LLOYD'S AON

Ukraine: A conflict that changed the world – the (re)insurance industry response

Lloyd's Futureset explores the role of the (re)insurance industry in building resilience against the medium to long term consequences of the conflict in Ukraine

October 2022

Lloyd's Futureset

Foreword

Russia's invasion of Ukraine in February 2022 has proved – eight months later – to be a seismic geopolitical event, with tragic consequences. Most significant has been the vast human cost in Ukraine and beyond, with thousands killed and millions displaced or impacted by the conflict. The spillover into the spheres of economics and politics has also been significant, with ripple effects being felt all over the globe.

Many of the significant challenges businesses face at the time of writing are either directly or causally connected to the conflict. Inflation, prompted by rising food and fuel prices, continues to embed itself in economies around the world with many governments and central banks being compelled to take action in an effort to mitigate the impacts. Market volatility continues to persist as experts try to anticipate the changing geopolitical landscape. Social unrest continues to grow as electorates express discontent at the economic and political fallout. There are no simple answers, with many decisions taken to mitigate emerging issues running the risk of unintended consequences.

With little hope of a resolution in sight, the conflict and its impacts seem likely to be with us for the foreseeable future. Businesses seeking to respond must therefore develop a broad understanding of the changing risk landscape – and insurers must partner with them in building resilience.

Our first report, published 27 July 2022, sought to support the first aim by helping businesses build their knowledge of the potential impacts of the conflict. "Ukraine: A conflict that changed the world" analysed a range of plausible scenarios for the conflict's development, while outlining their possible consequences on areas like inflation, energy, cyber and supply chains. The analysis revealed the complexity of the risk landscape; the correlation and connection of these impacts; and the urgent need for risk solutions to mitigate and build resilience against the conflict's global fallout now and in the future.

In this second report, our focus turns to the role insurance and reinsurance can play in those mitigation efforts: both the solutions already available, and the areas requiring further exploration and innovation in order to support the needs of our industry's diverse customers.

Ultimately, it provides a call to action. Society needs insurance now more than ever, and uncertainty is the currency of a risk management industry like ours. With a range of tools at our disposal – from expertise and capital pools, to innovation and extensive networks – our industry must accelerate our efforts to help people and businesses face a complex risk landscape with confidence and resilience. Presented with the chance to address unmet needs through new solutions and ideas, it is our innovation, investment and collaboration that will contribute to a global response that balances short-term critical needs with equally important long-term objectives.

In seeking to convert our insight into action, Lloyd's and Aon are committed to deploying our expertise and resources to drive action across the industry – including collaborating to establish an innovation forum that will accelerate the development and delivery of novel solutions that can address emerging client needs. This continues our market's pioneering response to the conflict, ranging from parametric products to help businesses continue operations to a first-of-its-kind facility insuring grain shipments from Ukraine.

We're determined to channel that energy towards powering further innovation in this time of upheaval and opportunity. Encouragingly, our conversations with insurance and reinsurance professionals around the world have revealed the same resolve, giving us confidence that our industry stands ready and able to meet the task at hand.

We hope you find this report a useful tool as you plan those next steps, and we look forward to working with you to build a braver and more resilient future.

John Neal
CEO, Lloyd's

Dominic Christian
Global Chairman, Reinsurance Solutions, Aon
Deputy Chairman, Lloyd's

01 Background

Our first report: understanding the impacts

In July 2022, Lloyd's and Aon published a joint report "Ukraine: A conflict that changed the world", which explored the medium to long term consequences of the Ukraine crisis on the risk landscape.

The report examined the multiple implications of the still-unfolding situation in Ukraine on businesses and industries, including how the conflict has accelerated existing global trends such as the growth in economic and geopolitical risk, and social transformation.

Through interviews with over 75 (re)insurance practitioners and sector-specific experts, we identified seven areas likely to create new pressures on businesses over the medium to long term: **cyber, supply chain, food security, climate transition, energy security, ESG** and **public sentiment**. Each of these market forces are highly interconnected, making it ever-more vital that businesses have a well informed and broad strategic approach to risk.

Given the unpredictable and evolving nature of the situation in Ukraine, the analysis was informed by an exploration of five potential scenarios to help set out a range of possible outcomes from the conflict. These ranged from a Russian retreat through to an extreme conflict escalation with more actors becoming involved.

More likely scenarios			Less likely scenarios	
01 Defensive push-back	**02 Protracted conflict**	**03 Annexation**	**04 Collapse of Ukraine**	**05 Escalation**
Ukraine military successes force a change in Russian policy	Support for Ukraine from an alliance of states leads to a protracted conflict	Russia controls parts of Eastern and Southern Ukraine in a newly divided state	Ukraine collapses and becomes incorporated into Russia	Escalation leading to a NATO-Russia conflict

Developments since publication

Since publication of our first report there have been several developments in the crisis that will have knock-on impacts on the risk landscape.

Examples of key developments include:

Nord Stream 1 and Nord Stream 2 disruption:	The announcement that Russia will indefinitely suspend gas flows to the EU through the Nord Stream 1 pipeline is expected to worsen the already difficult gas supply situation with ripple effects on households and businesses. A series of explosions and gas leaks have subsequently occurred from both the Nord Stream 1 and Nord Stream 2 pipelines, causing further shocks to gas prices.
Russia reducing reliance on USD:	The agreement that China can now purchase gas from Russian state gas company, Gazprom, in roubles and yuan instead of USD, could have far-reaching implications on global supply chains as markets react and understand the implications of a potentially weakening role of the USD.
Zaporizhzhia nuclear plant shutdown:	Due to fighting in the area, Europe's largest nuclear plant has been shut down to avoid a potential radiation disaster, exacerbating already existing energy security challenges.
Russian annexation, Ukrainian counter-offensive:	Vladimir Putin has signed "accession treaties" formalising Russia's annexation of four occupied regions in Ukraine and signalled a potential nuclear escalation to protect these new self-declared borders. Meanwhile Ukraine has made a number of territory gains, including in regions previously annexed by Russia.
Russian mobilisation of troops:	Russia has announced a partial mobilisation of around 300,000 military reservists, which has led to domestic protests and people fleeing the country.

With further developments in the conflict expected – and full mitigation of its impacts unlikely – businesses must instead seek to adapt and build resilience against the conflict's potential outcomes. The first step is to build an understanding of the risks – as outlined in our first report – as well as the available solutions highlighted in this second report.

02 Executive summary

Preparing for the possible

Our industry has been an active participant since the start of the conflict, offering a key financial lever in the global community's response – and we will continue to play our part as the crisis timeline extends.

As the conflict continues to take its toll on populations and economies around the world, Lloyd's has worked with global businesses, governments, and regulators to deliver a comprehensive sanctions regime against the Russian state.

In July, we released a landmark report providing real-life, practical insights on the challenges that businesses and communities are facing and how they can adjust their risk management approaches in response. And when grain supplies became stranded in Ukraine's ports, Lloyd's provided essential backing to a UN-brokered deal securing its recovery, while launching a landmark facility to insure the shipments.

Our industry also has a vital role to play in building sustained, long-term societal and economic resilience, holding a formidable toolkit to tackle challenges across industries and address protection gaps:

01

Capital: Bringing capital to bear

The (re)insurance industry can help to build long-term resilience by deploying its capital to remove risks from customers' balance sheets and reduce their exposure to volatile risks

02

Solutions: Addressing emerging needs

Innovation in the sector will be essential in helping to address the complex challenges that will emerge from the crisis. The (re)insurance industry has an opportunity to develop new products and new ways of sharing risk to help businesses navigate what will be an uncertain landscape for some time to come

03

Risk advisory: Becoming a true risk partner

The industry can deploy its deep risk expertise by providing advice on risk mitigation and management to ensure that customers are prepared for a range of outcomes

04

Collaboration: Key to unlocking action and driving change

Insurance is a key enabler of financial resilience, and cross-sector partnerships can accelerate the development and delivery of the novel solutions that will be necessary

Implications to market forces

Market force	Implications	Potential role for insurance
Cyber	**Business implications**: An increased threat of cyber-attacks may spur demand for holistic cyber risk solutions as incidents evolve in complexity. Organisations may increasingly seek cover against physical damage and business interruption or contingent business interruption (BI/CBI) arising from cyber incidents. **Insurance implications:** The industry will need to give careful thought to managing systemic cyber risk exposure while improving clarity for customers on wordings. In addition, cyber risk models remain relatively nascent, lagging the growing threat and demand for cyber cover, currently limiting portfolio expansion and insurability.	**Capital:** Invest in modelling capabilities which may improve investor appetite for cyber risks. **Solutions:** Further develop affirmative cyber physical damage offering and be more explicit around CBI cover in cyber policies, for example including a wider range of triggers. **Solutions:** Stripping war from core cyber policies could reduce ambiguity for businesses, whilst allowing aggregation risk to be effectively managed. In the longer term, it creates potential for greater innovation around cyber. **Risk advisory:** Develop hypothetical business risk scenarios to assist with contingency planning; continue to help implement hygiene controls such as encrypted back-ups and broadening access to crisis advisory services.
Supply chain	**Business implications:** The conflict has exposed existing supply chain vulnerabilities, especially within large, complex supply chains. Businesses may increasingly look to existing insurance solutions such as BI/CBI, as well as more sophisticated solutions that effectively de-risk the full supply chain. **Insurance implications:** The sector may need to take more of a risk advisory role to effectively support small businesses. Trends such as near-shoring and re-shoring may lead to increased demand for property and construction coverages.	**Solutions:** Consider developing new supply chain insurance that looks beyond physical damage triggers to address non-damage BI and the risk of tier 2/3 suppliers facing disruption. **Solutions:** Adapt existing solutions like parametric fuel price cover to include other essential commodities. **Risk advisory:** Work closely with customers to obtain detailed exposure data, a critical component in developing sophisticated analytical risk models; develop capabilities to better quantify supply chain risk. **Risk advisory:** Leverage big data and analytical tools to offer supply chain health checks which could entail geospatial analysis and evaluating dependencies between businesses and tier 2/3 suppliers.
Food security	**Business implications:** Food security has become a global issue, exacerbated by the conflict in Ukraine. The potential for civil unrest in countries that are highly reliant on Ukrainian produce may increase demand for political violence or political risk (PV/PR) cover in these regions. A desire for greater food independence could fuel demand for new agricultural solutions and the opportunity to support farmers with commodity price volatility risk. **Insurance implications:** The availability of insurance can continue to facilitate the transportation of produce out of Ukraine. Grain quality may be compromised if there are shipment delays and improper storage which the market could seek to address.	**Capital:** Seek to establish similar structured solutions to the grain facility, for commodities that Ukraine is rich in. **Solutions:** Develop products with a political trigger covering the quality of grain in the event of shipment delays and parametric solutions to protect against a range of commodity price risks. **Solutions:** Develop resilient and clearly worded PR/PV cover for businesses operating in developing countries. **Solutions:** Support domestic farming activities through enhancing agricultural index products. **Collaboration & solutions:** Existing parametric solutions can be extended to support humanitarian needs through partnerships with governments to speed up the transfer of funds.

The implications of the conflict are vast, and governments, businesses, and individuals around the world will look to the (re)insurance industry for greater support in several areas. The opportunity for action identified in this report across the seven market forces shaping the risk landscape is summarised in the following table.

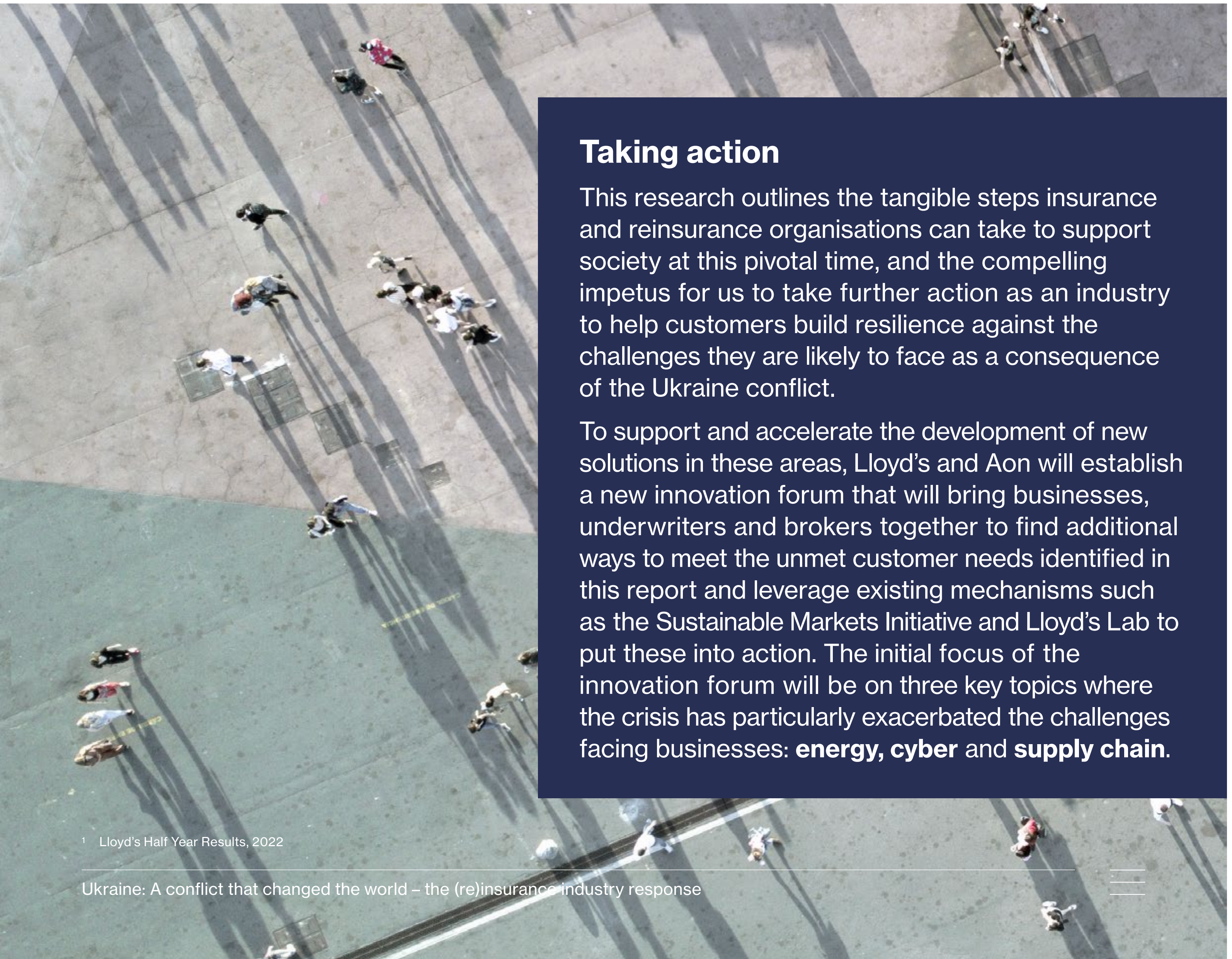
Market force	Implications	Potential role for insurance
Climate transition	**Business implications:** The conflict has heightened the need to balance short term energy security and price volatility with low carbon commitments. **Insurance implications:** The industry can support an accelerated transition by providing risk transfer solutions that promote green energy growth, whilst also addressing potential biodiversity concerns stemming from any rushed renewable energy projects and electric vehicle (EV) supply chain challenges. Additionally, (re)insurers can play a role in promoting energy security alongside enabling an orderly and urgent transition by maintaining support for companies with credible transition plans.	**Capital:** Developing an end-to-end approach for financing critical transition and climate innovation activities, in partnership with the whole financial services sector. **Capital:** Alternative risk structures can offer continued support for companies with robust transition plans. **Capital & solutions:** Insurance can be used to make emerging climate-positive technologies investment grade, by bringing projects within the risk tolerance boundaries of other financial institutions. **Capital, solutions & risk advisory:** Structured solutions, multiline coverage and a strong understanding of the risk landscape will likely be key to providing more support to these technologies. **Solutions:** Products to support biodiversity protection gaps e.g. deserts, oceans and forests.
Energy security	**Business implications:** Russia's invasion of Ukraine has led to soaring inflation rates and prompted significant monetary and fiscal action by governments and central banks. Diversification of energy sources away from Russian oil will require significant investment in both infrastructure redesign and new renewables. Surging energy prices are leading to the recommissioning of traditional and brown energy sources as nations seek to balance long-term climate transition goals with short-term concerns around supply and affordability. **Insurance implications:** Some energy classes may see limited capacity due to (re)insurer restrictions and exclusions. A need for infrastructure re-development will likely drive midstream/downstream (re)insurance capacity needs and small renewable energy projects will likely create a new high volume, low-premium customer group.	**Capital:** Opportunity to continue supporting nuclear industry through national pools and MGAs. **Capital:** Respond to increasing demand in Liquefied natural gas (LNG), requiring a sophisticated underwriting approach, as well as other midstream/downstream markets. **Capital & risk advisory:** Provide specialist risk management support to small risks, such as through collaboration on structured solutions and delegated authorities. **Solutions:** Develop innovative solutions for private energy generation or storage systems e.g. build back better.
ESG & public sentiment	**Business implications:** Issues relating to the conflict and the associated heightened ESG focus are creating complexities in the ESG landscape and impacting public sentiment. **Insurance implications:** As such, there may be increasing demand for insurance against litigation risk, reputational risk and crisis management products. There is also a role for the sector to use its risk expertise in support of refugees and Ukrainian redevelopment efforts.	**Capital & solutions:** React to increasing demand for litigation risk, reputational risk, crisis management and civil liability products that can support companies with the evolving ESG landscape. **Solutions:** Develop explicit and clear coverage within PV/PR policies, and create PR/PV cover that is tailored for SMEs – a key protection gap. **Risk advisory:** Continued development of proactive risk management solutions and data modelling capabilities, such as benchmarking, media monitoring and sentiment analysis. **Collaboration & risk advisory:** Exploration of humanitarian sector partnerships can help the industry deploy its advisory services to support rebuild efforts and refugee cover.

Progress to date

With the conflict in Ukraine continuing to inflict devastating consequences, the insurance industry has taken proactive steps to protect customers from the fallout.

Existing policies have already responded to help customers navigate the enormous challenges they are experiencing, with the Lloyd's market reserving £1.1bn for customers impacted by the conflict[1], and the sector has also moved quickly to develop new solutions that address businesses' emerging needs. However the scale of the challenge means there remains a need for innovation and investment across all the themes explored in this report.

The current maturity of existing solutions ranges between sectors: for example, the energy insurance market is well placed to respond to the growing focus on energy security and the sector has already begun to take action to address the challenges and opportunities presented by climate change, food system resilience and cyber risks. In contrast, solutions for supply chain and reputational risk remain relatively immature, presenting an opportunity for (re)insurers and brokers to meet a growing customer need.



Taking action

This research outlines the tangible steps insurance and reinsurance organisations can take to support society at this pivotal time, and the compelling impetus for us to take further action as an industry to help customers build resilience against the challenges they are likely to face as a consequence of the Ukraine conflict.

To support and accelerate the development of new solutions in these areas, Lloyd's and Aon will establish a new innovation forum that will bring businesses, underwriters and brokers together to find additional ways to meet the unmet customer needs identified in this report and leverage existing mechanisms such as the Sustainable Markets Initiative and Lloyd's Lab to put these into action. The initial focus of the innovation forum will be on three key topics where the crisis has particularly exacerbated the challenges facing businesses: **energy, cyber** and **supply chain**.

[1] Lloyd's Half Year Results, 2022

Current (re)insurance industry progress in responding to the market force challenges arising from the conflict

Immature

Supply chain

The market for supply chain insurance remains relatively nascent. Risk transfer and advisory solutions extending to Tier 2 and 3 suppliers could be valued by customers

ESG & public sentiment

Reputational damage, political violence and crisis management remain areas where businesses are likely to seek greater protection

Gaining momentum

Cyber

Work has already begun to adapt existing cyber offerings to suit customers' needs arising from the conflict. Physical damage, contingent business interruption and standalone war solutions are examples where the industry could take further action

Climate transition

The (re)insurance industry has a key role to play in enabling and financing the transition to a low-carbon future. Further action can help accelerate progress across critical transition activities, particularly the adoption of new green technologies

Food security

Critical progress has been made to limit the challenges around Ukrainian grain exports. There is the potential for further action around wider global implications, such as products to help scale up domestic production

Well progressed

Energy security

Solutions are largely mature, with shifts in demand and the deployment of capital the key areas of focus for the (re) insurance industry

03

Key market forces influencing the risk landscape

The Ukraine conflict has far-reaching implications across the global risk landscape. The following section highlights the implications and opportunities for the (re)insurance sector across the seven key market forces, namely **cyber, supply chain, food security, climate transition, energy security, ESG** and **public sentiment.**

Cyber

Cyber is an unpredictable, growing and ever-evolving threat that has implications for every individual, community, and business. Whilst cyber-attack activity has reduced in the immediate aftermath of the conflict in Ukraine, the threat of state-sponsored cyber-attacks may grow in a climate of heightened geopolitical tension. Western nations that support Ukraine by imposing economic sanctions, for instance, may face a particular risk of potential retaliatory attacks from Russian hackers.

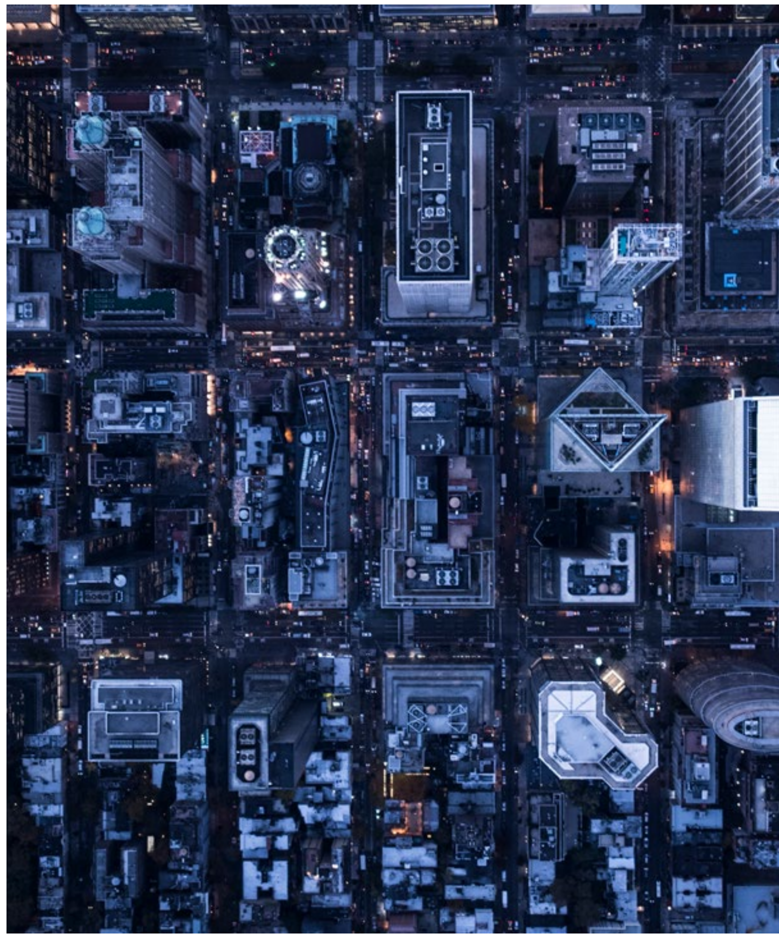
Cyber risks are becoming ever more complex, with increased likelihood of physical damage resulting from cyber-attacks as well as greater knock-on impacts on business interruption and supply chains.

> **Cyber-attacks targeting critical infrastructure increased from less than 10 in 2014 to around 400 in 2020[2] and have undoubtedly continued to grow since.**
>
> **Gartner, 2022**

These effects will be felt by organisations worldwide, particularly since cyber-attacks do not have the same geographical boundaries as their physical counterparts.

Since issuing the first ever cyber policy in 1999, Lloyd's has played a crucial role in developing this class of business. Today, Lloyd's writes around 20% of global cyber insurance[3], and recently it took steps to improve clarity for insureds surrounding war exclusions. Cyber will remain an important class and Lloyd's continues to take a pragmatic and innovative approach to supporting the growth of the cyber market.

The Lloyd's market and global (re)insurance sector has a key role to play in helping organisations build greater cyber resilience and there is significant opportunity for the industry to demonstrate its value to customers by helping them manage this evolving threat. A recent example of this is outlined in Lloyd's Futureset's geopolitical cyber report, Shifting powers: physical risk in a changing geopolitical landscape which explored the development of affirmative cyber physical damage offerings and developing explicit contingent business interruption cover in cyber policies.



[2] Gartner, 2022
[3] Lloyd's, 2022

Implications and actions for the (re)insurance industry

Market theme: An environment of heightened cyber threat is stressing the need to increase cyber resilience

Key (re)insurance market implications

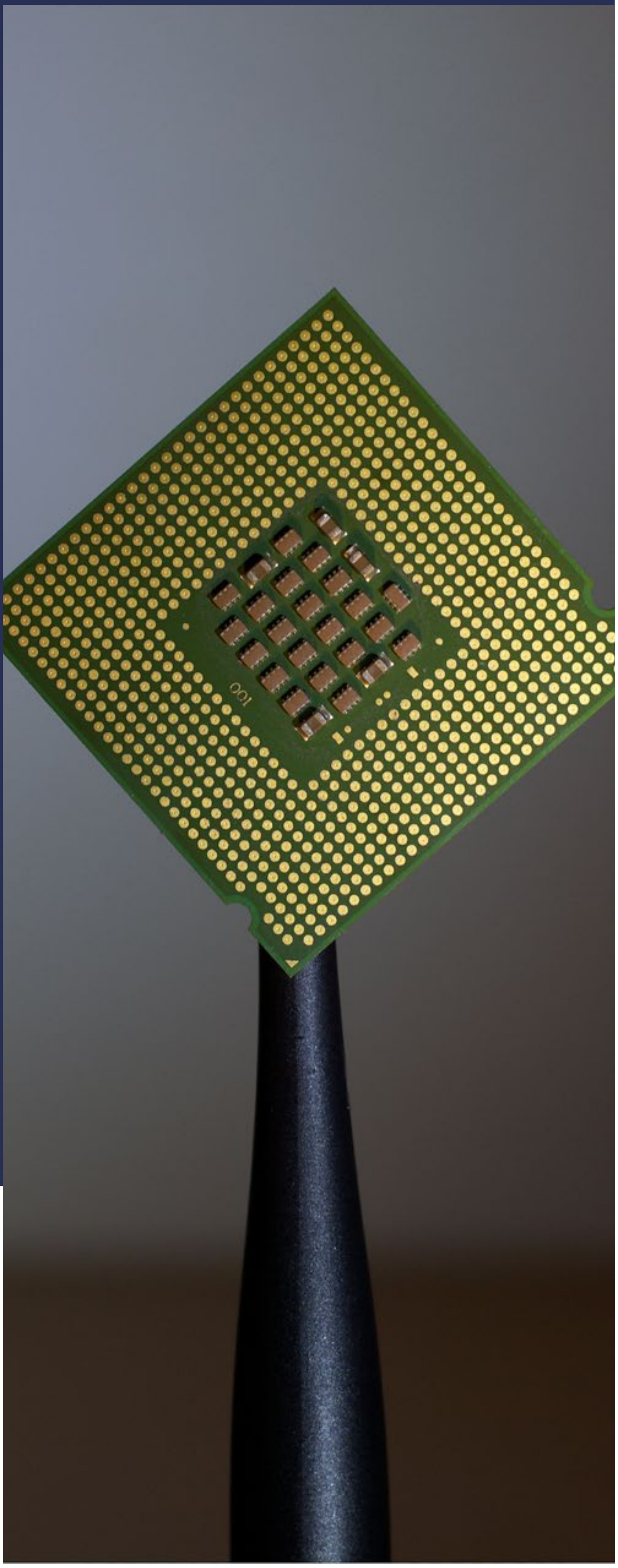
As the financial and reputational implications of major cyber incidents become clear, organisations may increasingly consider purchasing stand-alone policies covering cyber with higher limits to ensure adequate coverage.

Key (re)insurance market action(s)

The (re)insurance industry is well positioned to help build cyber resilience

Insurers and brokers can continue to help customers implement hygiene controls such as incident response plans, encrypted back-ups, and updated patch management programs, to help improve cybersecurity; crisis advisory services could further be extended to cyber as part of a holistic offering.

Developing hypothetical business risk scenario exercises with risk managers - as many carriers already do today - is also a useful tool to manage uncertainty, helping with contingency plan development.



Implications and actions for the (re)insurance industry

Market theme: The conflict has highlighted potentially systemic risks in the cyber class

Key (re)insurance market implications

If not managed properly, a cyber-attack has the potential to expose (re)insurers to systemic risks

To manage their liabilities and to ensure customers have certainty about how their policy wordings will react in the event of a claim, insurers need to be clear in their wordings as to the cover they are providing.

Aon practitioners expect that in the coming 12-24 months every cyber policy could have enhanced cyber war exclusion language. Cyber-attack risks involving state actors have additional complexities that require careful consideration from insurers.

Case study: The Lloyd's Market Association (LMA) has undertaken an extensive exercise in producing suitable model clauses addressing state backed cyber-attacks, published in 2021[5].

Key (re)insurance market action(s)

Lloyd's are committed to supporting a resilient cyber market, and it is important that underwriters understand the complex and potentially systemic risks in the cyber class

Lloyd's requires that all policies specify whether cyber cover is provided by either including affirmative cover or by excluding, and more recently Lloyd's announced that it will require catastrophic state-backed attack exclusions in all standalone cyber-attack policies[4].

Robust wordings can help to reduce ambiguity for businesses on whether their policy will cover for losses

Insurers should also ensure that their wordings are legally reviewed to guarantee they are sufficiently robust to reduce the risk of disputes. Over the long-term, this approach can also enable greater innovation around cyber cover, as the capital requirements become less restrictive once war is removed from the core cover. It also allows insurers to appropriately manage aggregations to ensure cyber risk is adequately priced.

4 Lloyd's, 2022
5 LMA, 2021

Implications and actions for the (re)insurance industry

Market theme: The threat of physical damage from cyber incidents is increasing, including attacks that target critical infrastructure

Key (re)insurance market implications

Some industries are more vulnerable to physical damage resulting from cyber incidents and are more likely to seek risk-transfer solutions

The 2015 Ukrainian power grid cyber-attacks are just one example of the detrimental impact cyber incidents can have on physical property. Industries and businesses most at risk from cyber physical disruption and destruction are likely to need greater coverage as the crisis develops.

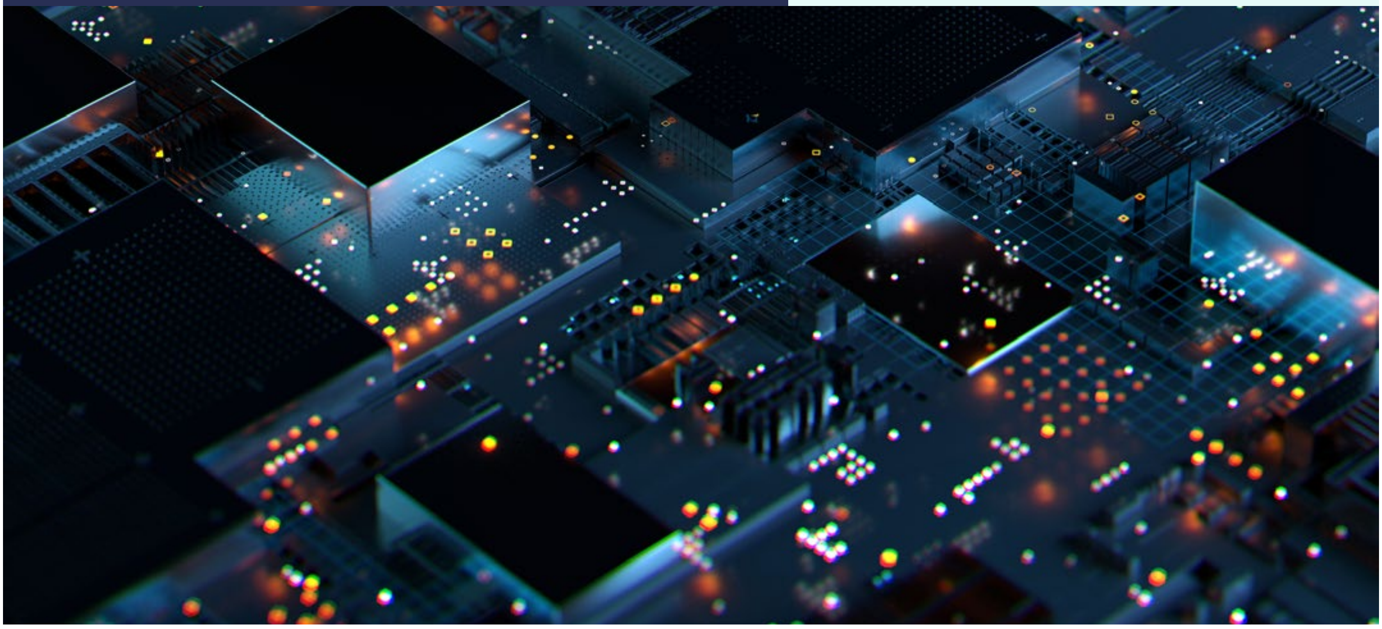
Key (re)insurance market action(s)

The cyber physical market remains relatively small and specialised and there is an opportunity to further develop existing offerings with an informed understanding and assessment of the risk – this can be especially targeted at businesses operating in more vulnerable sectors

The energy and power sectors are at significant risk from hackers due to the level of disruption such an attack would cause (e.g., mass power outages and the knock-on impacts to communication and healthcare).

Case study: Brit offers protection against physical damage resulting from cyber-attacks to businesses operating in the industrial and trade sectors through 'Brit Cyber Attack Plus' (BCAP). Alongside first and third-party coverage for physical damage, it also covers for resulting business interruption, data privacy and cyber liability, with limits up to $150mn.

Case study: The Lloyd's market is paving the way in developing solutions for the maritime industry for cyber physical risks. The policies provide financial indemnity arising from cyber incidents, including physical damage to the vessel or freight.



Implications and actions for the (re)insurance industry

Market theme: There is potential for increasing levels of business interruption (BI) following cyber-attacks

Key (re)insurance market implications

Organisations may seek greater business interruption (BI) or contingent business interruption (CBI) related cover as the knock-on costs associated with cyber incidents are better understood

Depending on how the conflict develops, an increased frequency of destructive malware attacks is possible, which may cause greater BI and loss of revenue, particularly for businesses that operate with complex digital supply chains.

A cyber CBI loss can result from damage to a service provider's IT systems or a supplier on which the insured depends. However, BI/CBI is not included in all cyber policies as standard. Whilst some CBI policies include a broad range of service providers, others restrict this coverage to technology providers.

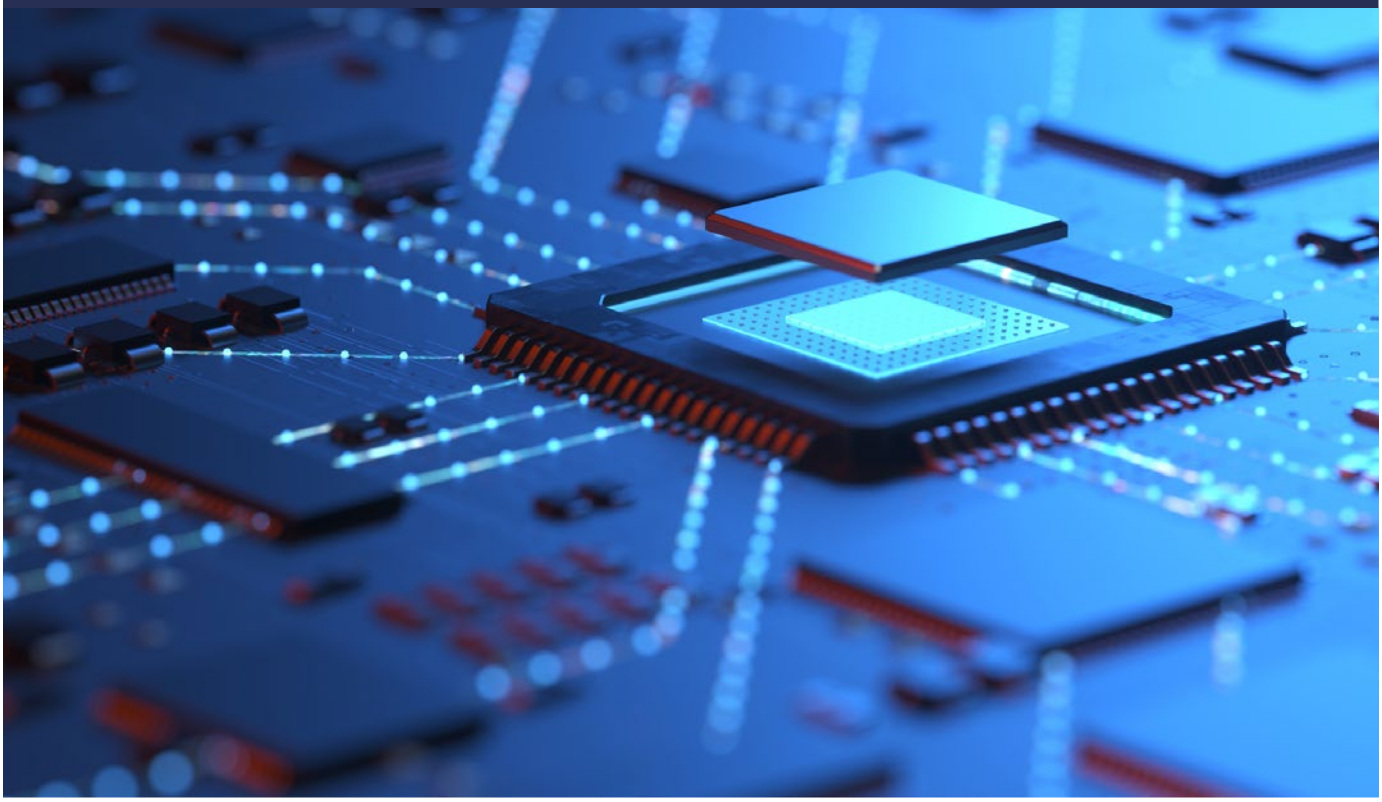
BI/CBI cover to protect against physical cyber-attacks may be sought by businesses as the cost implications are understood. For instance, a cyber-attack against a New York office block in which a hacker accessed building management systems resulted in $350 million from lost business.

Key (re)insurance market action(s)

A significant opportunity for innovation in cyber physical protections may be the extension of third-party coverage from BI and CBI

Many vulnerable businesses would be likely to seek broader BI and CBI coverage that includes a range of triggers and third-party service providers.

As with primary party offerings, BI and CBI policies require either add-on products, or a review and revision of policy wordings to both manage the losses from a major event and provide security to policyholders that the risk is acknowledged and covered.



Implications and actions for the (re)insurance industry

Market theme: Further investment in cyber risk modelling may be required to support growing demand

Key (re)insurance market implications

Cyber risk models remain nascent, creating a lack of consistency in market underwriting practice

The ability of (re)insurers to calculate and manage cyber risks remains a developing area for cyber cover, limiting portfolio expansion and insurability.

Key (re)insurance market action(s)

Investment in improved modelling capabilities will enhance risk appetite for cyber exposure and may enable further risk transfer to capital markets

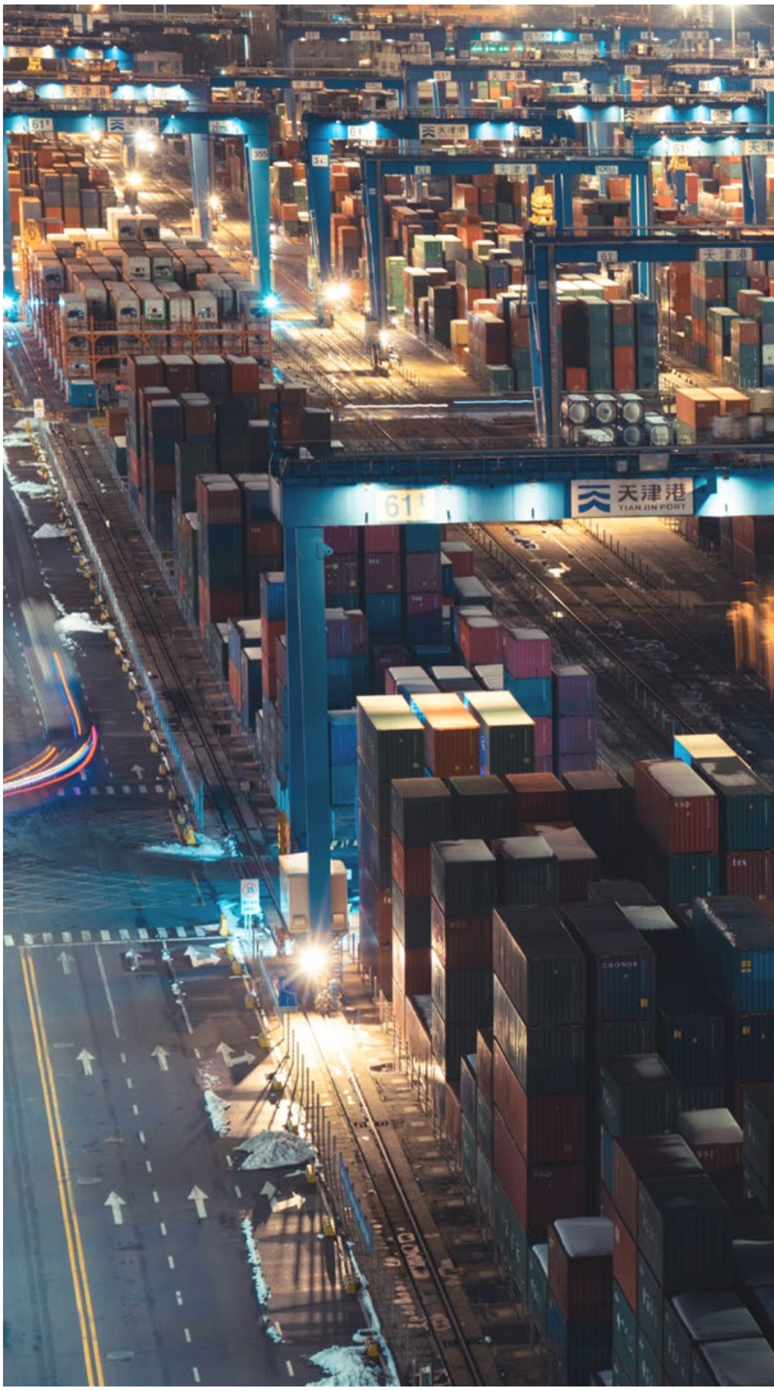
Technical hurdles around modelling may need to be overcome to help capital market investors feel more comfortable in providing further capacity for cyber.

Consideration should be also given to unlocking data collected by the relevant authorities on cyber incidents which would help enhance existing modelling capabilities.

Supply chain

The Ukraine conflict has caused significant supply chain disruption, specifically leading to transportation challenges as well as commodity and raw material shortages.

> **More than 600,000 businesses worldwide are estimated to rely on Russian and Ukrainian suppliers and currently face production bottlenecks[6]**
>
> **Dun & Bradstreet, 2022**



This crisis has exposed vulnerabilities in supply chains for many businesses around the world. As a result, firms need support to work through new ways to mitigate the risk of supply chain shocks and are considering greater investment in supply chain resilience. "Re-shoring" and "friend -shoring" may gain greater momentum as some businesses consider moving overseas production activities back home or more locally.

The insurance sector has a significant role to play in helping organisations develop adequate supply chain resilience, wherever it is located. While CBI cover has been available for over 40 years, the market for complex supply chain insurance solutions remains nascent. Developing solutions for businesses to de-risk their supply chains has the potential to create large, new opportunities for the insurance sector that directly addresses urgent business needs. Policies such as BI/CBI, political risk and non-damage BI cover, that provide broader protection for a wide range of supply chain challenges would be of immense value to organisations with complex supply chains. Businesses may also increasingly require greater protection against the risk of Tier 2 or 3 suppliers facing interruption, a significant cause of disruptions. Re-shoring and friend-shoring may require (re)insurers to offer greater support to businesses as they increase investment in new production facilities and infrastructure. Finally, looking beyond existing products, the industry can also explore ways to provide innovative responses to mitigate commodity price increases to support sectors, such as construction, which have seen particularly severe disruption.

[6] Dun & Bradstreet, 2022

Implications and actions for the (re)insurance industry

Market theme: The ramifications of the conflict on supply chains across the globe are apparent both directly and indirectly

Key (re)insurance market implications

Supply chain impacts are likely to be particularly pronounced for industries such as manufacturing, where businesses rely on large, complex supply chains. The industry must work closely with businesses operating in this sector to respond to the demand for more sophisticated solutions that will effectively de-risk their supply chains

Supply chains often operate on lean, just-in-time principles, with single-source suppliers, and therefore the appetite for any risk impacting the availability, price or quality of materials is already very low. Businesses have found that existing supply chain products can be too costly and restrictive around the causes of supply chain disruption, limiting their adoption.

Case Study: Aon offers a range of supply chain assessment and analytics solutions, intended to support clients in better understanding risk in their supply chain and building appropriate levels of resilience. The firm helps clients to profile and quantify the risk presented at key supplier sites, against a wide range of exposures. Online diagnostic tools enable clients to gain a quick assessment of their resilience posture, so they can optimise their investment in supply chain risk management.

Case Study: Allianz have developed big data models to map suppliers to industries and organisations. This allows them to provide company specific scoring and benchmarking, unlocking **greater** limits. They hope to bring these benefits to the market soon.

Key (re)insurance market action(s)

Businesses are seeking supply chain insurance products that protect them against disruption arising from a comprehensive range of causes

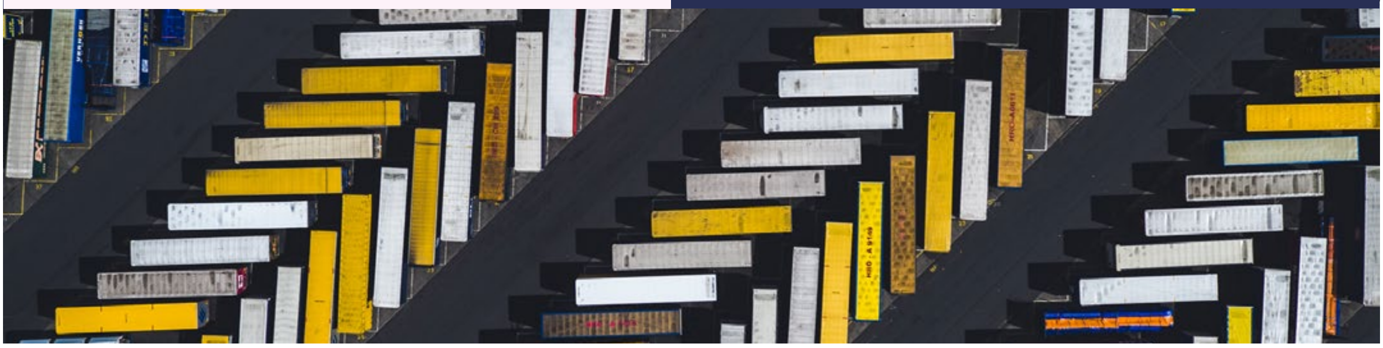
Creating new supply chain insurance that looks beyond physical damage triggers to address non-damage BI would help many businesses manage their major supply chain risks. Carriers may consider the support of treaty reinsurance arrangements to facilitate this.

Improved data and risk modelling will be critical to creating a sustainable supply chain offering

Developing successful products is dependent on obtaining detailed exposure data from businesses on their supply chain. Close partnership with customers will be critical to access better data provision and unlocking the development of more sophisticated analytical risk models. Carriers can further develop their capabilities to link supply chain exposure to BI modelling, which may help better inform BI quantification. Partnering with specialist firms offering such capabilities may accelerate a carrier's ability to meet business needs.

Solutions that go beyond risk transfer can help businesses, particularly smaller ones, better understand their supply chains and manage their risks

The insurance industry can use big data and analytical tools to help analyse risks across supply chains, for instance, testing the supply chain at each stage. Geospatial supply chain analysis could further analyse dependencies between businesses and Tier 2/3 suppliers. Both brokers and insurers could also leverage existing internal capabilities to advise businesses on their supply chain risks. Currently available natural catastrophe early warning systems might help insurers model the potential impact of a windstorm on customers' suppliers and supply chains.



Implications and actions for the (re)insurance industry

Market theme: A reliance on Russia and Ukraine's energy and agricultural commodities has resulted in a large rise in global commodity prices, further impacting supply chains

Key (re)insurance market implications

Businesses may seek risk transfer solutions to hedge against commodity price risks and support the long-term sustainability of their operating models

Ongoing sanctions and countersanctions could limit available supply further, resulting in a significant inflationary environment. This further threatens supply chain resilience as firms could become unable to afford critical supplies.

The (re)insurance industry may experience significant demand for products that limit the impact of supply chain disruptions arising from large fuel price increases, as well as agricultural and mining-related products.

Key (re)insurance market action(s)

The (re)insurance industry has started to develop solutions to address the risk of rising commodity prices. These solutions could be extended to support a wider range of industries and organisations

Innovations to date have included fuel and commodity price products which provide a mechanism for firms to protect themselves from fluctuating fuel and commodity prices. Consideration is needed to ensure these are designed as insurance rather than financial derivative products.

Similar parametric solutions, where they can be structured as insurance, could be developed for other commodities. Brokers and (re)insurers can work together to accelerate the development of such solutions for industries such as transportation, manufacturing and construction which are typically more vulnerable to price fluctuations.

Case study: Paratus launched parametric fuel price insurance specifically for shipping companies in 2021. This product meets a previously unmet need for risk-transfer solutions, particularly because this sector is highly exposed to changes in the price of fuel. Claims are paid out automatically if the price of fuel exceeds a trigger level determined in the policy.

Implications and actions for the (re)insurance industry

Market theme: Global construction projects are more likely to experience delays, inflationary impacts and supply chain issues associated with the conflict

Key (re)insurance market implications

Businesses in the construction sector may look to enhance their coverage requirements across the construction phase of projects amidst greater supply chain risks

The challenges are compounded by the many materials and components used in construction projects manufactured on a just-in-time basis.

The (re)insurance sector may see increased demand in capacity and coverage for insurance products such as delay in startup (DSU) insurance.

Other products businesses may increasingly require include sub-contractor default insurance or trade credit solutions as contractors look to diversify and reduce their dependency on one sub-contractor and supplier. BI/CBI insurance solutions may also see much greater demand.

Key (re)insurance market action(s)

There is potential to extend the support provided to businesses operating in the construction sector

New solutions could be created to include suppliers and sub-contractors in Tier 2 or above.

Brokers and (re)insurers can support with risk advisory and mitigation services. 'Supply chain health checks' could help mitigate supply chain risks by identifying whether key suppliers are based in areas with high political tensions or flood risks.

Case study on Parsyl: Parsyl is helping customers build supply chain resilience by combining risk monitoring with insurance. It offers data-powered supply chain insurance specifically for businesses shipping perishable goods such as meat, dairy, and vaccines. By placing Parsyl's sensors on shipments, businesses may benefit from expedited claim settlements, reduced claim costs, bespoke deductible as well as risk mitigation insights based on new data. Parsyl's unique solution and smart sensors helped identify a temperature issue with an air cargo client, with claim payments made in a record-breaking eight hours.

Case study on Aon's fuel and commodity price solution: Fuel and commodity price insurance, brought to insurance markets by Aon in early 2021, protects firms against rising fuel and commodity costs. This solution helps businesses protect balance sheet strength and further protects businesses as the global economy transitions to cleaner fuels. Companies in industries such as construction, energy, mining, marine and aviation are typically most exposed, and coverage is triggered if the fuel/commodity prices exceed an agreed limit. The difference between the agreed price and the higher monthly price is covered by the policy, with policyholders indemnified monthly.

Case study: Zurich offers a policy called Subguard, providing sub-contractor default insurance and indemnity to the contractor for remedial or completion costs that arise.

Case study: Zurich offers in-depth assessments to help identify enterprise and individual project level risks. For instance, many contractors use the same subcontractor for multiple projects.

Food security

The conflict in Ukraine has led to severe disruptions to food supplies. Russia and Ukraine are two of the largest global exporters of food and fertiliser, accounting for almost a third of the world's wheat exports.

Regions such as the Middle East and Africa are heavily dependent on Russia and Ukraine to meet basic food supply needs, with the disruption therefore causing a disproportionate impact to the region.

> **In May 2022, 25 million tons of grain were estimated to be stuck in Ukraine[7], unable to leave the country due to infrastructure challenges and blockaded Black Sea ports brought on by the Russian invasion. This has driven up global food prices and had a meaningful knock-on impact on supply chains, threatening global food security.**
>
> **UN, 2022**

The Lloyd's market provided essential backing to the UN and Turkey-brokered deal to retrieve grain supplies from Ukraine's ports, helping address food insecurity and market volatility at a difficult time, and shortly after launched a first-of-its-kind facility to insure shipments from the region.

Looking forward, as the food and drink sector seeks to build greater resilience by diversifying supply chains or increasing domestic production, there may be a greater need for both existing and innovative products within political risk, trade credit, agricultural and parametric solutions. Worldwide, Swiss Re forecasts global agricultural premiums to increase from $46bn in 2020 to $80bn by 2030[8]. This is particularly driven by emerging economies. The agricultural sector forms a significant part of most African economies, yet insurance penetration remains low – across all emerging markets, uptake of agricultural insurance lies below 2%[9]. Greater collaboration between the insurance industry, governments and humanitarian organisations will be vital to supporting the developing economies which face the greatest risk of a food crisis.

7 UN, 2022
8 Swiss Re Institute, 2022
9 Swiss Re Institute, 2022

Implications and actions for the (re)insurance industry

Market theme: Significant volumes of crops such as corn, wheat and sunflower seeds remain stuck in Ukraine due to Russia's blockade of Ukraine's major ports

Key (re)insurance market implications

The availability of insurance coverage is key to allow cargo vessel owners to transport produce out of Ukraine and to ease the threat of an international food crisis

Mined waters and the potential for an escalation in hostilities creates significant risks to vessels.

Considerable amounts of grain are likely to be stored temporarily, which may impact its quality therefore risk-transfer solutions may be required by businesses who rely on high-quality grain to make their products

If grain shipments are unable to leave Ukraine as expected, they may need to be temporarily stored using temporary storage bags or storing part of the harvest on the ground[10].

Key (re)insurance market action(s)

The (re)insurance sector is already playing a significant role in promoting food security, as demonstrated through innovative solutions such as the Lloyd's grain facility

There is an opportunity to establish similar programmes for other commodities critical to the food and drink sector. These could look to blend reinsurance, insurance, and third-party capital to provide greater capacity to support businesses.

There could be value in a solution covering the quality of grain in the event of delays to shipments due to the conflict

The solution could indemnify businesses if they receive substandard quality grain from the conflict zone that they are unable to use, thereby promoting food security as they are able to purchase grain from elsewhere. Similar policies already exist, but the trigger in this case would be political.

Case study: The Lloyd's market has launched a facility for vessels exporting grain from Ukraine. It provides up to $50 million in all risks marine cargo and war coverage for exporters using the newly agreed safe corridors. Backed by over 15 underwriting entities, the facility highlights the crucial role of (re)insurance to navigate this crisis.

10 IFPRI, 2022

Implications and actions for the (re)insurance industry

Market theme: Food shortages and subsequent increases in food prices due to the crisis could lead to increased social unrest

Key (re)insurance market implications

Businesses, particularly those operating in developing countries more prone to civil unrest, may give increased emphasis to the consideration of political risk (PR) and political violence (PV) programs

Over 60 insurers, mainly in the US, UK, and Bermuda, supply this cover, with a total market capacity of $3.7 bn. Although the risk of civil unrest is higher in developing nations, insurance penetration for PR/PV remains low in these countries.

Key (re)insurance market action(s)

Building clear and resilient PR/PV solutions, particularly for developing countries is essential to attract large corporations and foreign direct investment to higher risk, emerging economies and promote economic growth.

Such solutions could include tailored propositions for 'hotspot' businesses (e.g. supermarkets or food warehouses) with features such as faster claims settlements to mitigate the risk of a food crisis. Solutions could extend beyond risk transfer: insurers and brokers could help organisations develop contingency plans in case of civil unrest.

Implications and actions for the (re)insurance industry

Market theme: Developing nations, highly reliant on food imports from Russia and Ukraine, are now more vulnerable to food insecurity and may experience food shortages

Key (re)insurance market implications

The insurance industry may need to look at innovative ways to extend solutions and coverage to areas in real need

Regions such as the Middle East and Africa have limited alternative supply options. Somalia, for instance, imports 100% of its wheat from Russia and Ukraine. Helping developing countries navigate the global food crisis is not only a positive humanitarian initiative, but it also boosts economy -wide resilience which could create longer-term opportunities for the insurance sector as insurance penetration increases.

Key (re)insurance market action(s)

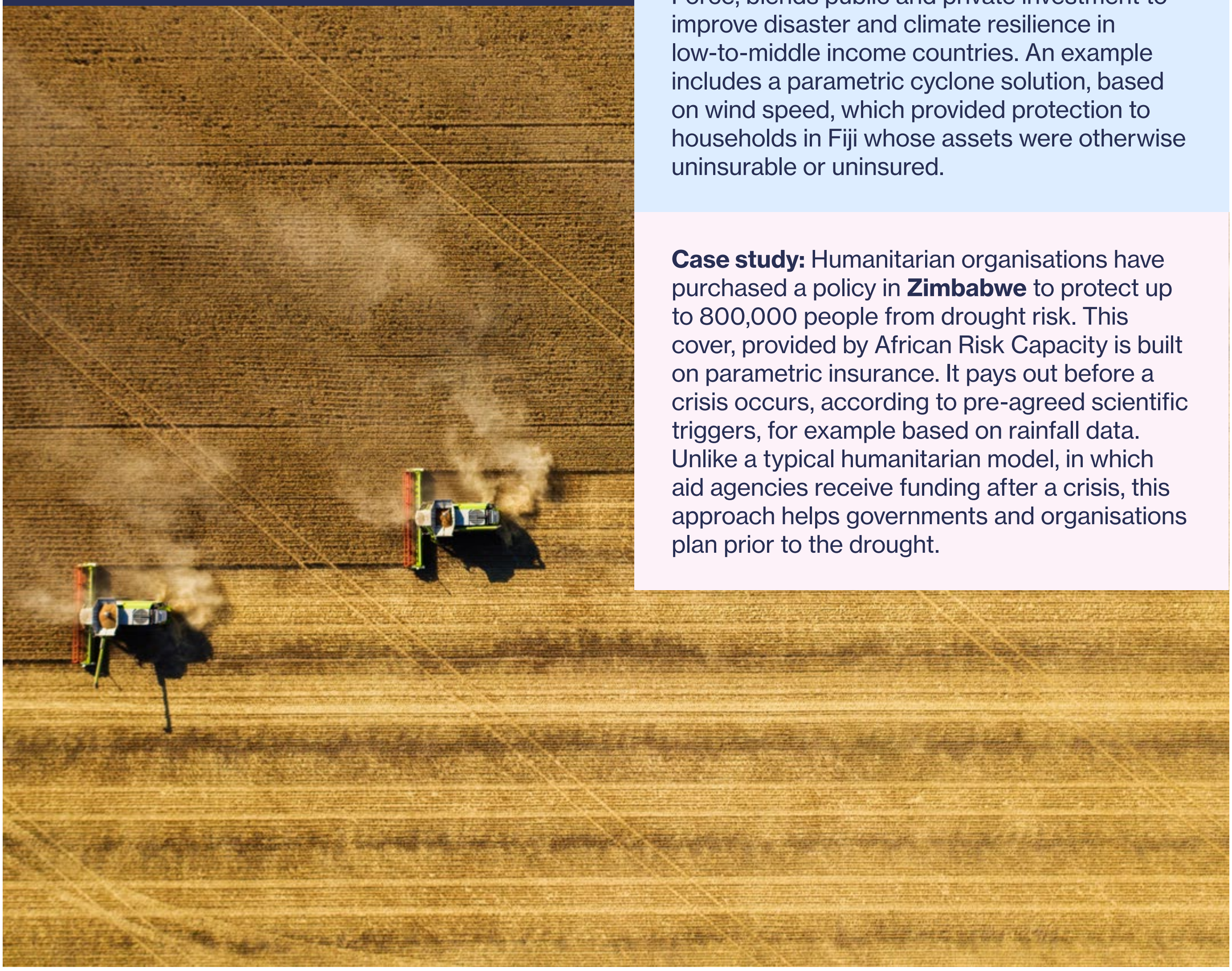
Partnerships with governments and humanitarian organisations may be considered to close protection gaps and develop robust insurance schemes

Solutions that could be explored with humanitarian organisations include parametric coverage to help speed the process of getting funds to those in need following supply shortfalls.

An inflation protection product could also be considered to boost income sustainability in subsistence economies. Public-private partnerships could be explored to put the necessary infrastructure in place.

Case study: The Disaster Resilience Framework (DRF), developed by the SMI Task Force, blends public and private investment to improve disaster and climate resilience in low-to-middle income countries. An example includes a parametric cyclone solution, based on wind speed, which provided protection to households in Fiji whose assets were otherwise uninsurable or uninsured.

Case study: Humanitarian organisations have purchased a policy in **Zimbabwe** to protect up to 800,000 people from drought risk. This cover, provided by African Risk Capacity is built on parametric insurance. It pays out before a crisis occurs, according to pre-agreed scientific triggers, for example based on rainfall data. Unlike a typical humanitarian model, in which aid agencies receive funding after a crisis, this approach helps governments and organisations plan prior to the drought.



Implications and actions for the (re)insurance industry

Market theme: Russia's attack on Ukraine has driven up commodity prices creating considerable uncertainty for farmers around their income levels

Key (re)insurance market implications

Farmers may increasingly require risk-transfer solutions to hedge against commodity price risks

The extreme volatility of agricultural prices could make it difficult for farmers to gauge their income levels and threaten the ability for farming activities to continue, escalating the food crisis.

Key (re)insurance market action(s)

Innovative risk transfer solutions can promote the sustainability of farming activities in the face of commodity price shocks

Parametric solutions can provide compensation when commodity prices fall below a predetermined value, with parameters obtained and data independently verified by third parties. With no loss adjuster's assessment needed and automatic claims payment, such solutions are more likely to be affordable and well suited to small farmers.

Implications and actions for the (re)insurance industry

Market theme: The conflict in Ukraine is having a large knock-on impact on supply chains and food security. To ensure an adequate supply of food, countries are starting to turn towards food independence and want to increase domestic production

Key (re)insurance market implications

There may be a demand for new products for the agricultural industry to meet the required growth in domestic production

As domestic production ramps up, the industry may invest in new agricultural technologies to boost yields or increase efficiencies, for example biologics that offer improved plant health and soil fertility.

Some regions may require greater support (e.g. Middle East and African regions)

Regions that are vulnerable to climate shocks such as flooding, drought and irregular rainfall which may find it difficult to increase domestic production.

Key (re)insurance market action(s)

Extending the insurance protection offered to domestic farmers can help promote food security

Agricultural index insurance, still relatively nascent, provides for automated pay-outs if the index reaches a pre-determined threshold. This index could be linked to parameters such as the level of rainfall. Not only can this facilitate faster payments, but it can also lower insurers' costs, and therefore lower premiums, compared to traditional crop insurance, because farms do not have to be individually visited.

Case study: Swiss Re offers 'Soil Moisture Deficit Index Insurance' which protects farmers worldwide against drought related **losses**. They have partnered with VanderSat, a global provider of satellite-observed soil moisture data. The policy pays out if case soil moisture levels fall below a pre-defined level.

Case study on Stable – A Lloyd's Coverholder offering protection for volatile milk prices: A key issue facing farmers and buyers of agricultural products is the volatility of commodity prices. Stable's objective is to offer a way for businesses, particularly in the trillion-dollar food and farming industry, a way to purchase insurance and mitigate their risk. Stable's solution is a parametric insurance product which provides a safety net to dairy farmers if milk prices fall below a certain level. The parametrics are based on third-party independently verified index prices to work out premiums and claims payable. The insurance pay-out is triggered if it exceeds the index-based commodity price. As no individual loss assessment and adjustment is required in this process, claims payments are automatic which ensures faster settlements and lower payments.

Climate transition

As companies and consumers suffer the impacts of spiralling energy prices, the conflict may put further pressure on governments and companies to transition to greener energy sources, shifting away from an over-reliance on fossil fuel producers.

Opinion in some parts of the world has wavered, but many governments remain committed to balancing the transition timetable whilst also ensuring that consumers are protected through the current period of change.

More than 90% of global emissions are covered by net zero pledges[11], so as nations look to diversify their energy supply, green sources are an obvious alternative, driving a growth in the renewable energy industry and supporting an accelerated climate transition. Whilst this is not a short-term solution to current energy supply issues, it exemplifies the need for green energy infrastructure and development, particularly in nations with abundant renewable energy resources.

For risk managers, risk carriers and investors, insurance is a powerful tool to enable the development of innovative products and services vital to the decarbonisation of industries and economies.

There are three key avenues through which (re)insurers can do this:

1. The provision of risk transfer products for green technologies
2. The continuing support of transitioning companies
3. Financing the transition

Lloyd's has brought together leaders from a number of the largest and most influential global insurance firms to form an Insurance Task Force (ITF) as part of the Sustainable Markets Initiative. Launched in June 2021, the task force is focused on driving tangible progress as a group and accelerating the pace of industry transitions towards a more resilient and sustainable future, putting 'Nature, People and Planet' at the heart of global value creation.

[11] State Street Global Advisors, 2022

Implications and actions for the (re)insurance industry

Market theme: An acceleration in renewable energy investment is expected due to the scarcity in fossil fuel supply and record energy prices

Key (re)insurance market implications

There may be increasing demand for renewable energy (re)insurance capacity

Global renewable energy insurance capacity tightened following carrier exits amid a period of high-volume claims, largely driven by the construction phase of the renewable energy project lifecycle.

Renewable energy projects, particularly offshore wind projects, have increased in size and complexity in recent years, with this trend likely to continue, evolving the risk landscape.

Rushed renewable energy projects that cause damage to biodiversity and ecosystems could impact an (re)insurer's own ESG goals

This is important as biodiversity and protection of ecosystems are "E" goals that should be considered alongside emission reduction goals.

Key (re)insurance market action(s)

Renewable energy lines of business are likely to continue to grow, with the potential for insurance to extend beyond purely traditional coverage

There will be growing demand for existing products such as Contractors All Risks (CAR), Erection All Risks (EAR), Delay in Start Up (DSU), property damage (PD) and BI). Similarly, more emerging covers such as extended warranty, intellectual property, lab to scale guarantee, and revenue shortfall and parametric cover will be demanded.

New insurance products to protect biodiversity from any poorly controlled push to develop renewable energy projects. For example, desert ecosystems may be damaged by large solar farms and endangered bird species could be impacted by wind farms. As such, insurance products to support natural ecosystems such as deserts, wetlands, agricultural land, oceans, and forests can help mitigate damage.

Big data can also be used to develop parametric insurance that focuses on biodiversity. For example, SSE Renewables is working with Microsoft and Avanade to create digital twins of offshore wind farms which can be used to reduce the impact on ecosystems, by monitoring changes in reefs and bird life around the farm.

Case study: In 2021 the SMI Insurance Task Force published a Sustainable Products and Services showcase, which details for the first time, the wide-ranging commercial insurance support that is available and supporting green innovation across multiple sectors and geographies. It details insurance coverages across the hydrogen supply chain, solar energy, wind power, and carbon capture, together with parametric and microinsurance schemes protecting coffee farmers in Nicaragua and cyclones in Australia.

Case study: Travelers offers a specialised insurance product known as Windpak® which provides bespoke coverage for operational wind farms and solar energy projects from construction to completion, alongside crane safety training, a key driver of wind farm claims. Lloyd's has partnered with Travelers to support further product innovation.

Case study: AXA XL has taken several steps to focus on biodiversity, including calling for the development of biodiversity risk metrics adapted to investor needs and committing to funding the methodology development, investing in numerous forestry assets, leveraging parametric insurance to reduce wildfire risk, and has started to take steps to insure mangroves, currently unprotected by market-based mechanisms.

Implications and actions for the (re)insurance industry

Market theme: The scaling of green technologies, currently in their infancy, will be needed to support an accelerated transition

Key (re)insurance market implications

(Re)insurance is key to helping new and emerging green technology, such as battery storage, smart grids, hydrogen and carbon capture, usage and storage (CCUS), reach the investment levels necessary to support an accelerated transition

It can provide investors and project owners /developers with the confidence needed to invest in critical green technology, providing access to the sectors' risk management expertise. Battery storage will be a key factor given the seasonality of renewable energy in many regions.

Emergent renewable technologies, where the technology is considered prototypical and risks relatively new, are not yet available at scale

As a result, the data required to support modelling and risk pricing is limited.

Projects may be smaller scale initially. Access to the London market's expertise and ability to foster innovation and create new solutions for complex risks can help accelerate technologies to reach scale.

There will be a need for integration of emerging and commercial green technologies into existing assets and projects, awareness of new risks will be important to understand.

Case study: The SMI Insurance Task Force are convening the Asset Managers and Asset Owners, and Banking Task Forces to help provide clarity across the financial services task forces on their distinct enabling roles, with a view to identifying specific problems that require a joined-up approach to shape end-to-end financing solutions that can accelerate progress across critical transition activities.

Key (re)insurance market action(s)

Developing an understanding of the growth projections and risks associated with new green technology, and building sufficient engineering, data and analytical capabilities will be key for (re)insurers entering these markets.

The industry could look to provide multiline solutions to ensure that coverage gaps that might limit technology growth are minimised

For example, as CCUS scales there will be a need for sophisticated insurance products that provide protection from CO2 leakage risks during the operational phase (e.g. third party liability risk and indemnity insurance cover from CO2 release). IP solution products already in the market can also be repurposed to support new IP-rich green technology companies.

Partnership across the insurance industry will be critical, for example developing structured solutions or consortia. Such structures can provide capacity to smaller projects which in isolation may not find their way to underwriting hubs with technical expertise.

An understanding of the interoperability of new technologies with existing renewable projects will be important to ensure new risks are appropriately understood. For example, the integration of storage/batteries into offshore wind projects and commercial buildings could increase BI due to the risk of fire.

Developing an end-to-end approach for financing crucial transition and climate innovation activities is critical

Insurance is a key enabler as well as capital source in financing the transition. Crucially, insurance can be used to make climate positive projects investment grade – the innovative nature of new green solutions often leads to higher risk for investors and lenders, due to higher uncertainty and difficulties in assessment. Insurance can be leveraged to mitigate the risks and bring projects within the risk tolerance boundaries of other financial institutions. (Re)insurers also have a large asset base to act as investors themselves.

Implications and actions for the (re)insurance industry

Market theme: Oil and gas companies, and other companies operating in high-emitting industries may face high pressure to transition as the Ukraine conflict creates a greater focus on the climate transition

Key (re)insurance market implications

(Re)insurers have a key role to play to help large energy companies transition, particularly given the impact on energy supply from the Ukraine conflict

(Re)insurers can help firms with robust transition plans secure coverage that they may ordinarily find difficult to secure, helping to maintain short term energy supply, whilst also supporting the climate transition.

By doing this, (re)insurers can support energy security whilst also enabling an orderly, but urgent transition

This must be a transition that supports customers as they shift to low-carbon models, but also recognises the urgency of climate change and avoids becoming a 'market of last resort' for those without sustainable transition plans.

Key (re)insurance market action(s)

Structured solutions or consortia can provide cover for transitioning businesses

Climate-related structured solutions can combine risks from multiple sources into pools that together meet ESG benchmarks such as emissions intensity and/or temperature alignment. This can help ensure cover is available for emission-intensive sectors with a credible transition plan, and where the risk appetite to provide the equivalent capacity for low-carbon solutions does not exist.

Lloyd's supports a sustainable underwriting approach that continues to support harder-to-abate sectors who have a credible climate transition plan in place, which can be measured and tracked over the years ahead

An engagement approach, over stark exclusions, can help (re)insurers leverage their influence as a capital provider or provider of risk transfer products to encourage companies to take solid decarbonisation actions.

Implications and actions for the (re)insurance industry

Market theme: Supply chain disruption combined with rising prices have impacted electric vehicle (EV) production, which may depress EV uptake and prevent overall climate goals being achieved

Key (re)insurance market implications

Businesses operating in the EV manufacturing sector will want to de-risk the EV supply chain

The sector can expect an increased need for supply chain and trade disruption solutions, as well as BI/CBI cover as access to key manufacturing components, such as nickel of which Russia is a key producer, become disrupted. EV manufacturers will require broad insurance protection as they look to source materials from alternative locations.

Key (re)insurance market action(s)

Innovative value-add insurance solutions can help to incentivise the switch to EVs

This may include the introduction of benefits to EV policyholders, such as the provision of policies for commercial fleets switching to EVs or the provision of reduced cost charging stations at home for private EV policy holders. Developing partnerships through the supply chain will help deliver such value-added incentives.

Case study: The Drive Electric scheme by Bâloise is a good example of innovation, using strategic partnerships to provide several value-add services to businesses helping to make the switch to electric easier. This includes incentives such as assisting the setup of a home-charging station, a card providing access to 180,000 recharging stations across Europe, and an app that lets a user see all the charging stations on their route.

Case study – Green Hydrogen: Green hydrogen is a key enabling technology for sectors such as shipping and aviation, and industrial processes, such as steel production. Whilst green hydrogen is typically more expensive when compared to grey and blue hydrogen, the rising cost of natural gas following the conflict – the feedstock used for grey and blue hydrogen – has reduced the differential and in some regions, such as parts of Europe and the Middle East and Africa, green hydrogen is now cheaper then grey[12]. However, green hydrogen projects remain small, and investment is needed to increase electrolyser scale, develop infrastructure, and further improve efficiency. Costs still need to reduce further, and the risks of large-scale projects remain relatively unknown and as such, investors may be reluctant to back large, gigawatt scale projects.

(Re)insurers can support this nascent sector through the development of risk transfer products that can insure existing risks across the value chain, as well as anticipate the risks that will arise from future large-scale construction and operation projects. (Re)insurers in the market will need to develop their in-house knowledge and understanding of the risks across the green hydrogen value chain, with heavy industry and engineering experience critical, along with the need to ensure a flexible approach to coverage and pricing, backed by strong data and analytics capability. The Lloyd's market is already providing specialist cover for safety risks associated with the transportation of hydrogen, but demand from customers may increase significantly over the coming years. Lloyd's Futureset is leading research into the specific risks posed by hydrogen to help corporates and investors understand the risks and potential coverage needs. Futureset has also run an educational session on hydrogen as part our 'Risk revealed' series, in collaboration with bp.

[12] Bloomberg New Energy Finance (BNEF) 2022, Ukraine Conflict Makes Green Hydrogen Competitive

Energy security

The Ukraine conflict has highlighted the reliance of European nations on energy imports from Russia, with almost 40% of natural gas consumed in the European Union originating there[13].

The surge in oil and gas prices following Russia's invasion of Ukraine has led to soaring inflation rates and prompted significant monetary, fiscal and policy action by governments and central banks to ensure that businesses and consumers are protected during this period of volatility.

Over the coming months, European nations, amongst others, will be urgently diversifying their energy mix away from Russian oil and gas to strengthen their energy security and protect their economies from the challenges associated with energy supply issues and escalating prices. Whilst there may be short-term pressure on climate transition efforts as countries look to replace Russian energy, in many regions the desire for greater independence from fossil fuels has been strengthened by the crisis and may further accelerate decarbonisation initiatives. However, this cannot be achieved quickly and will require significant investment in infrastructure redesign and renewables.

> **“This will require significant investment in infrastructure redevelopment, with recent estimates suggesting European governments will spend €50bn[14] this winter on new and expanded fossil fuel infrastructure due to the conflict.**
>
> **Ember Climate for the Financial Times, 2022**

The situation has highlighted critical dependencies in many countries' energy systems. Therefore, alongside renewable energy, a mixed slate of energy sources and suppliers could be critical to a country's energy security, with a growing opportunity for Europe, the Middle East and Africa to supply Western nations as well as a large opportunity for the US shale market, and potentially even for historically embargoed countries such as Venezuela or Iran, depending on political appetite.

The insurance industry can support the development of energy independence and security, and the associated infrastructure required, through the provision of capacity and innovation where protection gaps exist.

[13] New Statesman, 2022
[14] Ember Climate for the Financial Times, 2022

Implications and actions for the (re)insurance industry

Market theme: A short-term jump in the use of traditional and high-emitting energy sectors, is possible as nations seek to replace Russian-sourced energy supplies

Key (re)insurance market implications

Re-commissioning of coal plants may lead to an increase in demand for traditional brown energy coverage in the short term

Capacity may be restricted as many (re)insurers will have coal restrictions and exclusions in place. For some this may involve blanket bans whilst for many the restrictions may relate to the proportion of the organisation's revenue generated by coal.

Even for those that don't have restrictions in place, supporting coal projects, and controversial oil and gas exploration (e.g. oil sands and arctic exploration) may create a negative reputational impact.

We may also see re-commissioning or extensions to the operational life of nuclear plants, an area where several barriers exist to limit insurance capacity expansion; largely stemming from the low frequency but high severity of claims, despite the strong safety and performance records of the nuclear industry.

Case study: Lloyd's Futureset recently sat down with Nuclear Risk Insurers (NRI) and EDF, Britain's biggest generator of zero carbon electricity to better understand how they are working across the sector to support the global energy transition to net zero. Watch the video here.

Key (re)insurance market action(s)

The global insurance industry has a unique opportunity to continue to support the nuclear industry

The Lloyd's market already provides significant capacity to nuclear risk specialists NRI (the British Nuclear Insurance Pool) and Northcourt (an independent MGA (Managing General Agent)).

Where demand comes from previously mothballed plants, or plants operating outside originally intended lifespans, (re)insurers will need to work closely with nuclear operators and engineers to understand the risk implications around the continued safety and performance of the plant.

Implications and actions for the (re)insurance industry

Market theme: Changes to the geographical energy supply landscape and associated infrastructure development are expected

Key (re)insurance market implications

Increased demand is expected in the midstream and downstream energy sectors

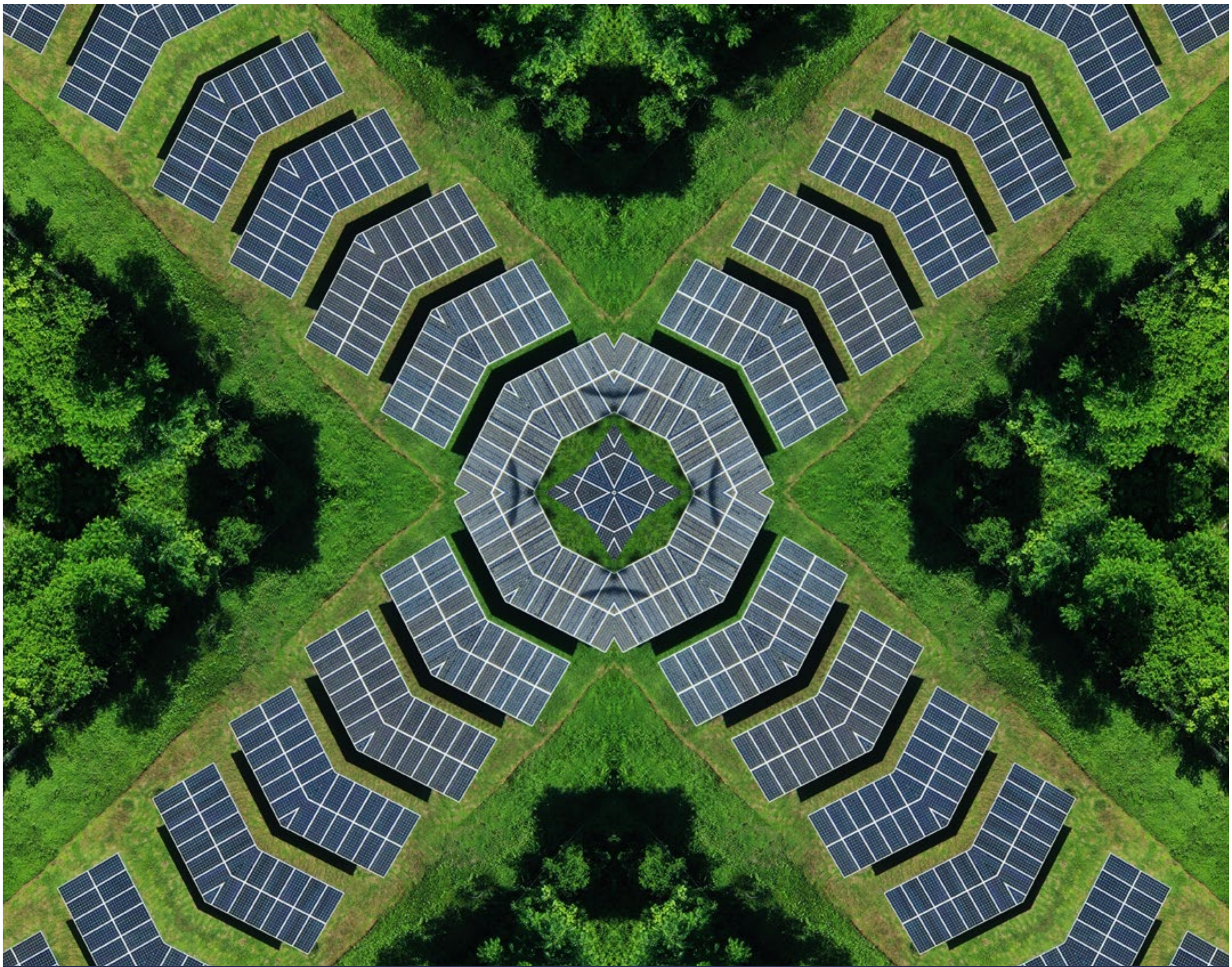
This is the case particularly for construction phase projects, to develop the infrastructure to support new supply routes. New supply routes may come from US shale, MENA, historically embargoed nations such as Venezuela and Iran, or Liquified Natural Gas (LNG) from areas such as the US, Qatar and the UAE or Australia.

The complex cryogenic equipment involved across the LNG supply chain may result in large insured exposures and therefore a cautious approach is often taken by (re)insurers.

Key (re)insurance market action(s)

Clients may seek increased capacity for LNG and other midstream/downstream markets, with BI/CBI capacity a key area of focus due to the disruption caused by demand shifts and insufficient infrastructure

Within the LNG market, (re)insurers will require a sophisticated underwriting approach and a thorough understanding of the track record of the build location, as well as understanding the Nat Cat risks for exposed projects e.g. in US or Australia.



Implications and actions for the (re)insurance industry

Market theme: There may be an increased demand for private - or even personal - renewable energy and storage solutions as companies seek energy independence in the face of the high energy prices resulting from the conflict

Key (re)insurance market implications

An increase in the number of smaller renewable energy farms and privately owned battery storage projects is likely to create growing demand for capacity from a new customer group, with farmers an important example

This would change the traditional energy insurance market from high value, low volume to high volume, low value.

Key (re)insurance market action(s)

Collaboration across the (re)insurance sector can help smaller risks get the specialist risk management support needed

Brokers and (re)insurers can help bring such smaller risks to the London market through structured solutions and delegated authorities, allowing customers to benefit from the market's specialist knowledge and risk transfer solutions.

The industry can also develop innovative solutions to support uptake of private solar energy

For example, through the inclusion of 'build back better' wordings in home insurance policies.

ESG and public sentiment

The conflict in Ukraine has highlighted the broader implications of ESG, with greater societal and stakeholder expectations of companies to reassess their partnerships and improve due-diligence checks on suppliers and third-party vendors for any potential ties to Russia.

The crisis has also created awareness of other geopolitical tensions, highlighting the emphasis on wider human rights violations for all investors. Importantly, most ESG funds do not generally have significant exposure to Russia – with only one sustainable emerging market fund having an exposure of more than 4.9%[15].

Western sentiment towards the conflict in Ukraine, to date, has been heavily pro-Ukrainian. Reputational issues and western sanctions imposed against Russia have triggered a mass exodus of firms operating in the country and a withdrawal of capital; as of August 2022, over 1,000 major companies and financial institutions had withdrawn capital from Russia in reaction to the conflict. If the crisis were to escalate, and the knock-on impacts on global economies to grow, there may be a greater need for governments to take steps to protect against domestic political unrest. Ukrainian refugees may require greater support, and countries could seek to strengthen their military investment if the conflict continues long term.

The conflict has heightened focus and created additional complexities around ESG and public sentiment, which may lead to increased demand for PV cover and litigation, reputation and crisis management products. There is also an opportunity for the sector to help communities impacted by the conflict recover and rebuild, for example by supporting humanitarian efforts.

[15] Morningstar research, 2022

Implications and actions for the (re)insurance industry

Market theme: Businesses are increasingly aware of the consequences of reputational damage and how it can quickly erode market value and trust with customers and stakeholders

Key (re)insurance market implications

Demand for products such as litigation, reputation and crisis management products are likely to increase

In addition to risk transfer products, businesses will seek support from the insurance industry to help monitor, measure, and manage their reputational risks. Business reputation has traditionally been difficult to assess and quantify due to the intangible nature of the risk.

Key (re)insurance market action(s)

The sector can continue to develop risk-transfer solutions to help organisations better mitigate reputational risk and continue to explore innovative risk management solutions

Proactive risk management solutions, such as benchmarking and media monitoring, can help organisations assess risk through the lens of corporate reputation rather than pure financial loss.

Further investment in data modelling capabilities may help accurately quantify reputational risk and help address business needs. For instance, insurers and brokers could extend their solutions to include sentiment analysis, which tracks the volume and type of sentiment published. Partnerships with specialist third parties could be explored where necessary to deliver this.

Insurers and brokers could help develop reputation risk scenarios for businesses and help them understand both the costs associated with the most significant scenarios and where risks can be transferred.

Case study: Aon uses a data-driven analytical framework to analyse reputational risk scenarios. The three-step approach involves scenario analysis, financial modelling, and stress-testing; these scenarios have been developed for businesses operating in more public-facing industries (e.g. food, agribusiness and beverage or life sciences).

Case study: Beazley has developed a bespoke Reputational Risk product for consumer facing companies and leads the Custodian Consortium at Lloyd's with support from other members of Lloyd's Product Launchpad. Its all-risks product indemnifies companies for loss of profits in the event of a reputational crisis with crisis consultancy also offered as part of its proposition. A key distinction is that the firm uses AI (Artificial Intelligence) and machine-learning to generate information about emerging reputational threats for organisations in real-time, with the ability for them to access this information via an online portal. Beazley has partnered with Polecat Intelligence to offer these capabilities.

Implications and actions for the (re)insurance industry

Market theme: The conflict has exacerbated ESG complexities, particularly in relation to the energy sector, and has the potential to lead to changes in public sentiment

Key (re)insurance market implications

The conflict has blurred the lines between the separate "E", "S" and "G" considerations. For example, a balance may need to be struck between the support of fossil fuel industries to provide energy security (the "S"), with the long-term need to foster an effective climate transition (the "E").

There is the possibility that the growing cost-of-living crisis may influence changes in public sentiment towards support for Ukraine, as domestic pressures mount.

Complexities may also arise from a push for accelerated renewable energy. The insurance industry can help to avoid unintended social and environmental consequences. For example, batteries require cobalt and lithium, both rare earth metals that, if not extracted sustainably, can cause large biodiversity losses and violations to human rights.

Key (re)insurance market action(s)

With ESG and public sentiment issues more complex than ever, clients may seek supply chain risk management services and products to support them in understanding the risks, alongside the provision of reputational damage solutions. This may include civil liability policies, particularly as ESG regulation increase.

(Re)insurers can also take a comprehensive approach to their ESG strategy, rather than considering "E", "S" and "G" as separate components. Ensuring a best-in-class ESG due-diligence strategy can avoid unintended consequences, such as the potential biodiversity or human rights issues resulting from renewable energy projects.

Implications and actions for the (re)insurance industry

Market theme: Risk of further social unrest as the economic challenges intensify, particularly in developing nations

Key (re)insurance market implications

Businesses may seek greater protection to continue operations in the face of growing unrest, or to reduce the potential financial impact. Food shortages, energy supply issues and the general cost of living crisis, may all contribute to this risk, particularly in developing nations that are highly reliant on imports from Ukraine for sustenance.

Key (re)insurance market action(s)

The conflict may result in greater need for clear, standalone PR/PV cover which can enable companies to exit from deteriorating regional situations. A key protection gap exists within PR and PV for SMEs with international presences, representing an opportunity for the insurance sector to support smaller companies with the challenges from the conflict.

Implications and actions for the (re)insurance industry

Market theme: Opportunities exist to show support to Ukrainian refugees and the nation's recovery effort

Key (re)insurance market implications

The (re)insurance sector has a central role to play in helping society build resilience and confidence, given its influence over the overall economy

The industry can play a vital role to help rebuild infrastructure and supply chains in Ukraine in the event of a de-escalation. This can not only help the nation recover as quickly as possible but can also benefit the redevelopment of many global supply chains that had felt the ramifications of the conflict. Extending support during humanitarian crises can further help build trust of the public in the (re)insurance sector.

Countries which have welcomed an influx of refugees may see an increase in housing/infrastructure projects

For instance, the influx of refugees in Germany in 2015 boosted the German construction sector further[16], and the Netherlands has also experienced greater demand[17] for new housing projects to accommodate refugees. There may be a corresponding increase in demand for insurance coverage in these regions during the construction phase whilst housing is being built, and during the operational phases.

Key (re)insurance market action(s)

(Re)insurers are well placed to help governments and companies re-build damaged property in Ukraine, such as private residential, commercial, governmental property and energy infrastructure

Humanitarian or public sector partnerships likely to be key, where the industry can deploy its advisory services to support governments and companies to rebuild with resilience in mind, ensuring supply chains are future proof.

The (re)insurance sector can continue providing support to Ukrainian citizens in the form of well-designed cover to support refugee housing projects

Poland, Slovakia, and Hungary have so far welcomed over half of all Ukrainian refugees. Specific propositions from the insurance industry to support commercial housing projects to further accommodate Ukrainian refugees (e.g. a packaged product for smaller construction projects with broad T&Cs) would be well received.

Case study: Allianz's humanitarian response includes offering free insurance coverage to Ukrainian refugees and their helpers (e.g. property and car insurance) in addition to donating EUR 10mn in humanitarian aid.

[16] Reuters, 2015
[17] European Commission, 2015

Progress to date

The (re)insurance industry has already begun reacting to the conflict and the challenges as they unfold, with a number of solutions already in place to respond to emerging customer needs, yet it is also clear that the implications for the industry are vast, with several areas where additional action is needed.

The seven market forces analysed within this report are at different stages in their response to addressing the challenges faced, with some areas requiring a greater call to action than others.

The diagram to the right summarises our view of the progress to date in each of the market forces, grouping them into those that are well progressed, gaining momentum or are more immature. Whilst there are additional opportunities to support businesses within each of the market forces, supply chain and public sentiment will likely require the most attention.

Current (re)insurance industry progress in responding to the market force challenges arising from the conflict

Immature

Supply chain

The market for supply chain insurance remains relatively nascent. Risk transfer and advisory solutions extending to Tier 2 and 3 suppliers could be valued by customers

ESG & public sentiment

Reputational damage, political violence and crisis management remain areas where businesses are likely seek greater protection

Gaining momentum

Cyber

Work has already begun to adapt existing cyber offerings to suit customers' needs arising from the conflict. Physical damage, contingent business interruption and standalone war solutions are examples where the industry could take further action

Climate transition

The (re)insurance industry has a key role to play in enabling and financing the transition to a low-carbon future. Further action can help accelerate progress across critical transition activities, particularly the adoption of new green technologies

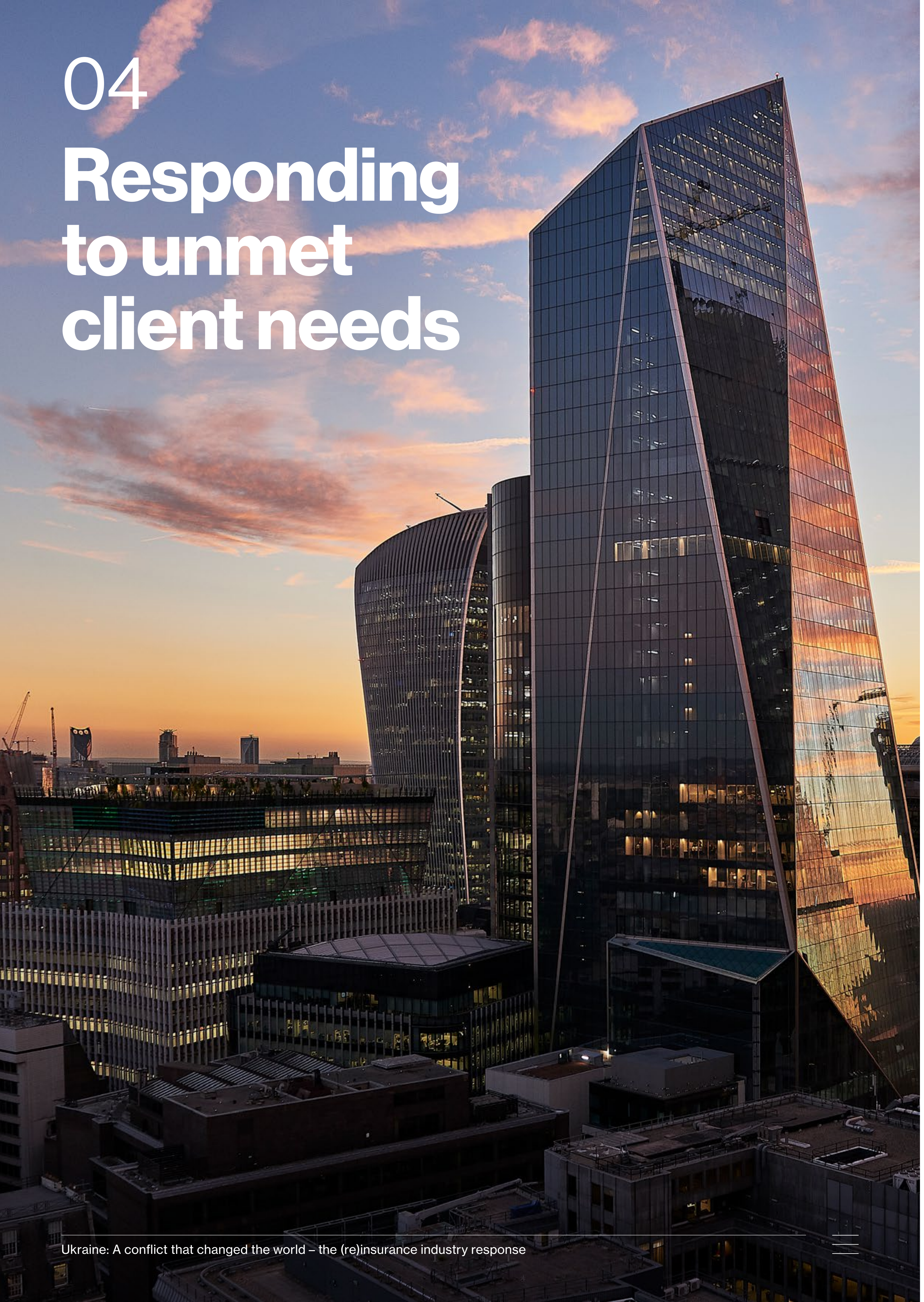
Food security

Critical progress has been made to limit the challenges around Ukrainian grain exports. There is the potential for further action around wider global implications, such as products to help scale up domestic production

Well progressed

Energy security

Solutions are largely mature, with shifts in demand and the deployment of capital the key areas of focus for the (re) insurance industry



04 Responding to unmet client needs

The (re)insurance industry has a vital role to play in building societal and economic resilience, with access to a formidable toolkit that can tackle challenges across industries and address protection gaps:

01 Capital: Bringing capital to bear

The (re)insurance industry can help to build long-term resilience by deploying its capital to remove risks from customers' balance sheets and reduce their exposure to volatile risks.

02 Solutions: Addressing emerging needs

Innovation in the sector will be essential to helping to address the complex challenges that will emerge from the crisis. The (re)insurance industry has an opportunity to develop new products and new ways of sharing risk to help businesses navigate what will be an uncertain landscape for some time to come.

03 Risk advisory: Becoming a true risk partner

The industry can deploy its deep risk expertise by providing advice on risk mitigation and management to ensure that customers are prepared for a range of outcomes.

04 Collaboration: Key to unlocking action and driving change

Insurance is a key enabler of financial resilience, and cross-sector partnerships can accelerate the development and delivery of the novel solutions that will be necessary.

1. Untapped capital

Bringing industry resources to bear

The insurance industry's global pool of more than $30 trillion of capital is critical to building global resilience. These resources can be directed to the areas most challenged by the conflict, whether to Ukraine and surrounding markets directly or by loosening capacity constraints intensified by the conflict. Pooling capacity provides an effective way for the (re)insurance industry to offset the volatility and large exposures inherent in geopolitical risk.

Underwriting hubs such as London provide a gateway for the deployment of capital and development of more efficient placement mechanisms through structured solutions. However, investment in enhanced risk modelling and data and analytics capabilities is crucial to provide (re)insurers with the confidence to deploy capacity.

Application for key business challenges

Cyber	Supply chain	Food security	Climate transition	Energy security	ESG	Public sentiment
High	High	High	High	Moderate	Low	Moderate

The opportunity for action

Sharing risk

The London market's syndication model provides the ideal platform to develop, implement and share risk for innovative solutions that need access to capital to help address protection gaps. For example, targeted use of structured solutions in areas where underwriting data is still limited such as small renewable energy projects for farmers and local housing developments, emerging green technologies such as hydrogen or utility scale battery storage

Investing in data and modelling to allow investors to confidently deploy their capital

Working closely with businesses, data providers and experts to optimise risk models and data, such as around supply chain exposure, reputational risk and cyber can offer investors greater confidence when underwriting emerging risks where limited experience data is available. For example, AI and machine learning can be used to provide real-time insights to businesses on emerging reputational threats.

Supporting companies with credible transition plans

The insurance industry can support the energy transition and protect energy security through the creation of structured solutions for 'brown risks' from companies with credible transition plans, as well as supporting the establishment of captives and the provision of associated reinsurance cover.

Taking action at Lloyd's

Mobilising capital: Mobilising capital can help rebuild social and economic resilience and Lloyd's is committed to providing an efficient route for institutional investors to support the growth and diversity of risks written in the market. Lloyd's has established two Protected Cell Companies (PCCs), London Bridge Risk and London Bridge 2, that provide an access point for qualifying institutional investors to deploy funds in a tax transparent way into the Lloyd's market.

Sharing risk: In July, Lloyd's insurer Ascot launched a new facility offering vessels transporting grain and other designated food products from Ukrainian ports reliable and readily available insurance protection. Backed by over 15 underwriting entities, the facility highlights the crucial role of (re)insurance to navigate the effects of the conflict in Ukraine.

2. Innovative solutions

Addressing customers' emerging needs

Businesses are more aware than ever of growing threats such as physical damage from cyber-attacks and supply chain disruption and will increasingly look to the insurance industry to help transfer risk where possible. Existing products may need to be refined to reflect evolving business needs and emerging technologies, which will require carriers to deepen their technical understanding. Moreover, standalone solutions could be developed to address growing coverage gaps and fulfil business needs.

Application for key business challenges

Cyber	Supply chain	Food security	Climate transition	Energy security	ESG	Public sentiment
High	High	High	High	Low	Moderate	High

The opportunity for action

Focused development of new solutions[18]

We can act to focus innovation on the segments of the market most impacted by the ongoing conflict, both augmenting existing solutions and breaking boundaries in new areas, for example:

- Addressing specific needs of organisations in response to the conflict such as the availability of cyber war cover and comprehensive supply chain de-risking
- Exploring how parametric solutions can support a wide array of challenges such as food production in drought exposed regions, commodity price fluctuations, shipping supply chain resilience as well as aid humanitarian efforts
- Repurposing IP (Intellectual Property) solution products for IP-rich green technology companies
- Exploring the opportunity for non-financial forms of coverage, for example crisis management support or the provision of replacement goods

[18] N.B. the proposed innovation ideas identified in this report should be reviewed from a legal and regulatory perspective as part of the product development process.

Marketplace collaboration

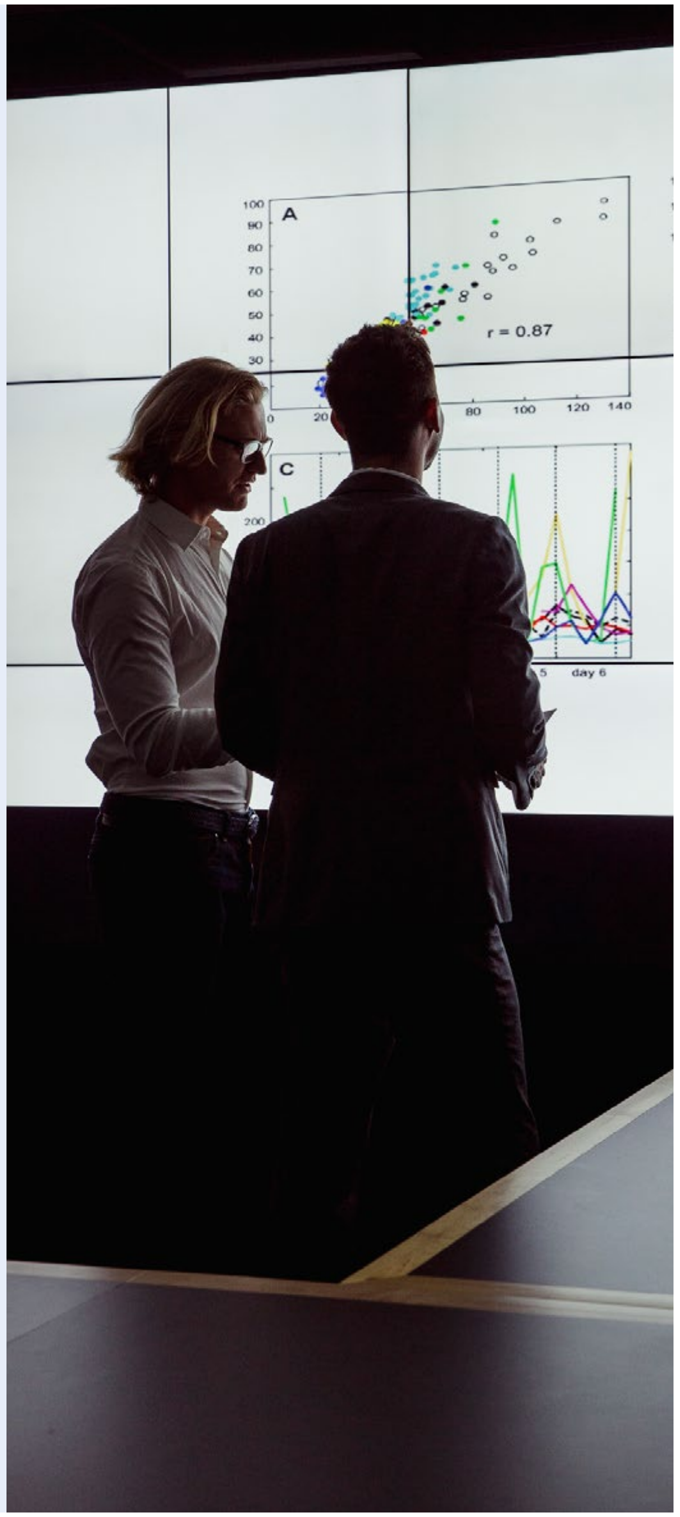
Partnership between (re)insurers and brokers, as well as across marketplaces such as Lloyd's, can create conditions under which new solutions can be taken rapidly from ideation to commercialisation.

Taking action at Lloyd's

Product innovation: Lloyd's is committed to supporting innovation across the market and has set up a number of facilities to ensure that the market has the space needed to innovate or commit capacity to new ventures, including:

- **Lloyd's Lab:** an award-winning space dedicated to accelerating and fostering new products and solutions fit for the needs of our customers around the world
- **Lloyd's Product Launchpad:** providing £150m of capacity, the Lloyd's Product Launchpad is committed to providing a safe space for underwriters to experiment with new ideas in a controlled way, which balances the need for appropriate oversight with the risk of not innovating fast enough
- **Innovation class of business GWP targets:** allowing syndicates to commit an additional 2% of their Gross Written Premium (GWP) from their business-as-usual plan to a dedicated innovation class of business

Action leadership: Lloyd's Futureset can help to strengthen the sector's technical understanding of risks emerging from the crisis through leading research and action leadership. Ongoing examples of work include studying the specific risks posed by hydrogen to help corporates and investors understand the risks and potential coverage needs.



3. Expert advice

Becoming a true risk partner for customers

Businesses require more support than ever to navigate an increasingly volatile risk landscape. This provides opportunities for the industry to offer greater value to clients through proactive risk management advice and capture an estimated $2bn market for value-added services in commercial lines insurance[19]. (Re)insurers can build long-term relationships with customers based on a detailed understanding of their risk profile and needs, which should translate into improved loss performance.

Additional investment in building core capabilities in pre- and post-loss services can build a holistic value proposition which can elevate the relationship between client and insurer. Further investment in modelling capabilities will be required to support the better quantification of risk and the impact of natural catastrophe events for more nascent risks. Partnerships with brokers and third parties may be required to deliver these service offerings.

Application for key business challenges

Cyber	Supply chain	Food security	Climate transition	Energy security	ESG	Public sentiment
Moderate	High	High	High	Low	Low	High

[19] McKinsey, The hidden benefits of value-added services in commercial lines insurance, 2019

The opportunity for action

Understand the customer need

Organisations are bringing their expectations of customer experience from other industries, like banking, to their insurers and brokers. They increasingly demand solutions and support that are bespoke to their needs. Across the insurance value chain, the aim should be to build a comprehensive view of the customer. This could require a culture change across the business – from sales through to claims – to provide the flexibility and agility to deliver value added services that customers truly want and need.

Invest in technology, data and analytics to deliver valued services

The use of big data and AI can increasingly help insurers and brokers provide compelling solutions across many services, including risk mitigation, risk assessment and claims. Insurers and brokers are already making great strides in these areas, including Beazley's Reputational Risk product, which leverages AI and machine-learning to generate real-time insights on emerging reputational threats. However there are further opportunities for the industry to respond to changing customer needs, for example geospatial supply chain health checks could be further offered as part of a risk advisory proposition, or NatCat early warning systems could be further used to model the effect of droughts on already impacted food supply chains.

Crisis response

The conflict in Ukraine has highlighted the broad reach of crisis events, and businesses are now more aware that a professional approach to crisis response is required to limit future risks. The insurance industry is well placed to support clients in the event of a future crisis through supply chain advice, legal and public relations support.

In addition, the industry could explore the potential for new non-financial based indemnity solutions, for example, helping to source alternative raw materials where supply chains have been disrupted or providing replacement carbon credits where previously purchased offsets have not delivered as promised.

4. Collaborative action

Casting the net wide to innovate for customers

In many areas the value chain of the insurance industry promotes a highly collaborative environment. However, the sheer number of players within the value chain can create barriers at times, due to interdependencies through the value chain. As such, the insurance industry can look beyond these obstacles and use this an opportunity to drive collaboration and innovation across the sector.

Application for key business challenges

Cyber	Supply chain	Food security	Climate transition	Energy security	ESG	Public sentiment
Low	Moderate	High	High	Moderate	Low	Low

The opportunity for action

Involve customers throughout the innovation process

Engagement with customers is often limited to the product prototyping stage. A piloting stage could be used more powerfully if the needs and views of prospective customers are factored into insurance product design at the outset. This also applies to customers: involving insurers early during the development of new emerging technologies means they will be better placed to understand the potential risks and controls in place to manage them.

Build a broad platform to capture, select and implement innovations

(Re)insurers and brokers that have an innovation platform have been shown to consistently produce a wider range of new products. Innovation performance could be enhanced through the introduction of permanent innovation platforms to help capture, select and manage innovation. Lloyd's Lab is a good example of such a platform, dedicated to fostering and accelerating innovation by bringing together InsurTechs, start-ups and ideas.

Innovation and collaboration must be 'resourced for success'

There is contrast between a commitment to resource innovations while only committing resources after an innovation has been developed by an employee "at the side of the desk". The insurance industry could work to ensure that employees are given sufficient time away from their day jobs to develop the innovation when it is in its infancy. Innovation also requires a long-term attitude, in contrast to the one year horizon of a P&L. A long-term approach can help to reduce barriers that act to create inflexible and static business models.

Collaboration with governments

Full potential of the insurance industry's support for the real economy also relies on a conducive, agile and open regulatory regime and the industry stands ready to co-operate with governments and relevant authorities to facilitate this approach. This includes, for example, insurance for new technologies supporting green transition and utilisation of data to develop innovative risk mitigation and transfer solutions.

Taking action at Lloyd's

Convening the industry: Lloyd's has brought together leaders from a number of the largest and most influential global insurance firms to form an Insurance Task Force (ITF) as part of the Sustainable Markets Initiative. The task force will drive progress as a group and accelerate the pace of industry transitions towards a more resilient and sustainable future, putting 'Nature, People, Planet' at the heart of global value creation.

Leading our market: We have committed to work with managing agents on their own ESG plans to achieve an overall net zero underwriting position for our market by 2050. To support this, 2021 saw us issue comprehensive market guidance, covering both underwriters and investment to help managing agents in forming these plans.

Sharing risk: The Disaster Risk Facility at Lloyd's was formed to look at closing insurance gaps around the world through development and provision of contingent risk financing solutions to mitigate the human and financial impacts of natural hazards and other catastrophic risks. Seven Lloyd's syndicates have joined forces to develop new solutions alongside governments, municipalities, and non-governmental organisations. Their aim is to help developing economies tackle underinsurance and improve their resilience against the economic impact of natural catastrophes.

05

Conclusion – converting insight to action

Having assessed the impacts of the conflict on global businesses in our first report; this second report focuses on both the varied implications for the insurance industry, and the compelling impetus for further action as an industry that addresses customers' short-term critical needs as well as equally important long-term objectives.

Across the seven market forces analysed, four consistent themes emerge. The first is the need to develop and strengthen the existing products most likely to see increased demand in the wake of the conflict. This includes business interruption products to help customers respond to shifts in energy demand and infrastructure; political violence coverage to account for social unrest and food insecurity in politically volatile regions; and reputational risk solutions for businesses seeking to respond to shifting ESG priorities. Of the challenges that customers are facing, protecting against supply chain and public sentiment risks will likely require the most work: in general terms, current supply chain insurance products typically neglect Tier 2 and 3 suppliers, while cover for reputational damage remains broadly immature. Here, the industry must play a proactive role in helping customers understand both their exposure and their coverage to ensure the right solutions are put in place.

Secondly, the report highlights the need for rapid innovation to provide cover for new and emerging risks. While impossible to know exactly what issues will emerge, early examples include the growth of technology and infrastructure to support the increased demand for renewable energy; the threat to physical assets from the recent rise in cyber-attacks; and supporting products to ensure the safe shipment and settlement of perishable products from Ukraine and surrounding regions. Again, a customer-focused approach will be most effective in identifying both needs, solutions and innovations.

Third, the research reveals the need for investment in data, analytics and risk modelling to make insurance solutions cost effective and fit for the digital world. Robust data and modelling could improve (re)insurers' ability to anticipate a range of risks from cyber-attacks to reputational risks, making the industry better equipped to support customers as they respond to the conflict.

Finally, the potential benefits to (re)insurers of looking beyond their own borders are clear. Cross-industry partnerships have proved their worth in insuring a range of large risks from grain shipments to cyber physical attacks, and could prove valuable for as yet uninsurable risks surrounding the climate transition. Collaboration with government and humanitarian organisations opens doors to address food insecurity and help affected societies recover and rebuild; while close relationships with customers will be essential to building proactive resilience on everything from company reputation to cyber mitigation. The industry must therefore partner broadly across its networks to realise the benefits of collaboration in mitigating the conflict's many impacts.

In these efforts, the insurance sector must continue the work already started: mobilising its deep risk expertise to help businesses navigate the uncertainties of the conflict; facilitating the deployment of capital to the areas that need it most; and supporting innovation to cover the risks yet to be insured. To support this process Lloyd's and Aon will establish a new innovation forum that will help coordinate and accelerate the development of new solutions.

In practical terms the innovation forum will bring together senior leaders from both Lloyd's and Aon across a variety of key areas that have been highlighted in this report where protection gaps exist and new product development is required. The role of the innovation forum will be two-fold; firstly to act as a convenor for businesses, underwriters and brokers to come together and debate the recommendations from this report, and challenge each other to find additional ways to meet unmet needs. Secondly, the ideas developed within the innovation forum will be brought to life through the underwriting and product innovation expertise at Lloyd's through existing mechanisms including the Sustainable Markets Initiative and Lloyd's Lab. The initial focus of the innovation forum will be on three key topics where the Ukraine crisis has exacerbated the challenges facing businesses: energy, cyber and supply chain.

Beyond this initiative, the need to move quickly to help customers respond is evident. This research outlines the tangible steps insurance and reinsurance organisations can take to support society at this pivotal time; but it is only as effective as its application. The real work is in converting those insights into action.

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