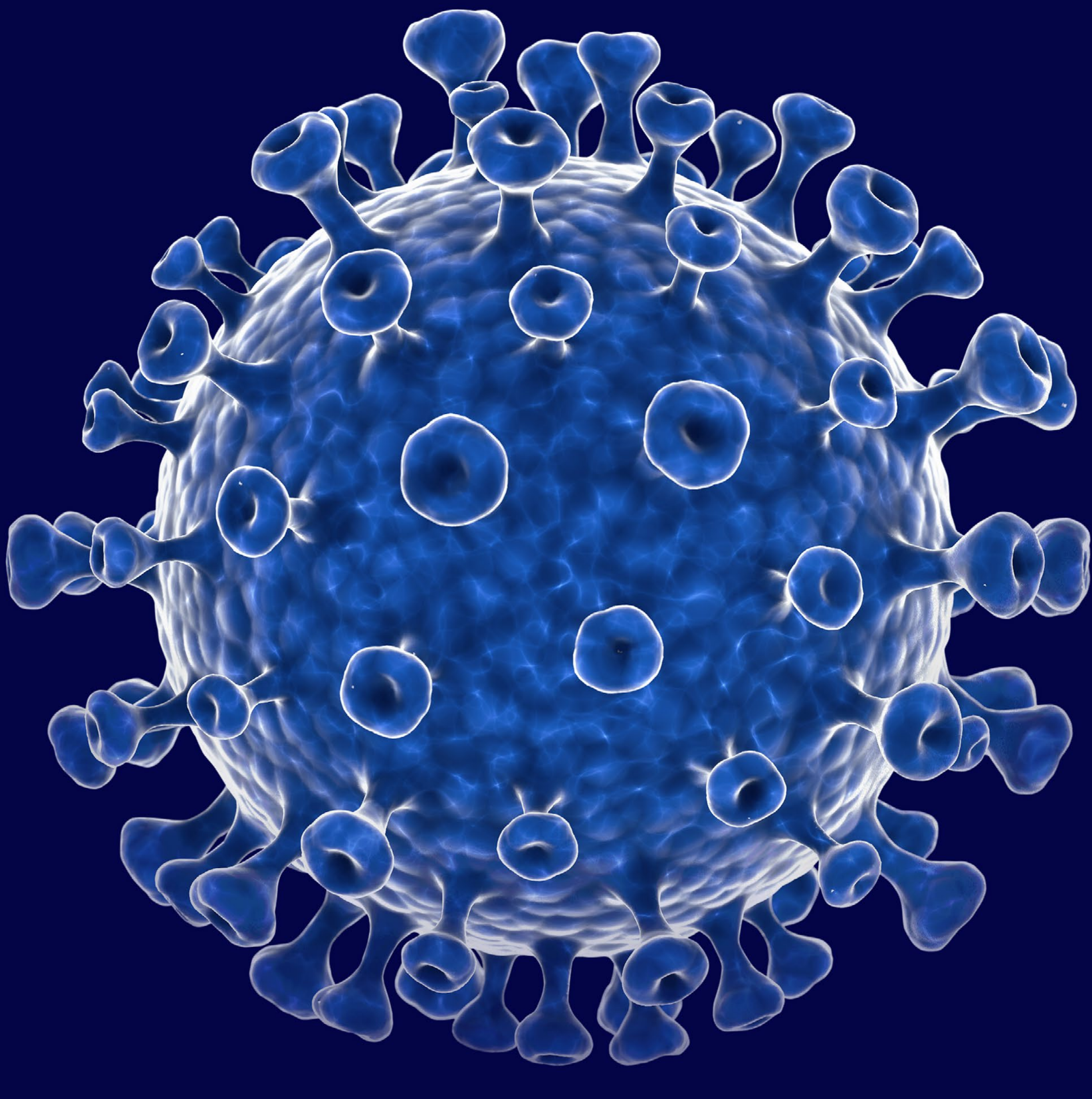
LLOYD'S

Supporting global recovery and resilience for customers and economies

The insurance industry response to COVID-19

Sharing risk to create a braver world



Contents

Foreword

COVID-19 has resulted in a humanitarian crisis on a scale the world was underprepared for.

Society has responded collectively, with businesses, charities, communities and governments working together to tackle the health crisis, provide financial support to workers and companies, and bolster economies.

The global insurance industry is playing its part by paying claims, donating funds to support business and society in general, and by offering flexible terms and conditions to help its customers in the immediate aftermath of the pandemic.

Now, as economies begin to return to normality, businesses need the support and protection insurance offers, so they can operate post lockdown with confidence.

As research carried out for this paper shows, customers are asking our industry for products that cover them for new or heightened risks they may encounter in the new normal, protection for a second wave of the pandemic and longer term protection from future systemic risks.

Some of these customer needs can be catered for using existing or modified products and services; others specifically impacted by COVID-19, such as business interruption and trade credit risk, require new approaches. The global insurance sector must work collaboratively and with customers to accelerate this work.

Designing cover for future systemic risks is more complex. As the COVID-19 pandemic has shown, their impacts are too wide-ranging for any one sector to carry the risks alone. Solutions are required nonetheless, because where no commercial insurance cover exists, systemic risks are borne by customers and ultimately, by governments and therefore the taxpayer. If the cover is implicit, the protection is uncertain and the risk is often poorly understood.

The way forward, therefore, requires close collaboration between insurers, brokers and customers, and between the global insurance industry and governments, to create new vehicles that combine insurance capital with sovereign capacity to enable protection against systemic risks.

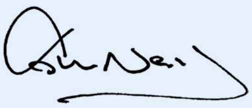
To accelerate this process, Lloyd's is proposing solutions that could provide protection for customers' short, medium and long-term needs. These include two potential frameworks that, if taken forward, could provide governments around the world with risk transfer models they could put in place immediately in partnership with the insurance industry.

Foreword

There is now an urgent need to develop these ideas further – alongside the many others under way in other parts of the world – so we can quickly provide customers with the protection they are asking us for and can play our part in strengthening society's resilience more broadly.

We often pride ourselves as a sector on our inherent social purpose – that is to help businesses and communities reduce the risks they face, enable them to recover quickly from disasters by paying claims, and to provide the security that allows them to innovate, develop and drive economic growth. COVID-19 has demonstrated is that there is much more we can do in this role and, on behalf of our customers, we should carry out this work as quickly as possible.

The pandemic has provided us with an opportunity to come together to share risk and create a braver, more resilient world – and we must seize it.



John Neal
CEO, Lloyd's

Bruce Carnegie-Brown
Chairman, Lloyd's

Global Advisory Committee

Oliver Bäte, CEO, Allianz
Andrew Brooks, CEO, Ascot
Thomas Buberl, CEO, Axa
Bruce Carnegie-Brown, (Chair), Chairman, Lloyd's
Greg Case, CEO, Aon
Brian Duppereault, CEO, AIG
Dan Glaser, President and CEO, Marsh & McLennan
Evan Greenberg, Chairman and CEO, Chubb
John Haley, CEO, Willis Towers Watson
Andrew Horton, CEO, Beazley
Bronek Masojada, CEO, Hiscox
John Neal, CEO, Lloyd's
Scott Purviance, CEO, Amwins

London Advisory Committee

Andrew Brooks, Chair, Lloyd's Market Association
Sheila Cameron, CEO, Lloyds Market Association
Bruce Carnegie-Brown, (Chair), Chairman, Lloyd's
Chris Croft, CEO, London and International Insurance Brokers Association
Richard Dudley, Chair, London and International Insurance Brokers Association
Andrew Horton, Chair, London Market Group
Julian Enoizi, CEO, Pool Re
Huw Evans, Director General, Association of British Insurers
Sian Fisher, CEO, Chartered Insurance Institute
Clare Lebecq, CEO, London Market Group
Steve McGill, CEO, McGill and Partners
Bronek Masojada, Chair, Placing Platform Limited
Dave Matcham, CEO, International Underwriting Association
John Neal, CEO, Lloyd's
Malcolm Newman, Chair, International Underwriting Association

Overview

This paper proposes several solutions that could offer customers greater protection against a future wave of the COVID-19 pandemic or against future systemic risks. The table below summarises their characteristics, as well as those of other initiatives being developed by the wider insurance industry.

	Description	Example initiatives underway or proposed
Current state	Systemic risk typically sits with individual customers with some protection offered by governments, paid for by taxpayers	– Government loans – Furlough schemes – Other social security initiatives
ReStart	Risk pooling between insurers to offer non-damage business interruption protection against future waves of COVID-19	– Potential commercial product developed by the Lloyd's market – Lloyd's open source framework
Recover Re	'After the event' insurance product, providing immediate cover for non-damage business interruption, including COVID-19, with premiums charged over the long term to recoup costs	– Lloyd's open source framework
Pandemic pools	Government-backed industry pools to protect customers from future pandemic non-damage business interruption risk (not in scope for this paper)	– French Government, CCR and industry working group – German GDV working group – UK Pandemic Re working group – US BCPP – US PRIA
Black Swan Re	Government-backed industry pool, reinsuring systemic risk from commercial non-damage business interruption cover	– Potential role of global reinsurance pools (e.g. expanding the scope of Pool Re in the UK) – Lloyd's open source framework
Other insurance solutions	Developing industry capability and accelerating new product development to protect customers more effectively against systemic risks	– Lloyd's Systemic Risk Centre of Excellence – Lloyd's Product Innovation Facility – Lloyd's Innovation Lab – Pandemic catastrophe bonds – Potential COVID-19 vaccine and distribution cover

Lloyd's also outlines additional ways in which the global insurance industry could respond to protect customers. Below we summarise our potential role in delivering these proposals in the short, medium and long term. For more details of the potential solutions in this paper, see the accompanying appendix, Open source frameworks for systemic risk.

Solutions	**Short term** Respond to immediate gaps in customer support	**Medium term** Develop systemic risk expertise and innovate for the changing risk landscape	**Long term** Develop structures to protect customers from future systemic risk
Lloyd's role	– Support Lloyd's market proposals to respond to the pandemic such as *ReStart*, as well as others that are being developed – Work with interested governments around the world to advise on immediate challenges and help develop short, medium and long-term solutions	– Develop a Centre of Excellence that would use data, models and human insight to understand and mitigate systemic risks better, and build capabilities to respond if they occur – Accelerate the pace of Lloyd's market innovation by increasing capacity to carry it out and by working with Lloyd's Product Innovation Facility to develop new products	– Support and align with governments and industry bodies keen to take forward ideas such as *Recover Re* and *Black Swan Re* *Note: while these are long-term solutions, work should begin on these structures in 2020*

1. The global impacts of COVID-19

1. The global impacts of COVID-19

The devastating human loss and economic impacts of the COVID-19 pandemic is a global catastrophe that is stretching society's capacity and resources to cope.

Governments are borrowing trillions of dollars to prevent further loss of life, support faltering economies and respond to critical societal needs. Millions of people and countless businesses – from global conglomerates to small and medium-sized enterprises (SMEs) – are facing the most serious threat many have ever faced.

The insurance sector is paying out claims estimated at $107bn to customers, while also seeing the value of its global assets drop by $96bn, together making it the industry's largest ever loss [1].

The magnitude of the pandemic's financial and social impacts has exposed the shortcomings of society's preparedness for, and resilience to, systemic risks of this scale and nature, including the ability of some risk transfer products and structures to provide protection.

Global insurance market impact

A Lloyd's economic study into the impact of COVID-19 estimated both underwriting losses and a reduction in the value of investments which insurance companies hold in order to meet future claims.

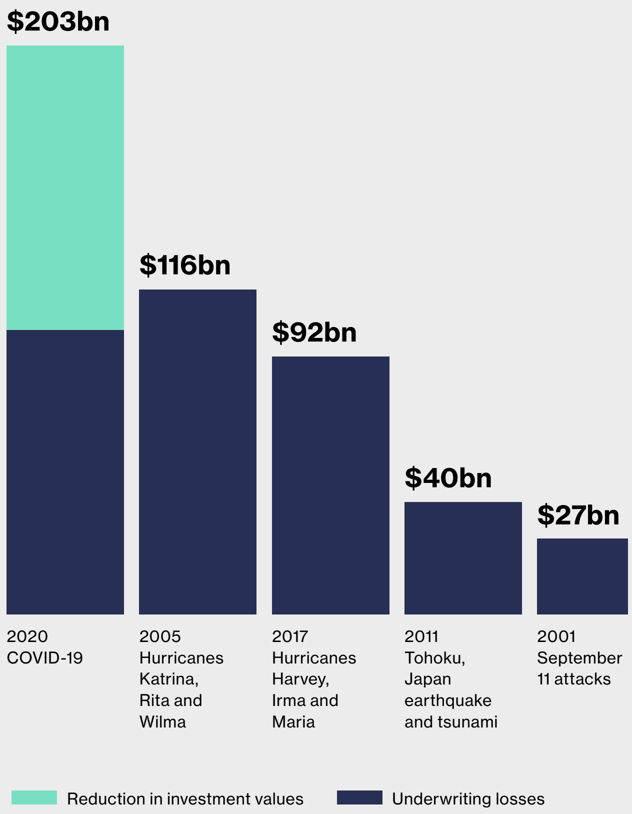


Figure 1

1. The global impacts of COVID-19

Global (re)insurance industry response to COVID-19 [2]

The global insurance and reinsurance industry is responding to customers' immediate needs, both unilaterally and in partnership with governments and third parties, by committing funding and resources to support and accelerate economic recovery. Brokers and other advisory firms are working with customers to understand their changing needs better and help them recover from their losses. Examples include:

Discretionary or charitable payments to support society

- Insurers in France have established a $220m solidarity fund to support the Government bailout of SMEs
- The UK's biggest insurers have established the £100m COVID-19 Support Fund
- In many Asian countries, such as China, Sri Lanka and the Philippines, the sector is providing medical supplies, personal protective equipment and financial support to healthcare professionals

Direct customer support

- There are many examples of insurers around the world deferring premiums and accepting payment in instalments
- Other initiatives include insurers in North America and the UK returning motor premiums in recognition of the significant reduction in the use of policyholders' vehicles
- A German insurance collective is making discretionary payments of 15% of the daily losses of policyholders not covered by business interruption

Adapting and creating new products to respond to customers' changing needs

- One insurer in the UK has partnered with a tech start-up to launch a telematics app for vehicle fleets that are providing essential services during the crisis
- 68 Chinese insurers have introduced return-to-work products since the start of the outbreak, mainly providing coverage for employers' liability in the event of illness and business interruption caused by shutdowns
- One broker's financial impact model helps employers estimate the impact of COVID-19 according to the number of employees that become infected

The challenge of providing protection for systemic risks

Systemic risks such as pandemics that cause large economic and societal losses are unlikely to be covered in their entirety by the global insurance industry as the total economic loss would exceed its financial resources. Where cover is available, premiums can be significant for what many customers have previously regarded as remote threats.

The threat is less remote now, and one likely consequence of COVID-19 is customers will increasingly seek cover for both future pandemics as well as other systemic threats (see Figure 2).

This means the insurance industry must develop new products and structures in those areas where protection gaps exist today to support business recovery over the short-term post lockdown, and provide greater resilience over the medium to longer term.

The nature of systemic catastrophic events

Systemic catastrophic events are the most difficult to quantify, understand and protect against. They can be global in impact, often hitting multiple industries, countries and billions of people simultaneously, with potentially devastating consequences.

Their impact requires resources that can only be accessed by governments, with response and recovery requiring international and cross-industry collaboration. The aftershocks from these events mean the human and economic impacts can take years or even decades to fully recover from.

Natural hazards

- Space weather
- Impact of accelerated climate change

Major public health emergencies

- Pandemics
- Animal disease

Widespread telecommunications or utilities failure

- Widespread electricity failure
- Widespread transport disruption
- Widespread industrial disruption
- Critical resources supply chain failure
- Utilities failure (including internet)
- Widespread cyber attack

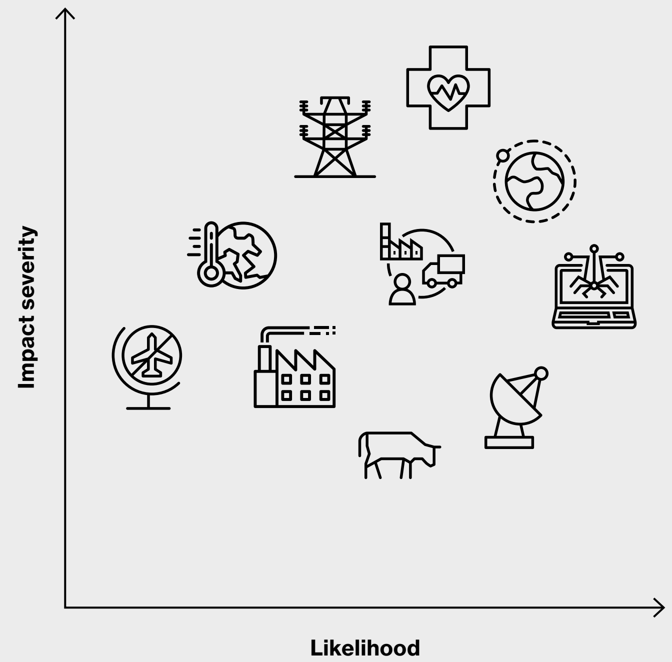


Figure 2: Illustrative national systemic risk register

1. The global impacts of COVID-19

The customer view

To identify exactly what customers' priorities are, Lloyd's interviewed executives and experts across key global industries including travel and hospitality, healthcare and pharmaceuticals, retail, automotive, supply chain and transportation, energy, and construction.

The research found some customer attitudes to insurance had deteriorated, with the perception that some business interruption policies have not performed as expected. Some companies said they were increasing the amount of risk they self-insure through captives; others said they were taking the first steps in this direction.

It also identified specific needs, with customers asking for the following:

In the short-term:
- Ensure business resilience to a second wave of the pandemic
- Safeguard employees as they return to work
- Provide a safe environment for customers as businesses reopen
- Provide clarity of insurance cover

In the medium term:
- More flexible insurance cover for a more volatile business environment
- Ways to increase the resilience of their global supply chains
- In-depth assessment and protection from cyber risk exposures
- Protection from digital economy liabilities

Over the long term:
- Risk prevention and mitigation support
- Advice on preparing for the next systemic risk

Insurers and brokers should therefore focus their development work in these areas to protect customers as they restart their businesses and start operating again, and to strengthen society's resilience more broadly.

1. The global impacts of COVID-19

The role of the insurance sector

Much of this work can be carried out by the global insurance industry itself, working collaboratively to design and develop new products, services and structures.

However, to overcome the challenges of offering protection for systemic risks at scale, it must also work with governments to combine insurance and reinsurance capital, as well as capital market resource, with sovereign funds to provide the necessary security and capacity to pay claims.

The insurance industry is ideally placed to lead and coordinate this work. First, because by ensuring price reflects risk, it can drive behaviours to mitigate the impact of events such as COVID-19 in the future. Second, its risk expertise, claims assessment and payment, and risk management can play a vital role in global recovery.

This Lloyd's paper sets out ways the industry can do this. It aims to stimulate innovation and accelerate development by proposing new solutions that could be developed and adopted by the global insurance industry to protect businesses and society in the short to medium term. It also sets out proposals for region-specific vehicles (See Figure 3) that could offer protection against systemic risks over the longer term.

Protection offered by Lloyd's proposals

The potential solutions in this paper include *ReStart* (pooled insurance capacity to protect customers against a second wave of COVID-19); *Recover Re* (a government-backed vehicle offering long term 'after the event' cover that could insure against COVID-19 as well as future pandemic risks); and *Black Swan Re* (a government-backed vehicle to insure against future systemic risks).

	Current COVID-19	Second wave COVID-19	Future pandemic	Future systemic risk
Recover Re	✓	✓	✓	?
ReStart		✓	?	
Black Swan Re			✓	✓

Figure 3: Systemic risk cover from proposed solutions

2. A pathway to recovery

2. A pathway to recovery

Covering customers' most material risks in the short term

As governments begin to ease restrictions on businesses and individuals, albeit to differing timetables, companies are taking tentative steps to begin operating again.

The return to work is fraught with complexity. Companies need to keep their employees and customers safe, both from the current virus and from any potential further waves. At the same time, they are facing restricted working conditions, falling demand and changing customer behaviours.

This is changing the type of risk protection they are looking for over the short, medium and long-term.

In the short-term, Lloyd's research found that customers are most concerned about:

- Ensuring business resilience to a second wave of the pandemic
- Safeguarding employees as they return to work
- Providing a safe environment for customers as businesses reopen
- Clarity of insurance cover

The insurance industry and governments both have important roles to play in facilitating this economic reboot. The industry can offer insight into the nature of the risks to which their customers are exposed, advising them on the steps they can take to mitigate them, and by designing new risk transfer solutions that protect business recovery and ongoing operations in a post lockdown risk landscape.

Governments can provide clear guidelines on how to reduce the spread of COVID-19 and in some areas, work with the insurance industry to provide the security needed in the short term, ahead of a longer term solution (see Chapter Four for potential longer term solutions: *Recover Re* and *Black Swan Re*).

Using existing insurance products to help the return to work

Many businesses are concerned about providing a safe environment for their employees and customers, while remaining commercially viable during what could be a long recovery phase.

Supermarkets have already put in place protection for customers and employees by restricting the number of individuals in stores, using personal protective equipment (PPE) and adding physical barriers. However, smaller stores may lack the physical space to ensure the safety of their customers. This will impact consumer confidence, businesses' risk exposure and ultimately their commercial viability – compounding the pressure on many smaller retailers who were facing challenges even before the current crisis.

Most businesses should be able to obtain the core commercial insurances that protect their employees and customers (e.g. public liability, employers' liability/ workers' compensation, professional indemnity) as they restart operations, provided they can demonstrate (e.g. through an audit process) that they are following government guidelines on social distancing and PPE usage.

Where government guidelines do not exist, or where there is evidence the guidelines are not being followed, providing cover could be more challenging. In some instances, clarification may be required to make existing cover relevant. This could be as simple as confirming the scope of existing cover, being clear about the conditions for the cover to be valid or by offering additional explicit cover.

2. A pathway to recovery

Covering customers' most material risks in the short term

Developing new solutions to support business recovery

Lloyd's research also shows that businesses are concerned about their exposure to a second wave of the pandemic. Many industry segments have suffered significantly since the onset of the COVID-19 pandemic, and their recovery will be challenging and heavily dependent on cashflow.

Any subsequent waves of COVID-19 would exacerbate this situation and could lead to more insolvencies, especially if governments begin to reduce the financial support they have provided to date. For example, trying to resume operations amid a second wave will be particularly difficult for airlines operating within Europe who already face large liabilities as a result of the EC261 regulation, which allows customers to claim compensation for delayed and cancelled flights.

Most businesses operated without cover for non-damage business interruption for communicable disease prior to COVID-19, but the demand for cover that includes protection against a second wave of the pandemic will now be significant. Indeed, research [3] shows that 44% of UK SMEs expect their insurers to change their policy terms around COVID-19 and cover it in the future.

In some countries, the threat of a second wave could make new COVID-19 business interruption cover unaffordable for customers (many of whom are already struggling from the effects of the current lockdown), or loss-making for insurers (many of whom are already heavily exposed to COVID-19 losses).

This is also true in certain sectors where the risk of transmission of COVID-19 is particularly high (e.g. liability cover in care homes and parts of the hospitality sector that provide accommodation or support to health workers), or where the impact of another lockdown would be particularly costly (e.g. event cancellation or film and TV production).

To overcome these short-term challenges and ensure customers are protected, there are three potential solutions:

1. **The provision of a short-term government backstop ahead of a longer-term solution.** This model is already being deployed in some countries for industries such as film and TV production, and for trade credit insurance. Trade credit insurance relies on the credit risk of the recipient, which becomes a more material risk in a recession. This can lead to insurers withdrawing cover, which restricts trade and slows economic recovery. To prevent this, governments in some countries have stepped in to provide a backstop, taking on some of the risk.

2. **Pooling insurance capital to provide some of the capacity required to cover a second wave of COVID-19.** This has the benefit of offering certainty of pay-out to customers in the event of a resurgence of the virus. The risk to insurers (and therefore the cost to customers) could be significant, but insurers could diversify this by offering the product across different industries or countries or even within a single country, where future lockdowns are applied only at a local level. Insurers could also manage their exposure by writing to a limit or targeting specific customer segments or industries, such as SMEs. If enough insurers participated in such pools or consortia, key sectors of the economy could be protected commercially. The Lloyd's market is planning to develop a new product along these lines (see *ReStart* below).

3. **Offering longer-term commercial policies** so that insurers have a chance to recoup the claims made in the early part of the policy term over a longer period. However, government support may still be required given the high credit risk of such longer-term policies. Lloyd's has developed a framework that could be used to develop a government-backed insurance vehicle - *Recover Re* - that could do this (see Chapter Four for details).

2. A pathway to recovery

Covering customers' most material risks in the short term

ReStart: a potential non-damage business interruption solution from the Lloyd's market

Many industry segments - and SMEs in particular - have suffered significantly since the onset of the COVID-19 pandemic. Forced closures as a result of lockdown conditions have restricted the ability of SMEs to operate. The smaller nature of these businesses means that recovery will be challenging and heavily dependent on cashflow. A second wave of COVID-19 could exacerbate this situation and push businesses into insolvency.

ReStart is a potential new insurance solution the Lloyd's market is developing that could help. It would offer business coverage for future waves of COVID-19 by pooling capacity from several Lloyd's market participants. It would initially be aimed at smaller businesses, potentially expanding across a broader range of SMEs and mid-market over time. It will still be subject to the usual Lloyds performance management requirements and competition law considerations.

Benefits could include:

– Resilience for a key sector of the economy and support for the recovery from COVID-19

– Certainty of business interruption coverage for a second wave of COVID-19 to customers where few alternatives are available

– Contributes directly to customers and their recovery from COVID-19, helping strengthen customer relationships over time

– Potential application outside the Lloyd's market e.g. through involvement of wider London market and global reinsurers

– Manages affordability and insurers' exposure through risk pooling, variable limits and industry or geographical diversification

– *ReStart* could also provide a complementary offering to *Recover Re* (see Chapter 4 for details)

Accelerating the reopening of society by insuring the COVID-19 exit strategy

There is broad consensus that life can only return to normality after a vaccine is developed, distributed and administered around the world.

The insurance industry has a major role to play in insuring the many risks associated with this medical response. For example, there are already multiple trials underway to test existing medicines' impact on COVID-19 in terms of treatment and prevention, all of which require insurance, and some of which are being insured through the Lloyd's market. As a new vaccine is developed further, larger scale medical trials will be required around the world, which will carry significant risk and will also require insurance. Insurers need to be prepared to write these risks at short notice at a significant scale.

Once a vaccine is approved and manufactured at scale, it will need to be transported safely and, potentially, at the right temperature around the world. Donors of vaccines to emerging markets often require the shipments be insured by local governments where possible; where cover is not available, recipients of the vaccines are not protected from losses. The Lloyd's market is working with several parties to develop ways to address this gap by providing effective cover for local vaccine distribution supply chains.

3. Building greater resilience

3. Building greater resilience

Providing products and services for customers' risk needs over the medium term

COVID-19 has highlighted the limitations of both business resilience and traditional insurance products.

From traditional physical damage business interruption policies, through to motor vehicle, public liability, employers' liability and directors' and officers' insurance, customers are re-evaluating their risks in light of changing business practices, and the effectiveness of the protection offered by their insurers.

Specifically, Lloyd's research identified four main areas customers wanted insurers to provide new or different solutions for:

- More flexible insurance cover for a more volatile business environment
- Ways to increase the resilience of their global supply chains
- In-depth assessment and protection from cyber risk exposures
- Protection from digital economy liabilities

The global insurance industry must respond urgently to customers' changing needs. If it doesn't it risks losing customers who could seek to establish or increase their use of self-insurance through captives, or not buy cover at all.

Flexible coverage for a more volatile business environment

With levels of output varying significantly as firms ramp production up or down in response to government restrictions, and with others adopting more flexible business models, many industries are experiencing changes to their insured risk exposures.

Other businesses that have been forced to stop operating altogether, and for whom risk exposure has fallen considerably as a result, are questioning the value they are getting from their annual policies, which may not take this change of circumstance into account.

As a result, customers are seeking more flexible coverage with dynamic risk-pricing that reflects their real-time risk profile.

Although some insurance policies often include a component based on use – in aviation and employer liability/workers' compensation, for example - customers could seek coverage that adapts to varying exposures, possibly in near real-time, in more areas in the future. This could be offered through increased use of internet of things data (e.g. from sensors, telematics, mobile phones etc.), the provision of more on-demand policies, or simply by adding variable components to existing cover.

Case study

Emerging sectors like the sharing economy are already driving demand for flexible coverage[4]

There is already significant demand for more flexible insurance products - not least from the sharing economy.

In 2018 Lloyd's estimated that approximately 500 million people across the US, China, Germany, France, the UK and the UAE have shared their assets, possessions, or services in the past three years to earn a profit.

Post COVID-19, the landscape for the sharing economy is increasingly complex, with COVID-19 affecting user demand and risk profiles.

For users, the protection afforded by a sharing economy platform is a key consideration, in addition to the earning potential on offer. A growing number of platforms are therefore implementing mechanisms to protect their users, including guarantee schemes or insurance cover automatically embedded in transactions. Over the past three years, 57% of adults who have sold services or lent products in the sharing economy have been insured by transaction-embedded or personally owned cover.

3. Building greater resilience

Providing products and services for customers' risk needs over the medium term

Increasing global supply chain resilience

The COVID-19 pandemic has exposed the vulnerability of the global supply chain, with many industries, including automotive, manufacturing, consumer electronics and food, significantly impacted by the near total shutdown of goods transportation.

This global supply chain has worked well under regular conditions, but the pandemic has exposed its shortcomings. This is in part because from a cost-benefit perspective, companies have tended to prioritise cost (e.g. manufacturing) and speed (e.g. the food sector) above the potential risks associated with border closures and transport restrictions. Political tensions and border closures throughout the crisis have added further complexity.

As a result, businesses are now looking at the resilience and diversification of their supply chains, with some companies onshoring, near shoring or dual shoring production to increase flexibility and robustness.

While there are practical steps they can take, customers need insurance solutions that offer greater supply chain resilience and stronger protection against interruptions. For example, manufacturers may look to ensure their supply chains maintain comparable levels of risk management and insurance cover to their own.

Supply chain cover does exist today but can be complex to underwrite and costly to insure. Insurers need to develop a wider range of solutions that can fulfil this growing need, but to do this they will need the data to understand the networks that exist and the risks to which they are exposed.

Case study

Supply chain disruption in the auto and construction sectors[5]

Even in countries where restrictions are easing, manufacturers are still facing challenges. For example, the Nikkei Asian Review reports that China's auto industry remains stuck below 40% of production capacity, even with most of the plants back online, with parts shortages slowing production. Construction is also experiencing significant supply chain constraints, particularly from supply chains in China (e.g. 30% of US building products are imported from China), with liquidity and cashflow implications (e.g. from contract delays and associated penalties).

3. Building greater resilience

Providing products and services for customers' risk needs over the medium term

Protection for new cyber risk exposures

Businesses, employees and consumers are rapidly adopting new technologies to support different ways of living and working during the pandemic, and after lockdown ends. Whilst some industries will return to onsite working as before, many employers and employees will incorporate new ways of working in the future (e.g. more people remote working or transacting more business online).

This is changing and increasing their risk exposure, particularly cyber risk, making cyber security and data protection even more important for businesses. Cyber-attacks have increased since the pandemic began, with misuse of data becoming more prevalent as employees access sensitive data and systems via insecure networks or devices, and an increased volume of network traffic places a strain on businesses' infrastructure.

Customers, therefore, will need new solutions from brokers and insurers to assess, mitigate and transfer their growing cyber risk effectively. To cater for this need, the insurance industry will have to build on its already strong cyber offering by creating new solutions suitable for a greater and more dispersed cyber threat.

Case study
The changing cyber risk profiles of businesses

As businesses adapt to remote ways of working, their employees are increasingly making use of web-based video conferencing, file-sharing, home computers and private internet connections for sharing potentially sensitive information. Following the introduction of lockdown restrictions in the UK, peak internet traffic increased by approximately 17%, and hacking and phishing attempts rose by 37%.[6] The scope of these businesses' cyber risk has increased significantly, raising questions about the effectiveness of their cyber security. Brokers are already responding by advising customers on their changing risk profile.

Protection for new digital economy liabilities

Businesses are increasingly adapting to and taking advantage of digitised environments. This is a longstanding trend, with intangible assets comprising more than 80% of businesses' value today compared to just 32% in 1985 [7]. The speed of this shift is accelerating as a result of COVID-19, with digital transformation now taking weeks rather than months or years in some cases.

Primary industries, such as mining, whose production has been halted by lockdown restrictions, may make greater use of automated vehicles and machinery in future, with corresponding liability likely to shift from these businesses and their employees to the vehicle manufacturers. This rapid transition to digital working is potentially changing the risk profiles of businesses across the value chain.

Customers need insurance solutions that offer protection against the intangible risks and liabilities that derive from doing business digitally, and that more accurately reflect their assets and operations. While liability protection is well established, its development and customer support must match the increasing pace of evolving liability risks.

Case study
Digital liability in healthcare

Non-critical healthcare has digitised at a rapid rate in many countries with medical consultation and prescription services often carried out remotely. The prevalence of digital services (i.e. e-dispensing and delivery, e-consultation) varies by country. For example, Rwanda has leapfrogged more developed nations by developing specific solutions for acute issues, such as blood delivery using drones [5]. However, liability and risks associated with digital services, including virtual consultations and e-dispensing, are not well understood, are not uniform across the industry and are being interpreted differently by different firms. Some companies accept full liability just as they would for an in-person consultation; others assume little to no liability.

3. Building greater resilience

Providing products and services for customers' risk needs over the medium term

Creating new solutions for new risks

To support customers' fast-evolving needs in light of these new risks and changing business models, and to continue to offer a compelling value proposition, insurers and brokers must work together to put more time, effort and resources into developing relevant products and services, as well as the data and technology infrastructure to support them. For example, it is anticipated that brokers and insurers will need to collaborate to clarify protection for non-damage business interruption, either within property policies or as a standalone cover.

A proportionate regulatory environment that encourages innovation including, for example, regulatory 'sandboxes' or temporary policy dispensations, may be required to support new product development at the pace required.

For its part, Lloyd's is encouraging innovation by permitting syndicates to write an additional 2% of premiums on new product innovation on top of their business as usual plan. The Lloyd's market is also working with its Product Innovation Facility (see box) to accelerate product development and design in response to customers' changing risk profiles.

Lloyd's Product Innovation Facility

In 2019, the Lloyd's market launched the Product Innovation Facility (PIF) – an initiative with more than £120m of capacity designed to speed up (re)insurance product development for today's new and emerging risks.

The PIF, comprising 27 Lloyd's market participants, is a 'safe space' for underwriters to experiment with new ideas in a controlled way, which balances the need for appropriate oversight with the need to innovate quickly. It explores non-standard risks that might not fit the traditional market such as those relating to intangible assets, new technologies and others.

The PIF will initially focus on innovating products to respond to an accelerated shift towards intangibles-driven business models in response to COVID-19, through a series of product development sprints that are aimed at testing, learning and potentially scaling successful initiatives.

By working collaboratively, the PIF promotes different thinking and expertise to solve customers' problems.

3. Building greater resilience

Providing products and services for customers' risk needs over the medium term

Protection against systemic risks: developing industry-wide underwriting expertise to protect customers more effectively

COVID-19 will increase demand for pandemic products but there is not currently a significant commercial market for them in part because, pre pandemic, the risk was perceived as too remote. This is changing now, so the insurance sector and their customers would benefit from new centres of excellence to develop and share greater understanding of pandemics and other systemic risks. These would support the development of new insurance products, services and risk management solutions.

These services could either be delivered by individual insurers within Lloyd's or through a joint industry and government vehicle such as *Black Swan Re* (see Chapter 4). Capabilities could also be aggregated and made available to the global industry through an insights portal or application programme interfaces (APIs).

Such centres of excellence could include support for new product innovation, new technical capabilities and services to support insurers, and academic partnerships to develop a better understanding of systemic risks and customers' emerging needs.

As part of the next steps in this paper, Lloyd's will start developing the capabilities listed in Figure 4.

To kickstart this process, Lloyd's has asked the next cohort of its innovation lab to identify insurtechs that can provide some of these capabilities. The global scouting process received 50 applications from across the world, with applicants including an epidemic tracker to better evaluate pandemic risk, as well as solutions to help close the insurance gap for systemic risks.

Lloyd's has also shortlisted four early stage companies to join a three-day 'virtual hackathon' event, during which they will collaborate with key stakeholders from the Lloyd's market to develop a solution, design or prototype to help with COVID-19 protection.

Learning and development programmes to improve underwriting capability around systemic risks

By their nature, systemic risks such as pandemics are hard to evaluate and quantify. While new data sources and modelling will be vital to improving our understanding of these risks, the insurance industry will also require new skills and capabilities to make sense of the complex information available and make systemic risk more insurable.

Together with the Chartered Insurance Institute, the Lloyd's Market Association and other industry bodies, Lloyd's plans to launch a training and education programme to develop the skills and capabilities required to improve the assessment, quantification and underwriting of systemic risk in the UK/London insurance market. It could explore risks sometimes perceived as uninsurable, techniques for quantification and aggregation modelling, and the hazards and causes of loss. The programme could include launching a set of online learning courses, co-ordinating a series of seminars from cross-industry experts, and establishing relationships with academic, technological and clinical institutions.

Capability	Description	Option to explore as pilot at Lloyd's	Potential application across global insurance industry
New systematic risk modelling capabilities and platforms	New models and platforms to help insurers analyse their exposure to systematic risks, enabling better capital modeling, pricing and risk manangement	✓	✓
Data services for pricing and underwriting	Data services to support the pricing and underwriting of systematic risk, and development of new parametric triggers for pandemic products	✓	✓
Exploration of early warning indicators	Real-time monitoring of parametric triggers to assist customers' business continuity planning for a potential systematic event, and to enable fast and efficient claims settlement		✓
Risk management and other value add services	Services to enable more proactive prevention of losses to customers for their insured and wider uninsured risks		✓
Crisis management process improvements	Process improvements to help insurers continue to operate effectively during a future crisis e.g. a hurricane during a second wave of COVID-19	✓	✓
Learning and development	Learning and development programmes to improve systematic risk actuarial and underwriting capability across the market	✓	✓

Figure 4: Enhancing the industry's capabilities around systemic risk

3. Building greater resilience

Providing products and services for customers' risk needs over the medium term

Funding new pandemic risk products

While the insurance industry has the expertise to match pandemic risk to capital, it does not have the capacity to do this at scale due to the systemic nature of the risk. And yet, while the global commercial (re)insurance industry's total capital base sits at around $2 trillion,[8] the capital markets are estimated at around $180 trillion.[9] Currently a relatively small proportion of this is used to take on insurance risk as a diversifying investment to market risk. While there is some correlation between pandemic and market risk, the two are not fully correlated (whilst COVID-19 looks likely to have sparked a global recession, the reverse is not true - a recession will not lead to a pandemic).

The global (re)insurance industry has an opportunity to work with the capital markets and to access their capacity to offer parametric protection for pandemics and non-damage business interruption through structures such as pandemic catastrophe bonds. Initial research suggests capital market participants may have the appetite to underwrite products that offer protection against future pandemics; at the same time customer demand has increased significantly.

The Future at Lloyd's capital workstream is already working on ways to attract the type of institutional investors that would be interested in supporting pandemic risk. If Lloyd's is successful in setting up a multi-arrangement Insurance Special Purpose Vehicle under the UK regulations, it will be able to offer a way to access risk that investors recognise – an efficient Insurance Linked Securities (ILS) structure that gives the same economic and tax outcomes they are used to from similar non-UK ILS structures.

Lloyd's also intends to standardise as many of the contracts as possible to create a set-up process that becomes familiar over time to investors, legal advisers and regulators – reducing set-up times and costs.

While the capital markets provide an opportunity for expansion of commercial capital to support these risks, government partnerships are required for cover at a national level.

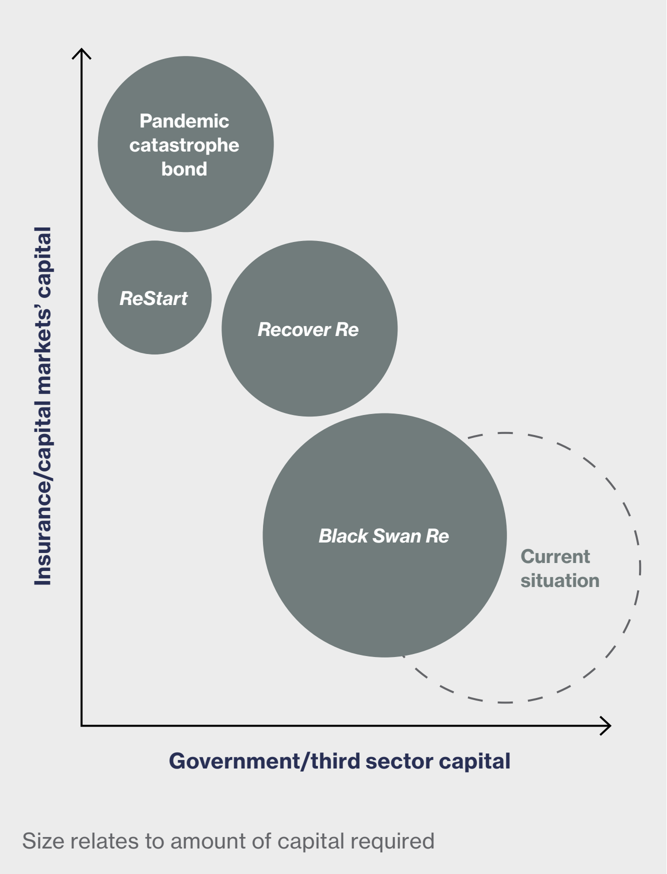


Figure 5: Capital sources for potential systemic risk solutions

4. Protecting the future

4. Protecting the future

Frameworks for government and insurance industry partnerships to protect society over the longer term

As society recovers from the impacts of COVID-19, it must do so in a way that makes it more resilient to the next systemic risk.

Systemic risks are challenging to predict and model, and are so large in scale they render traditional risk mitigation and transfer methods unfeasible, requiring financial resources far in excess of the global non-life (re)insurance industry's $2 trillion asset pool [8]. As of May 2020, global government fiscal support packages in response to the pandemic totalled $9 trillion, according to the International Monetary Fund,[10] but could reach up to $15 trillion by the end of 2020.

As the pandemic has shown, when a systemic event occurs, given the limited commercial cover, governments step in to protect their citizens. This has been effective – whether through business loans, assorted backstops or economic stimuli – and these remain a viable means of continuing to protect society from systemic risks. However, this approach does not change society's perception of systemic risks or incentivise greater understanding or mitigation of their impact, and means taxpayers and future generations end up paying the cost.

Although the global insurance industry does not have the capacity to absorb systemic catastrophic events ('black swan' events) on its own, it can help develop national or regional structures that could provide protection.

These structures could have several benefits. They could ensure more of the costs of systemic event impacts are paid for by those protected, that the risk is modelled and understood, and therefore that the price reflects the risk exposure and drives mitigating behaviour, and that there is a commercial capital layer before the risk falls to governments.

These structures could play a critical part in protecting businesses and society more broadly from future systemic risks, and, as Lloyd's research showed, there is demand for them.

The types of systemic events that could be covered

In order to identify the protection gaps an insurance industry and government partnership could address, there are two areas of risk to consider:

- Risks excluded by commercial covers
- Key risks on a government's risk register

For example, future black swan events could include:

- **Major public health emergency:** causing mass lockdown, resulting in a significant fall in economic activity and lost revenue

- **Widespread telecommunications or utilities failure:** this could take the form of a global cyber-attack impacting millions of devices across multiple industries and critical infrastructure, or space weather. An extreme geomagnetic solar storm could shut down critical electricity, GPS and transport infrastructure around the world for days or possibly months

- **Food or critical resources supply chain failure:** this could be a significant supply chain shock for critical resources that could have major global economic, political and social effects

- **Accelerated climate change:** this could act as a risk multiplier, amplifying the effect and frequency and severity of events such as wildfires, flooding and other natural perils, whilst extreme local temperatures could lead to permafrost melting or damage to infrastructure. This could lead to geopolitical tensions, and associated economic and investment market damage

While these scenarios may seem extreme, in our highly interconnected society, they may be more likely than people think. COVID-19 has demonstrated that society cannot remain complacent, and must prepare for catastrophes of a similar impact and duration.

4. Protecting the future

Frameworks for government and insurance industry partnerships to protect society over the longer term

Two potential frameworks for insuring systemic risks

Lloyd's is proposing two national or regional frameworks that, if taken forward, could provide governments around the world with risk transfer models they could put in place immediately in partnership with the insurance industry.

Lloyd's has published these 'open source' frameworks to provide a blueprint for government and insurance industry partnerships that strengthen societal resilience in the face of black swan events.

The first government and industry open-source framework, *Recover Re*, is an 'after the event' insurance product that could provide small and medium size enterprises (SMEs) with a cash injection and recovery support, paid for over the long-term and backed by a government credit risk guarantee.

The second framework, *Black Swan Re*, could provide reinsurance for commercial non-damage business interruption cover for future systemic risks through industry pooled capital, backed by a government guarantee to pay out if ever the pool had insufficient funds.

These two structures could be used in combination. *Recover Re* could offer immediate positive impacts to a targeted portion of SMEs, whilst *Black Swan Re* could offer protection against the next crisis to a wider set of businesses, creating greater resilience to future systemic risks.

Government-backed risk pooling mechanisms are not new, and Lloyd's is looking at the lessons that can be learned for systemic risk pooling from the different approaches currently adopted around the world (see the supporting paper, Open source frameworks for systemic risk, for details). These highlight the design options and considerations required as a structure for black swan risks is developed.

Framework 1

Recover Re: insurance for immediate relief and recovery

Recover Re is an 'after the event' insurance product framework, which could provide immediate relief and cover for non-damage business interruption, including the current COVID-19 pandemic, and over the long-term. If implemented, this could be an efficient way to inject commercial and government funds into the economy, providing relief to customers with limited borrowing capacity. This framework could be implemented in any country where government has the resources and industry commitment to support it.

Customer benefits:

– Immediate cash injection and recovery support, paid for over the long term

– Non-damage business interruption coverage for future waves of the COVID-19 pandemic should disruption continue past a specified time period or losses exceed a specified excess

– Non-damage business interruption cover for future pandemics and possibly for other systemic events

Role of the insurance industry: to provide the risk management expertise and infrastructure to inject capital into the economy by directly supporting SMEs affected by the current pandemic and which are likely to be impacted by future waves.

Role of government: guarantee of premiums to mitigate the risk of customers defaulting on payments and, if required, provide initial cashflow to cover claims payments in the early part of the policy term.

Detailed policy design options are set out in the supporting paper, Open source frameworks for systemic risk.

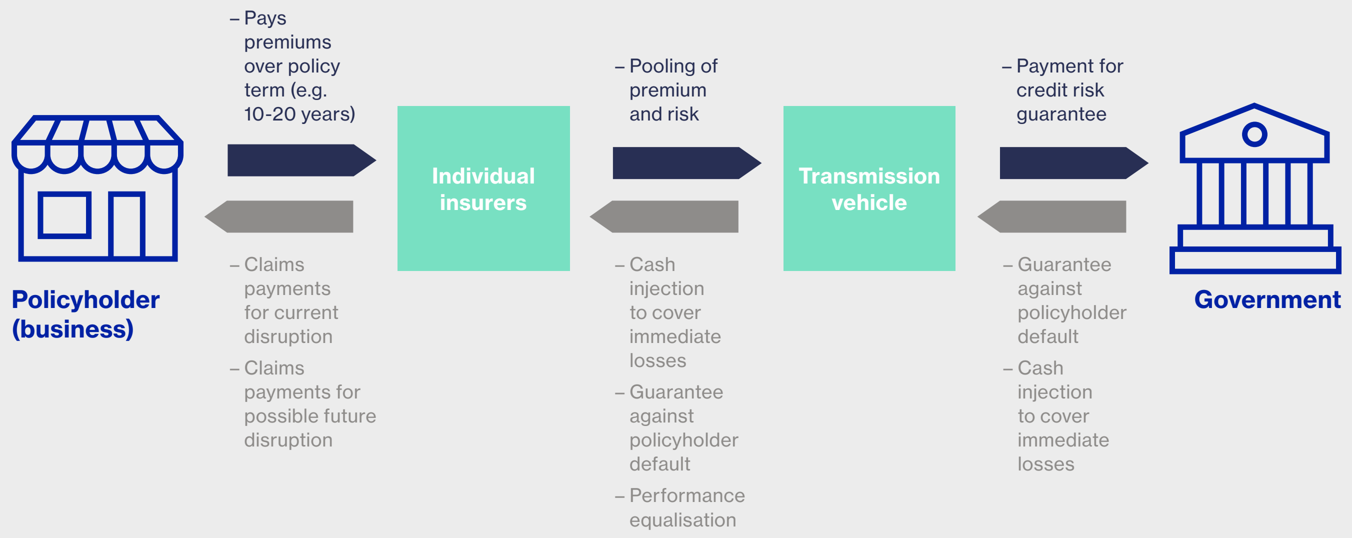


Figure 6: Illustrative cashflow for *Recover Re*

4. Protecting the future

Frameworks for government and insurance industry partnerships to protect society over the longer term

Framework 2

***Black Swan Re*: a public/private partnership to better protect economies against systemic catastrophic events**

Black Swan Re is a reinsurance framework for government and insurance industry partnership which could enable insurers to provide non-damage business interruption cover that offers customers more protection from the devastating and long-term impacts of systemic catastrophic events. If implemented, this structure would enable industry pooled capital to provide reinsurance for the impacts of future black swan events, backed by a government guarantee should the pooled assets become exhausted. The design of this structure includes the requirement for an initial commercial and industry pooled layer of funds, enabling faster pay-outs to customers, as well as a buffer for governments before they need to step in.

Customer benefits:

– Non-damage business interruption cover for a black swan event, certainty of cover and quick pay-out
– Could cover secondary impacts of future events such as supply chain disruption or ability to access lending to help the cost of relaunching a business following black swan event-related interruption

Role of the insurance industry: provide commercial non-damage business interruption cover, ceding risks to *Black Swan Re*. Provide the payment mechanisms that support risk mitigation and protection against systemic risks. Brokers would need to help customers understand the impact of more remote risks and encourage greater protection.

Role of government: provide financial guarantees to customers in the event industry capital is exhausted, as well as support insurers to provide policies covering future black swan events. There are potential efficiencies if it could be combined with other national risk taking pools.

By definition the costs of these types of events would be in the trillions of dollars and, as such, the contribution from any indusry partnership would be relatively small in the short term. However, the insurance industry can provide a commercial layer to pay claims to customers first and quickly.

Detailed policy design options are set out in the supporting paper, Open source frameworks for systemic risk.

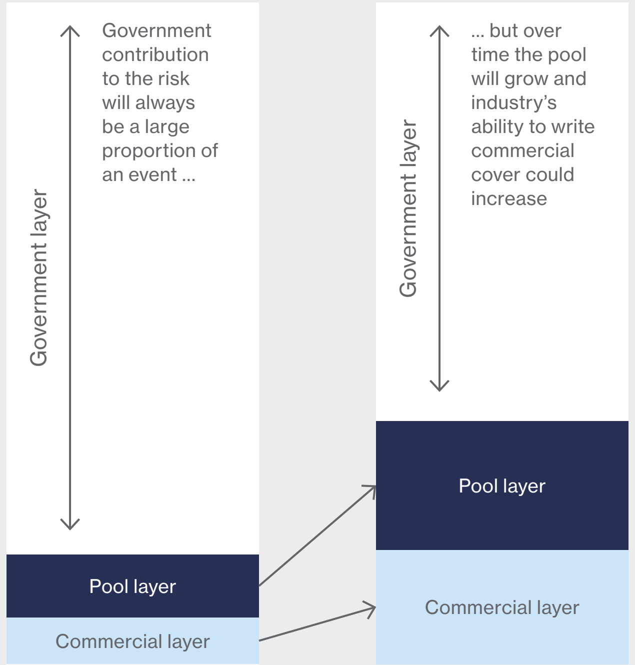


Figure 7

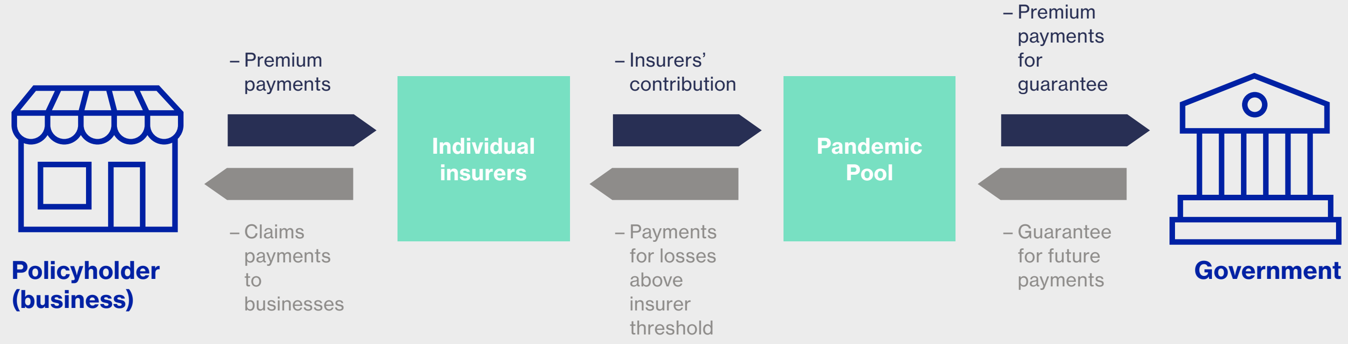


Figure 8: Illustrative cashflow for *Black Swan Re*

4. Protecting the future

Frameworks for government and insurance industry partnerships to protect society over the longer term

Chapter 2 outlined a potential industry framework, *ReStart*, to pool insurance capital to provide targeted non-damage business interruption cover to insure against a second wave of COVID-19. However, more significant levels of commercial cover will require collaboration between government and the insurance industry. The table below compares the features of Lloyd's three potential solutions.

	ReStart	***Recover Re***	***Black Swan Re***
Overview	Insurance pool to offer non-damage business interruption coverage for future waves of COVID-19	'After the event' insurance product, providing immediate cover for non-damage business interruption including COVID-19, with premiums charged over the long term	Government-backed industry pool to reinsure systemic risk from commercial non-damage business interruption cover
Coverage offered	– Non-damage business interruption coverage for potential future waves of COVID-19	– Non-damage business interruption coverage for potential future waves of COVID-19 where commercial cover is not available – Non-damage business interruption cover for future pandemics – Could include other systemic events	– Government-backed reinsurance of non-damage business interruption cover for future systemic events where commercial cover is not available – Could also provide cover against secondary impacts of future events such as supply chain disruption – Would enable greater provision of non-damage business interruption cover
Pricing and affordability	– Premiums charged upfront for annual policy	– A flexible pricing mechanism would allow insurers to recoup upfront claims costs over a long period (e.g. 10-20 years), ensuring affordability for customers	– Full risk cost may not be passed to customers given government backstop

Figure 9: Comparison of key features of the three frameworks

4. Protecting the future

Frameworks for government and insurance industry partnerships to protect society over the longer term

	ReStart	*Recover Re*	*Black Swan Re*
Structure and funding mechanisms	– Pooled capacity from insurers to provide targeted non-damage business interruption cover directly to businesses – Participating insurers could ensure the product is affordable to customers and manage their own exposure through risk pooling, variable limits, and industry or geographical diversification	– *Recover Re* is a direct non-damage business interruption product aimed directly at businesses – Multi-year contract or compulsory product, allowing insurers to recover their positions over time – Requirement for mandatory premium payments over the full term, or cancellation penalty to ensure insurers' upfront claims costs are recovered	– Industry-pooled capital would reinsure insurers offering primary cover for future systemic events – Backed by a government guarantee should the pooled assets become exhausted
Risk borne by the government	– No requirement for a government backstop	– Government may be required to guarantee policyholders' future premiums to mitigate the risk of them defaulting on payments – If early event of significant scale, government may be required to provide initial cashflow to cover claims payments in the early part of the policy term – Option for credit risk mutualisation to minimise government contingent liability	– Government would take on the excess claims for non-damage business interruption beyond whatever level the insurance industry carries
Scale, target segments	– Relatively small scale and targeted initially at smaller SMEs, with scope to expand over time – Optional for customers	– Targeted at specific SME economic segments to manage liquidity – Would either need to be a compulsory or long-term contract	– Broadest coverage – reinsuring all national systemic risk non-damage business interruption cover beyond fixed retentions – May need to be mandatory - to offer or to obtain - to ensure meaningful take up, otherwise there may be a presumption that government will continue to provide implicit cover

5. Global collaboration: recommendations for fast-tracking

5. Global collaboration: recommendations for fast-tracking action

The global insurance industry has responded to customers' needs in the immediate aftermath of COVID-19 by paying claims, donating funds, and offering flexible terms and conditions.

However, the pandemic has exposed the limitations of existing risk transfer structures for systemic risks of this scale. As thoughts turn to restart and recovery, society needs solutions that can offer protection in the new risk landscape and, in the short term, from a second wave of the pandemic.

The insurance industry must take this opportunity to redesign its products, services and structures so it can deliver this outcome for its customers and build a more resilient society.

To inform the industry's response to customers' changing needs, Lloyd's interviewed executives and experts from key industries around the world to identify their concerns and the emerging risks they are facing.

Our customers told us they have four primary short-term needs:

- Ensuring business resilience to a second wave of the pandemic
- Safeguarding employees as they return to work
- Providing a safe environment as their businesses reopen
- Clarity of cover

How the insurance industry must respond:

Create new risk transfer mechanisms, such as *ReStart*, that give customers the confidence of protection from a second wave of the pandemic or from future pandemics.

In the medium term, customers said they were looking for:

- More flexible insurance cover for a more volatile business environment
- Ways to increase the resilience of their global supply chains
- In-depth assessment and protection from new or evolving risk exposures e.g. cyber
- Protection from digital economy liabilities

How the insurance industry must respond:

Accelerate product development, supporting data and underwriting capabilities to align to customers' new needs following the impacts of COVID-19 on business models and operations.

In the longer term, customers said they wanted:

- Risk prevention and mitigation support
- Help in preparing for the next systemic risk

How the insurance industry must respond:

Provide the expertise required to assess and better manage systemic risks, and work with governments to build risk transfer mechanisms, such as *Black Swan Re* and *Recover Re*, that provide society with greater resilience to systemic risks over the longer term.

5. Global collaboration: recommendations for fast-tracking action

Lloyd's next steps to accelerate the industry's response

Delivering these initiatives at the pace and scale needed to help customers and wider society will require close collaboration between the insurance industry, governments, customers, and, in some cases, the capital markets and non-governmental organisations. They will also take time to develop (i.e. *ReStart* 2-3 months; *Recover Re* 3-6 months; *Black Swan Re* 6-12 months) so will require the industry working independently, and with governments, to get started immediately.

For its part, Lloyd's will provide seed funding of up to £15m to support this process, and use its marketplace to act as a convenor and incubator to develop some of these initiatives. Lloyd's will co-design and pilot initiatives in the London market and across the UK, with the support of its Advisory Committee members. Actions include:

– Facilitating the launch of new solutions from the Lloyd's market to support business recovery following the current pandemic, including business interruption coverage for future waves of COVID-19 and effective cover for supply chains for vaccine distribution to developing economies

– Working with Lloyd's Product Innovation Facility through a series of 'sprints' to accelerate product development to meet customers' changing needs better following COVID-19

– Piloting initial components of a Centre of Excellence for systemic risk, including working with the Chartered Insurance Institute, the Lloyd's Market Association and other industry bodies to launch a training and education programme to develop the skills and capabilities that will be to protect customers better against systemic risk

– Refining the open source frameworks for *Black Swan Re* and *Recover Re* in collaboration with the insurance industry, and selected governments and regulators around the world

– Working with Lloyd's London and Global Advisory Committees to establish a technical working group to guide the development of these initiatives

Lloyd's request of its stakeholders

– Share your feedback on the ideas in this paper, or suggest new solutions

– Where desirable, provide support for the initiatives and actions proposed in this document

– Work with Lloyd's and the wider insurance industry to develop these ideas further

– Support discussion, development and implementation of these proposals around the world

References

1. https://www.lloyds.com/news-and-risk-insight/press-releases/2020/05/covid19-will-see-historic-losses-across-the-global-insurance-industry
2. EY research into insurance industry responses to COVID-19, June 2020
3. Mckinsey, Rapid pulse check into UK SME reaction to COVID-19, May 2020
4. https://www.lloyds.com/news-and-risk-insight/risk-reports/library/technology/squaring-risk-in-the-sharing-age
5. Lloyds customer research, June 2020
6. https://www.infosecurity-magazine.com/news/cyberattacks-up-37-over-past-month/
7. https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/insurance/ey-nextwave-insurance-large-commercial-reinsurance.pdf
8. https://www.swissre.com/dam/jcr:c37eb0e4-c0b9-4a9f-9954-3d0bb4339bfd/sigma2_2019_en.pdf
9. https://www.sifma.org/wp-content/uploads/2019/09/2019-Capital-Markets-Fact-Book-SIFMA.pdf
10. https://blogs.imf.org/2020/05/20/tracking-the-9-trillion-global-fiscal-support-to-fight-covid-19/

Sharing risk to create a braver world

Twitter @LloydsofLondon
LinkedIn lloyds.com/linkedin
Facebook lloyds.com/facebook