general public as well as the insurance industry regarding many of the risks considered over the course of the Future Risk series. The survey results indicated that **over population** and **income inequality** were perceived to be the greatest future risks for many of our respondents, though there were some differences between GB and Indian respondents with respect to their views on **environmental**, **political** and **technological risks**. There may also be differences in risk perceptions between the views of insurers and the general public, though more work is needed to identify the extent to which this is the case and to uncover some of the reasons for it. We concluded the chapter by noting that insurers have an important role to play in fostering a more informed general public.

### The Future Risk manifesto

Building on the work in previous chapters, as well as insights from across the series, this penultimate chapter sets out some high level recommendations for the industry. We have labelled our set of recommendations a “manifesto”, because in many ways it is a “call to arms” focusing on two specific areas: 1) how the industry can face up to some of the challenges posed by a dynamic and evolving external environment, and 2) how the industry can continue to demonstrate its relevance to the societies it serves. These aims are, to some extent, mutually reinforcing, but the types of actions and strategies necessary to achieve them may differ.

#### 1. The profession

Being part of a profession will be increasingly important as risks become more complicated and global in nature. As this report has shown, specific risks cannot simply be treated in isolation from one another. With respect to climate change, for example, in the developing world, an increased propensity for extreme weather events is likely to exacerbate many other risk factors like poverty, disease and hunger. Therefore, in understanding the potential for, and impact of, different risks occurring, insurers must be able to think about how each of the risks will interact with one another as well as considering whether there are any other relevant factors that have not been taken into account.

In short then, insurers will need to be increasingly highly skilled and regularly reassess where the gaps in their knowledge lie in order to adapt to a complex changing external environment. A commitment to professionalism will be a vital part of this process. Within a profession, practitioners and firms commit to lifelong learning and a high standard of ethical behaviour, both of which help to engender greater levels of trust. Not only, therefore, are members of a profession likely to be more qualified to make informed judgments about different risks and their potential impacts, but they will also receive greater confidence from those they seek to serve, as a consequence of having had their learning and behaviour properly verified. Being part of a profession is, therefore, crucial in order to both meet the challenges of the 21st century, and to demonstrate the relevance of the industry to its customer base.

## 2. Innovation

The insurance industry has always been innovative – finding ways and means to underwrite all sorts of different types of risk, however big or small. Continuing innovation will be critical to the success of the industry going forwards too. Finding innovative ways to utilise new technology will be part of this effort – helping to improve the efficiency and effectiveness of insurers’ core functions. For example, as the Universities and Science Minister, David Willetts MP, wrote in our Future Risk technology report, “through a market match algorithm, insurance brokers can harness new technology to deliver a modern version of the classic broker function”.

However, innovation will not just be confined to the use and application of technology. Insurers, in collaboration with financial services markets, are developing innovative ways to spread large risks, like the chances of a catastrophe occurring (i.e. through catastrophe bonds) which in turn, enables the industry to continue providing cover. Future developments could include more of this type of financial instrument. Indeed some parts of the industry are currently considering how best to foster a market for longevity bonds to help spread the risk of rising life expectancy.<sup>15</sup> In short then, continuing innovation will not just improve the ability for the industry to streamline its core business practices through technological advance, but also enable it to continue underwriting some of the largest and most diverse risks facing today’s and tomorrow’s world. The industry must, therefore, continue to attract and employ some of the world’s best and most innovative minds.

## 3. Communication

**Engaging consumers on the wider role of insurance:** This report, as well as the entire future risk series has strongly argued that the insurance industry has a key role to play in shaping the future. With its unique focus on risk management, insurers are well placed to provide guidance and solutions about the most complex hazards we face.

Crucially, the industry must be able to communicate its broader role and value in simple terms to the general public. This does not just mean providing more information about the latest products and services, but finding ways to inform and educate about the wider role of the industry, such as its capacity to foster economic growth. This will help to provide the public with a greater appreciation of the role and importance of the sector.

Currently, the financial mechanisms through which banks support economic growth are well known. In contrast to this, the benefits of insurance to economic activity are not particularly well understood outside of the industry. With debates around what constitutes socially useful financial services continuing apace<sup>16</sup> in the wake of the financial crisis and continuing economic turmoil, now is a really important moment for the industry to communicate its broader value to society.

<sup>15</sup> Longevity bonds are where the seller of longevity risk pays a premium to investors, and in return, investors would assume the risk of losing some or all of their investment if future improvements in life expectancy are higher than at a pre-agreed rate. See Swiss Re (2012) “A Mature Market; Building a Capital Market for Longevity Risk”

<sup>16</sup> As an example of recent media coverage about the usefulness of insurance read: FT (2012) “Praise to Insurers: Hurricane Sandy Proves Insurance Can Be Socially Useful” available to read at: <http://www.ft.com/cms/s/0/96a43b04-2a6d-11e2-a137-00144feabdc0.html#axzz2EaSvouMk> [last accessed 9 December 2012]

**Influencing policymakers:** The decisions made by governments and policymakers in responding to the threats that we face will be critical to determining the world's future. Crucially, in many policy areas, such as adaptation to climate change, the industry has unique expertise in understanding seemingly opaque risks, aided by access to the latest and most reliable data and risk modelling techniques. Each of these attributes should be invaluable to governments' developing policy. The industry, therefore, has an obligation to continue deepening its ties with the policymaking community – helping to inform government action wherever it can. No other financial services industry is able to understand and provide advice on so many different types of risk. It is time to leverage the industry's expertise even further.

**Building a well-informed general public:** It has long been known that people are not rational economic agents. Their ability to anticipate and prioritise risks will be shaped by the social contexts within which they operate including, and perhaps most importantly, their recent experiences.<sup>17</sup> One implication of this is that a risk that someone might rightly prioritise today may be completely the wrong one to focus on tomorrow. Experts in risk can also get this wrong of course, but one would expect that those actively engaged in assessing risk, and appropriately qualified, would be more likely to make the right judgement calls on a more regular basis.

The survey results discussed in the last chapter of this report imply that risk specialists and members of the public may indeed view the same set of risks differently. The industry clearly then, has a role to play in assessing risks on behalf of non risk specialists – as it has always done. But the industry can go even further. It must also seek to change the risk perceptions of the public so that their views align more closely with that of specialists. This would improve the extent to which individuals are able to manage the risks that they face over the course of their lives. In addition, as this report and others within the series have argued, how the public perceives risk will also drive government action too – so a better informed general public is likely to result in better policymaking.

The industry has always provided some forms of information to its customers about various risks. One of the most obvious examples of this is adjusting the price of premiums that policyholders must pay (though the extent to which customers understand why the cost of their premiums might have changed is debatable). The industry must go further, working in conjunction with other stakeholders including the media, schools and universities to provide better education and information about the kinds of risks that will face the public in tomorrow's world and the sorts of techniques we can all adopt to mitigate them. This should not just be related to efforts seeking to raise financial capability, but should be part of a broader approach to preparing individuals to face a complex, global future.

#### 4. Risk management

**Scenario planning:** The approach taken by this series of reports is most closely allied to scenario planning. The series began by identifying some of the key risk drivers through rigorous desk research before inviting experts from a multitude of disciplines to provide their views. It has culminated in the construction of vivid scenarios showing how different actions on the part of a multitude of stakeholders including, and especially, the insurance industry, might lead to different outcomes for society at large.

The reports have argued that scenario planning is an important tool for assessing possible futures when the number of variables is so large that it would be impossible to make any accurate predictions based on quantitative analysis. Instead it is more useful to sketch out some qualitative visions of the future to stimulate debate.

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<sup>17</sup> For an excellent introduction to decision theory and behavioural economics read: Daniel Kahneman (2011) "Thinking Fast and Slow", The Penguin Group, Penguin Books Ltd, 80 Strand, London WC2R 0RL, England

In a complex world that is constantly changing, scenario planning is an important part of the risk specialist's armoury. As this series has argued on a number of occasions, too much reliance on models that are not able to cope with the possibility and implications of high impact outliers (i.e. the collapse of the US subprime mortgage market in 2007) can be dangerous – lulling us into a false sense of security. Risk specialists must, therefore, engage in qualitative horizon scanning exercises on top of undertaking robust modelling to build a holistic view of the risk landscape. This approach should be buttressed by a healthy level of scepticism about the ability of models to predict outcomes over the long term, and a keen willingness to question underlying assumptions driving the model's findings.

**Collaborating with experts:** This series has demonstrated the need for the industry to continue working in collaboration with experts in other disciplines. For example, in our Future Risk report into demographic change, it was argued that in order to effectively model longevity risk and to build plausible scenarios about future mortality, it would be necessary to consult with other relevant specialists including; demographers, actuaries, medical experts, epidemiologists, pharmacologists and more. Similarly, in our Future Risk report on technology, we argued that in order for the industry to underwrite risks associated with new technologies, insurers must take time to build and sustain relationships with research centres including universities. In summary, in a world with many interlinked risks, a multidisciplinary approach is needed. The industry is already building networks in this regard, but these must continue to grow as risks become broader and more complicated in the years to come.

## Reflecting on high level principles

These high level principles are in no way intended to be an exhaustive list. Other measures will also need to be taken to ensure that the industry is able to chart a stable path over future decades. And new issues and debates will inevitably come to the fore as the world and the industry itself continues to evolve. But these high level principles should be seen as a key point of departure. The extent to which the industry is able to grow as a profession, is able to innovate in the consumer interest, to communicate with the public as well as with government and policymakers, and make sense of diverse and complex risks through a range of stakeholders, will be key to determining the sector's future relevance to the societies it serves.

## Conclusion

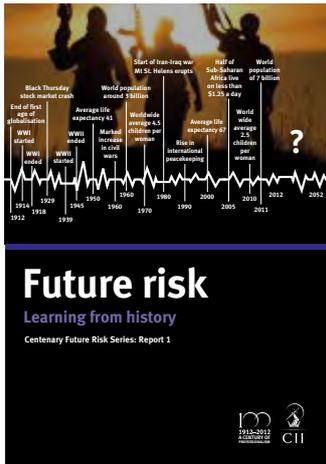
The Future Risk series began by asking a broad question about the role of the industry in tomorrow's world. We began in answering this question by examining some of the numerous challenges that will face the world and the insurance industry over the decades ahead. Perhaps inevitably, some of the arguments and scenarios that have been described during this series may become dated relatively quickly, whilst others will have excluded some trends or events that will be critical in determining the direction of our future. Gazing into the future will always have these kinds of hazards, but we should not be deterred. Without taking part in the process, we would step into the future blindfolded – leaving us hopelessly unprepared.

The best approach, as this series has sought to argue, is to develop plausible scenarios of what the future might hold, debate these intently, and plan for different types of futures emerging. The insurance industry cannot do this alone. It must work collaboratively with other key stakeholders in order to better understand the opportunities and challenges it faces.

The hope then, is that this series is seen as something of a case study into how firms and practitioners might want to think about planning for their own future – in terms of the approaches and methodology used. We also hope that it has provided much food for thought about the kinds of long-term issues relevant to the sector and the role of the industry in addressing them. Not all of the reports and scenarios will be relevant for everyone, but for many, there should be areas worth further thought and investigation. And finally, we hope that the series will help to inform society more widely, and its many stakeholders, of the continuing importance of the industry in bearing the risks of the future.

The insurance industry's past shines with creativity and innovation which has allowed it to continue providing a service that is central to the functioning of a healthy economy. It is crucial that the industry continues to play this role, for as this series has repeatedly shown, a sound and stable insurance industry, has a key part to play in building a secure and prosperous future for us all.

## Previous reports within the Future Risk series



### Future risk: learning from history

The first report within our centenary series reflects on past trends and their potential implications for future risk as well as discussing some initial findings from a global survey into the risk perceptions of members of the public from across the globe. It sets out the methodology for the entire series and identifies themes for further investigation.

Report accessible via:  
[www.cii.co.uk/future-risk-history](http://www.cii.co.uk/future-risk-history)



### Future risk: social and economic challenges for tomorrow

The second report in the centenary series focuses on some of the big socioeconomic risks identified by the first report. Utilising expert analysis from George Magnus of UBS Bank and David Smith of The Sunday Times amongst others, we outlined three possible socioeconomic scenarios and their potential implications for the insurance industry. We then discussed how the industry can play a key role in determining a better future.

Report accessible via:  
[www.cii.co.uk/future-risk-economy](http://www.cii.co.uk/future-risk-economy)



### Future risk: Climate change and energy security

The third report in the centenary series focuses on climate change and energy security. World leading experts including the Government's Chief Scientific Adviser, Professor Sir John Beddington, and the International Energy Agency's Chief Economist, Dr Fatih Birol outline what the future might hold. Again we use the expert analysis as the basis for the construction of three scenarios and their implications for the insurance sector.

Report accessible via:  
[www.cii.co.uk/future\\_risk\\_climate\\_change](http://www.cii.co.uk/future_risk_climate_change)



## Future risk: How technology could make or break our world

The fourth report in our centenary series looks at risks related to technology. Amongst other risks, it considers technological “black swans” – low likelihood, high impact events such as the failure of large scale IT systems controlling grid networks. The report also discusses the importance of continuing technological innovation and how the insurance industry can support this.

Report accessible via:

[www.cii.co.uk/future-risk-technology](http://www.cii.co.uk/future-risk-technology)



## Future risk: Defusing the demographic timebomb

The fifth report in our centenary series looks at risks related to demographic change and in particular global ageing. Six distinguished authors discuss what increasing longevity and falling fertility might mean for economic activity, government spending and the insurance industry. Again we provide three forward looking scenarios based on the expert analysis.

Report accessible via:

[www.cii.co.uk/future-risk-demographics](http://www.cii.co.uk/future-risk-demographics)

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