

# The global risk landscape after COVID-19:

## What role for insurance?

# The global risk landscape after COVID-19: What role for insurance?

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The Geneva Association

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The COVID-19 pandemic transformed our lives overnight. Physical distancing, face masks, hand sanitizers. Lockdowns, quarantines, remote work. The streets of the world's most populous, vibrant cities – suddenly silent and empty.

As of June 2021, we seem to have turned a corner, with a number of viable vaccines and solid evidence that, at least in principle, we know how to defeat this virus. We are entering the post-COVID-19 world.

But which of the changes from 2020 will stick? How will the lasting changes impact insurers and how will they respond? With those questions in mind, we embarked on the research presented in this publication. Of course, we cannot offer firm conclusions. But through expert interviews and a global customer survey covering eight markets – Brazil, China, France, Germany, Italy, Japan, the U.K. and the U.S. – we identified recurring themes and observations that hint at what to expect.

Each trend deserves careful consideration. Take 'accelerated digitalisation', a now-ubiquitous phrase when discussing the impacts of COVID-19. There are major upsides for society (e.g. telehealth provision, flexible work) and insurers (e.g. customer reach, innovative products) alike. But there are serious downsides, too, with cybercriminals exploiting our more digitised routines.

# Foreword

## Jad Ariss

Managing Director, The Geneva Association

Increased risk awareness also does not necessarily translate into increased demand for insurance. In fact, while customers rank cyber insurance as more important in the post-pandemic world, a much smaller percentage plan to buy more of it. This is a call for insurers to step up their education efforts on the benefits of insurance.

By and large, insurers pulled through for their customers during the pandemic. This is to be applauded. High percentages of our survey respondents reported positive experiences, crediting insurers with being responsive.

However, insurers need to apply this to the entire customer journey: 'clear policy wordings' was among the most frequently mentioned future expectations for insurers by both small business and retail customers. Insurers are attuned to this; they have taken hard lessons from business interruption policies that proved ambiguous about what is – and is not – covered.

There are significant changes ahead for insurers: new global risks, evolving customer behaviours, transforming business models. With more value placed on resilience and sustainability than ever before, society's expectations of insurers – and the opportunities available to them – are surging.

# Executive summary

## THE WORLD IS EXPECTED TO TRANSITION TO A 'NEW NORMAL' POST-PANDEMIC.

The world is expected to transition to a 'New Normal' post-pandemic. Many trends that were already underway have been amplified by COVID-19, and a number of lasting effects are expected to fundamentally change the risk landscape and operating environment for insurers, too.

This report puts forward a baseline scenario for the post-pandemic risk landscape based on desk research and in-depth interviews, the key elements of which include changes to the political, economic, social and technological environment. Based on this baseline scenario we believe that accelerated digitalisation, 'Big Government', the pivot to sustainability, and the shift to remote working – in that order – are likely to have the most significant effects on insurers and their role in the post-pandemic world.

The pandemic has hastened and amplified digitalisation and will accelerate consumers' embrace of e-commerce – for good. This offers new opportunities for insurers and their customers but also entails risks associated with strategic business objectives.

## THE PANDEMIC HAS HASTENED AND AMPLIFIED DIGITALISATION AND WILL ACCELERATE CONSUMERS' EMBRACE OF E-COMMERCE FOR GOOD.

Governments have assumed a vital, unprecedentedly active role during the COVID-19 crisis and temporary and unconventional emergency stimulus measures may well become permanent. These programmes may negatively impact insurance demand by fueling the perception that governments will intervene and provide disaster assistance in the event of a truly disastrous pandemic. To alleviate rapidly growing sovereign debt, governments might be tempted to condone higher levels of inflation, with adverse consequences for insurers' future claims costs on current policies, the adequacy of their loss reserves and the demand for long-term life insurance.

COVID-19 has also exposed protection shortfalls that affect people's livelihoods, lives and health. For insurers, this represents a major opportunity to build resilience by addressing protection gaps for three major insurable risks faced by society: natural disasters, premature death and catastrophic spending on healthcare.

Many companies are implementing a shift to remote work. This has implications for companies' risk exposures in various areas and requires amendments to existing insurance coverages. The shift is expected to reshape the advance of urbanisation, with greater differentiation between cities that are merely aggregations of economic activity and genuinely smart cities where people choose to live. We may also see a protracted period of higher social inequality.

To test the hypotheses formulated from the desk research and interviews, a global survey of 7,200 retail and 800 small commercial insurance buyers in eight countries (Brazil, China, France, Germany, Italy, Japan, U.K. and U.S.) was commissioned. It finds that:

1. Over 50% of both retail and commercial respondents believe that remote working, the shift to digital and increased social inequality are the trends that are most likely to endure post-pandemic. More than a third of small business owners expect supply chains to shift towards more local suppliers.
2. Almost two thirds of retail customers are concerned about a higher risk of extended hospitalisation and a loss of income or wealth. For small business owners, furloughing employees, a deteriorating financial position of the business and the need to close down rank highest among post-pandemic concerns.



3. More than 40% of retail customers consider health and life insurance as more important post-pandemic, though only a fifth intend to buy (additional) coverage. More than 50% of small business owners value business interruption (BI), group life and health, and liability insurance more highly; just over a quarter expressed their intention to purchase (additional) insurance. 'Other priorities' was given as the main reason for not purchasing (additional) insurance, despite valuing it more highly.
4. Retail and small commercial customers expect more comprehensive policies to cover future unknown disruptions, clearer and simpler policy wordings as well as more prevention services. More specifically, small business owners expect more comprehensive BI policies.
5. Almost 90% of both retail and commercial respondents with at least one insurer interaction during the pandemic reported a positive experience with their insurers during the pandemic. This bodes well for insurers' perception as a competent and reliable partner in meeting customers' post-pandemic risk management and protection needs.

From the desk research, interviews and survey results, five key themes underpinning the role of insurance in the post-pandemic risk landscape are identified.

COVID-19 has demonstrated the fragility of modern life. This is set to translate into higher awareness of risk and existing protection gaps and, therefore, increased demand for risk cover. This could go hand-in-hand with higher expectations from both the public and private sectors on issues such as financial exclusion.

Heightened awareness of vulnerability has led to a rise in mindfulness. For insurers, this shift offers additional opportunities to expand traditional business models predicated on paying claims and benefits to broader and more engaging customer propositions, such as prevention services facilitated by the increasing use of sensors and smart devices and the anticipated roll-out of 5G technology.

The pandemic has also reinforced the pivot to sustainability across businesses and society, creating new opportunities for insurers. In light of the massive societal imbalances caused by the pandemic, insurers will have to pay more attention in the future to the social dimension of ESG. More generally, the pandemic has prompted a re-evaluation of the social contract, i.e. the division of risk among individuals, employers and the state. This could herald a new chapter for the welfare state and the role of private-sector insurance in complementing it.

The need to embrace digital transition could prove to be a 'blessing in disguise' for the insurance industry. Due to COVID-19, the way insurers work, the way they organise their core processes, and the way they interact with their clients have changed for good.

Following a wave of disputes and litigation about denied pandemic-related BI claims, there is broad consensus that insurance policies need to be clearer about what they do and do not cover. Customers will increasingly expect clear, undisputable language in policies going forward.

THE PANDEMIC HAS ALSO REINFORCED THE PIVOT TO SUSTAINABILITY ACROSS BUSINESSES AND SOCIETY, CREATING NEW OPPORTUNITIES FOR INSURERS.

# Setting the scene: How the post-COVID-19 risk landscape could look

The COVID-19 global pandemic has been having the most profound impact on individuals, households, businesses and governments since the cataclysm of World War II. Some of these effects will prove ephemeral, others could be enduring and lasting.

Individual preferences and behaviours in terms of working, living, travelling and consuming are likely to change for good. Employees will expect more leeway to work remotely. The attractiveness of urban centres could wane, for at least as long as the virus has not been eradicated through effective vaccines and treatments. The lure of long-distance travel could also reduce. People are likely to rely more on domestically produced goods and services, with changing trade-offs between access and availability on the one hand and price on the other. And public faith in and expectations towards governments may remain high long after the pandemic has faded from memory, even if increased levels of protection and security come at the expense of individual freedoms.


Businesses will continue in their drive to adopt digital technology or even digital business models as the world has been going through a 'crash course' in remote working and virtual transacting. Firms will also revisit their supply chains. The pandemic has shown the virtues of bigger safety buffers and a minimum availability of locally available supplies. Business leaders and their shareholders might accept lower levels of profitability in exchange for demonstrably higher levels of (local) resilience. At the macro level, the desire for higher self-sufficiency could lead to a much more fragmented global economy and reduced welfare gains from international trade.

Finally, the public sector. 'Big Government' was and still is needed to fight COVID-19. What we have been seeing during lockdown phases was probably the most dramatic expansion of state power since the Second World War.

Nobody knows how the post-COVID-19 risk landscape will ultimately look. Will we witness a return to the status quo ante over time? Or do we have to adapt to a 'New Normal', with permanently changed features of individual, corporate and government behaviours? There is considerable uncertainty because, from today's perspective, it is challenging to disentangle which changes are of a more permanent nature and which are transient and will disappear as soon as the pandemic wears off.

Regardless of which scenario plays out, the insurance industry will be able and expected to help manage, transfer and finance the risks of the post-COVID-19 environment. For insurers to rise to this occasion, they will have to explore a number of strategic options and embrace changing customer needs in the post-pandemic world.

The following study investigates potential configurations of the post-COVID-19 risk landscape and the implications for protection needs and risk management. To substantiate our theoretical analysis, we paint an empirical picture of retail and small commercial customers' views of risk and perceptions of the insurance industry during the pandemic and their evolving post-pandemic needs and buying behaviours, based on a global survey that spanned eight different jurisdictions in the developed and developing world and collected views from a total of 8,000 individuals and small business owners. Based also on more than 25 complementary, in-depth interviews with executives, thought-leaders and experts, we will delineate unchanged, accelerated and new trends, examine strategic longer-term implications for the role of insurance, and sketch out innovative insurance responses to changing customer needs.

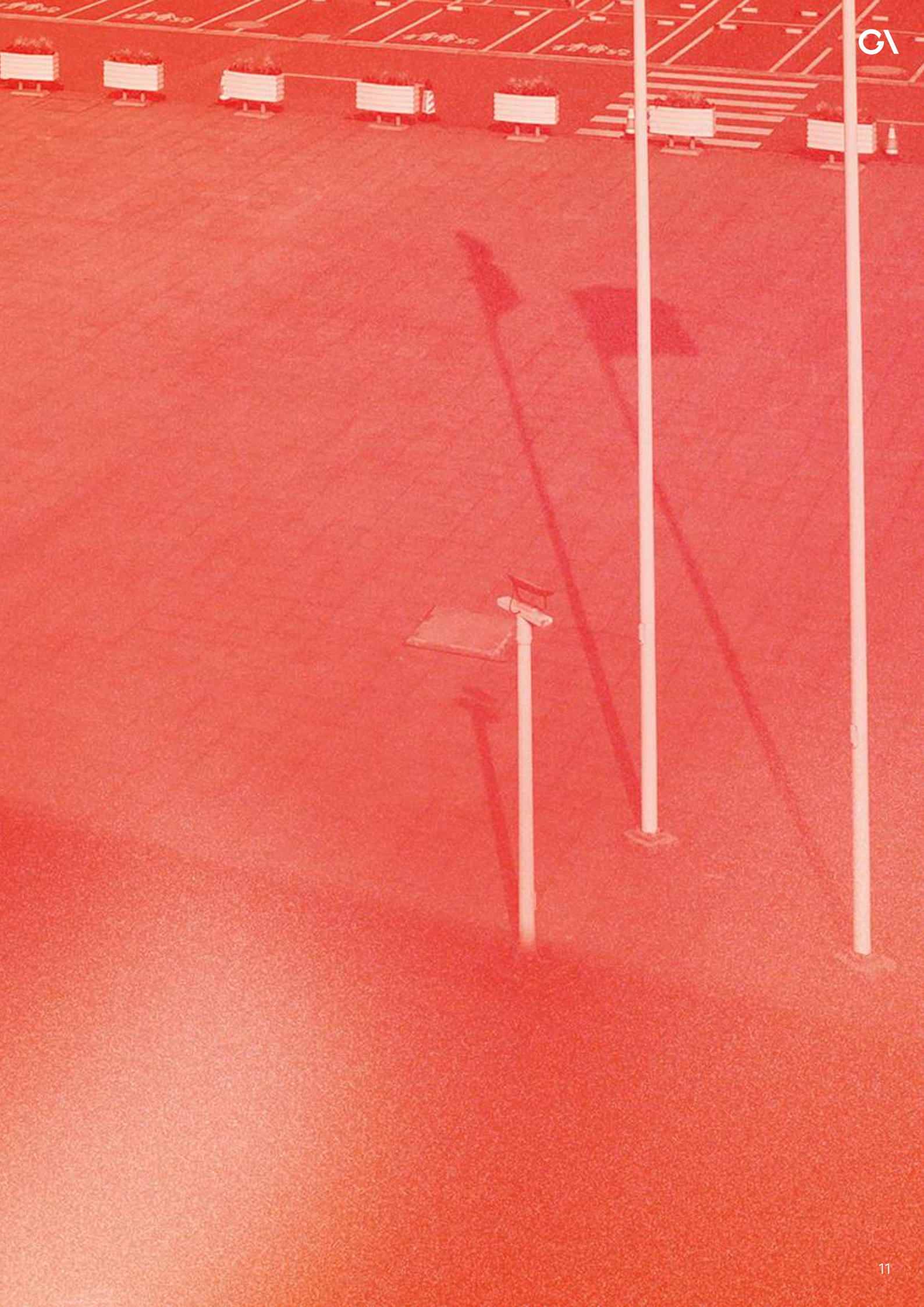


# The baseline scenario

*"As a result of the corona crisis we will witness a marked shift to a more purpose-driven form of capitalism where corporations try to achieve sustainable growth by providing solutions to societal problems facing their customers. Advisory needs will increase for specific societal problems posed by COVID-19, including mental and physical well-being of the individual. Insurance companies will need to shift from financial compensation to risk management and advisory services to prevent and mitigate natural catastrophes and sickness by utilising advances in technology and data."*

**Tsuyoshi Nagano**

Chairman of the Board, Tokio Marine Holdings



# Transition to a 'New Normal'

Our baseline scenario is the world's transition to a 'New Normal' in the post-pandemic era. A number of lasting effects from COVID-19 are assumed to translate into a fundamentally different risk landscape and operating environment for insurers, too. On the one hand, the pandemic will accelerate and strengthen forces that were already underway, such as changes in trade, technology and economic policy. On the other hand, new trends such as widespread remote working are expected to stick. We assign an estimated 70% probability to this baseline scenario outlook. The next sections offer two alternative scenarios, with more optimistic and pessimistic outlooks, respectively, and an assigned likelihood of 15% each. Figure 1 illustrates the key elements of our baseline scenario, in terms of probability and impact on humanity and the economy. This is a subjective assessment based on the research and interviews we conducted.

**See next page**

What the 'New Normal' scenario implies

1. Huang 2020.
2. Haass 2020.
3. Caballero and Simsek 2020.
4. Kumar 2020.

# International and domestic politics

Under our baseline scenario, the pandemic will mark a turning point in both geopolitics and domestic politics. COVID-19 will intensify the pre-existing trend towards more great-power competition. The pandemic has coincided with and exacerbated tensions between China and the U.S. Both countries have adopted largely independent courses through the pandemic outbreak in 2020, marked by deep-rooted distrust, mutual suspicions and conspiracy theories.<sup>1</sup>

The initial focus on trade disputes has broadened to a full-blown technology rivalry, ranging from 5G technology to access to semiconductor technology to consumer apps. China and the U.S. will continue to diversify away from each other in trade but are not expected to decouple completely given the high degree of integration built over the past two decades.

Leading scholars and pundits have embarked on exploring future geo-strategic scenarios. Richard Haass, President of the Council on Foreign Relations, for example, questions whether COVID-19 is a genuine historical watershed, and rather suggests that it will accelerate existing and ongoing global trends like decreased multilateralism, the retrenchment of the U.S. from its global leadership role (already starting with the Obama administration) and heightened tensions between major powers.<sup>2</sup>

For domestic politics, too, the pandemic presents challenges to the status quo under our baseline scenario. The confluence of an economic downturn and high asset prices as a result of low interest rates is expected to stir public anger and populist sentiments, especially among the hardest-hit segment of the labour market: poorly paid service-sector workers. The increasing gulf between 'Main Street' and 'Wall Street',<sup>3</sup> with **rising social inequality**, intergenerational unfairness (e.g. the unaffordability of property for the younger generation) and political polarisation, dangerously destabilises the social and political fabric.<sup>4</sup>

*"The dilemma between building and distributing wealth is a constant in the policy choices of every country, but the current crisis is exacerbating this dilemma, because we are seeing both a fall in efficiency and an increase in disparities."*

**Denis Kessler**  
Chairman and CEO, SCOR

HIGH

Expected impact on humanity  
and the global economy

DECREASED MULTILAT

CONSOLIDATION OF ECONOMIC POWER

MEDIUM

RISE IN S

RISE IN POPULISM

Figure 1

# A summary view of the baseline scenario (‘New Normal’)

*Bold terms = developments likely to have a particularly  
significant effect on insurers post-pandemic.*

LOW





ERALISM

SOCIAL INEQUALITY

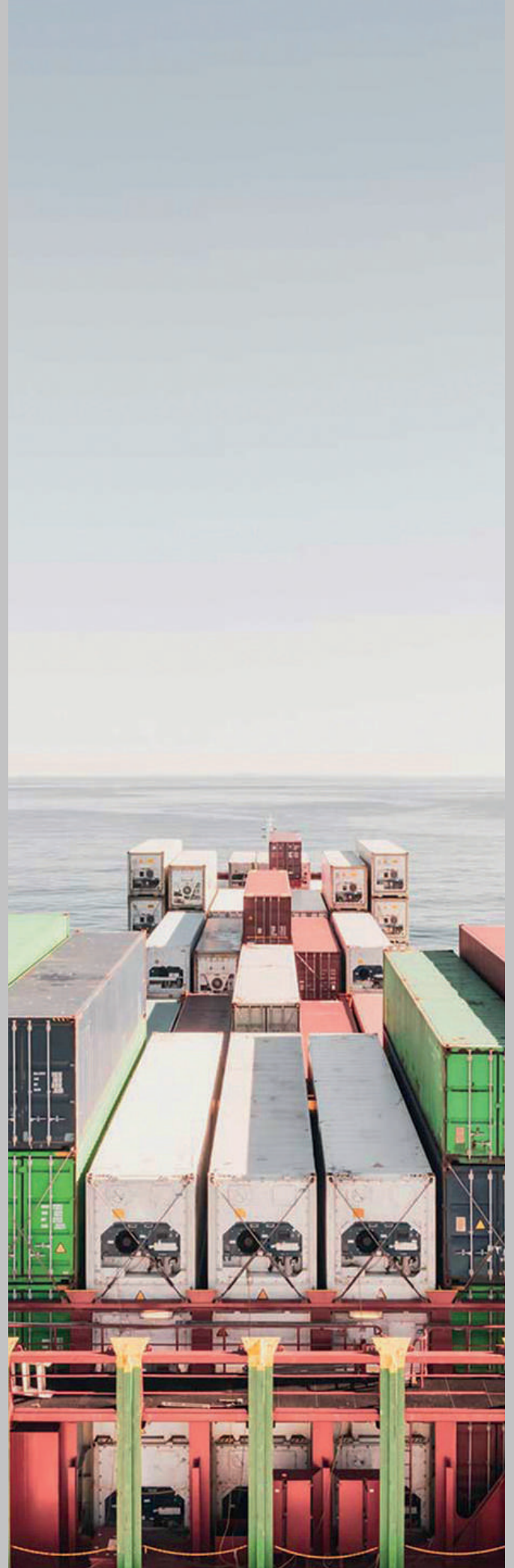
IUM

# The economy and business

A crippling economic catastrophe was averted in early 2020 on the back of 'whatever it takes'-style interventions in financial markets by central banks as well as financial relief from governments to workers and businesses, and the concomitant expansion of budget deficits to near-wartime levels.

Our baseline scenario assumes that COVID-19 will hasten changes in how economies function and businesses are run. Rather than a wholesale turning point, we believe that, similar to politics, the pandemic will accelerate forces already in motion, such as 'peak globalisation' and the digital penetration of more aspects of commercial and personal lives.

5. WTO 2020.
6. McKinsey 2020b.
7. Haraguchi and Lall 2015; Todo et al. 2015.
8. McKinsey 2020a.
9. Bonadio et al. 2020.
10. Miroudot 2020.
11. McKinsey 2020a.
12. Birkinshaw 2020.
13. Ellen MacArthur Foundation 2012.
14. Martin 2019.





## Peak globalisation

Economic globalisation had come to a halt long before COVID-19 struck. Between 1985 and 2007 trade volumes increased at around twice the rate of global GDP; since 2012, however, the rate of growth has barely kept pace with the economy at large. Even foreign direct investments fell.<sup>5</sup>

Automation and robotisation have been reshaping the manufacturing sector in a way that cost savings from locating production where labour is cheapest are losing importance. According to McKinsey, in manufacturing, companies that adopt Industry 4.0 techniques such as advanced robotics and 3D printing can offset half of the labour-cost differential between China and the U.S.<sup>6</sup>

'Just in time' is moving towards closer and more automated suppliers. Also, even before COVID-19, disasters such as the 2011 Thai floods, the Tohoku earthquake, and tsunami in Japan highlighted the risks associated with complex, long, unwieldy and highly specialised supply chains.<sup>7</sup> Furthermore, from 2016, when the trade spat between the U.S. and China began, companies became more aware of their exposure to geopolitical risk associated with economic nationalism.<sup>8</sup>

In light of COVID-19, firms are even more likely to trade off some cost efficiency for more resilience and robustness (see next section), adding to the desire to build supply chains not only closer to home but also with a broader panel of suppliers.<sup>9,10</sup> Some of these commercial decisions are driven by politics, especially in 'sensitive' sectors such as pharma and semiconductors. Having said this, as the world's largest supplier of intermediate goods, China will remain a key element of many global supply chains.<sup>11</sup>

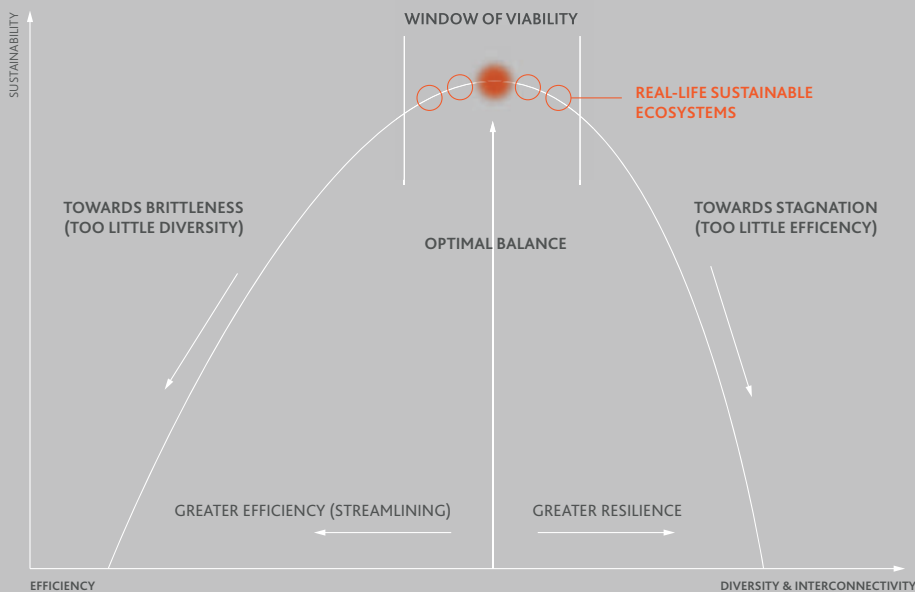
## Shifting efficiency-resilience frontier: Pivot to sustainability

Beyond supply chain reconfiguration, the pandemic will also have a more fundamental lasting effect on how businesses look at the perennial trade-off between corporate efficiency and resilience. COVID-19 has demonstrated virtually overnight that the ability to adapt (e.g. through remote working) is not only essential but also not necessarily contradictory to maximising productivity. In any case, the fixation on efficiency and productivity is now being perceived as having damaged the capacity to prevent, deal with and bounce back from a severe adversity.<sup>12</sup>

Figure 2 illustrates this trade-off. The more streamlined and simplified (i.e. efficient) a system is, the more brittle (i.e. vulnerable) to shocks it becomes. Conversely, the more nodes and connections in a system, the more resilient it is.<sup>13</sup>

A 'sweet spot', which we assume to be skewed towards resilience, occurs where efficiency and resilience co-exist and maximise the overall sustainability of the system. The pandemic has exposed businesses' overreliance on efficiency, ignoring the value of resilience, which requires diversity and a certain degree of slack.<sup>14</sup> With COVID-19, the 'sweet spot' between excessive efficiency at the risk of large-scale breakdowns from time to time, on the one hand, and too much resilience which risks stagnation, on the other, is likely to have shifted right in Figure 2. Growing awareness that our globalised societies and economies are more prone to systemic shocks will lead to a re-assessment of what people and businesses value and how they operate.

Figure 2: Balancing efficiency and resilience



Source: Ellen MacArthur Foundation,<sup>15</sup> adapted by The Geneva Association

As a result of the vulnerabilities exposed by the pandemic, many international organisations, as well as governments, are responding to a shift in citizens' expectations and are now advocating to build resilience much more strongly into global economic systems. Examples are the World Economic Forum's 'Great Re-set' initiative or, more specifically, the Biden administration's USD 2 trillion infrastructure investment plan.<sup>16</sup> As opposed to government stimulus programmes adopted during the 2008–09 financial crisis, today's measures incorporate climate or environmental action, given the possibility that the pandemic foreshadows a systemic and wide-ranging global climate crisis, both in terms of loss of life and the unprecedented negative cascading economic impact (see Box 1). More generally, 'the tyranny of the status quo' (Milton Friedman) appears to have weakened, 'creating a context in which radical, systemic change is possible'.<sup>17</sup>

15. Ellen MacArthur Foundation 2012.

16. The White House 2021.

17. WBCSD 2020.

18. United Nations 2015.

19. Newburger 2020.

20. World Meteorological Organization 2020.

21. World Resource Institute 2020.

22. In fact, in China, the U.S. and Germany, leadership is based on the green stimulus spending following the financial crisis. China's solar PV manufacturing capacity increased by a factor of 20 between 2007 and 2011. In the U.S., the share of wind turbine equipment manufactured domestically rose from 25% in 2006–2007 to 72% in 2012.

23. World Resource Institute 2020.

24. O'Callaghan and Murdock 2021.

25. OECD 2020c.

26. Friedman and Tankersley 2021.

27. IISD 2020.

28. Volz 2021; OECD 2020c.



# Let's transition to a resilient low-carbon economy

Following the coronavirus pandemic, there is evidence of a reduction in greenhouse gas emissions by 7% from 2019 linked to a significant reduction in global air travel and daily commute by car. According to the latest scientific assessments, this translates into a roughly 0.1°C reduction of global temperatures by 2050, which, of course, is negligible compared to the targets set by the Paris Agreement.<sup>18,19</sup> With the launch of a large-scale vaccination campaign to end the pandemic, scientists expect a reversal of emissions as economies recover.<sup>20</sup>

Similar patterns were observed following the 2007–08 financial crisis, when global CO<sub>2</sub> emissions fell as a result of reduced economic activity but rebounded strongly after the recovery. During that crisis, while about one sixth of the economic stimulus spending was allocated to 'green' measures, it was concluded that this was insufficient to incentivise countries to transition to low carbon.<sup>21</sup> On the other hand, there is evidence in some countries, such as the U.S., China, and Germany, that such investments created jobs and helped build up competitive renewable energy industries after the financial crisis.<sup>22,23</sup> Many hope that the recovery spending for COVID-19 may put the world on the right path to low-carbon transitioning, but the signs so far are not promising.

Following the COVID-19 crisis, the world has witnessed unprecedented government interventions to mitigate both the health and economic impacts of this global pandemic. In 2020 alone, COVID-19 emergency spending announcements totaled USD 14.6 trillion.<sup>24</sup> However, so far the balance

between green and non-green spending is not conducive to low-carbon and more favourable environmental outcomes. According to the Global Recovery Observatory, of this total, only USD 709 billion has been spent on green and recovery projects. Furthermore, recent OECD country analysis of green recovery measures indicates that a number of governments are using the post-COVID measures to roll back existing environmental regulations and taxes and expand fossil-fuel intensive infrastructure and electricity.<sup>25</sup>

The latest developments in 2021 include COVID-19 recovery plans put forward by the Biden administration in the U.S. and by Japan's Prime Minister Suga in Japan to increase spending targeted at green energy, reducing carbon emissions and promoting carbon neutrality.<sup>26,27</sup> These investments could influence which technologies and economic sectors will drive future growth, whether we remain dependent on heavy-carbon-emitting sectors or embark on a path to a resilient low-carbon economy. Given the large investment needs to enable transitioning, post-COVID public green-recovery spending and other policies could also be a critical step to incentivise private-sector investments in transitioning, e.g. through tax credits and loan guarantees, government de-risking measures and co-investments with the private sector in green projects.<sup>28</sup>

*Source: Maryam Golnaraghi, Director Climate Change and Emerging Environmental Topics, The Geneva Association.*

*"In light of COVID-19, more emphasis will be placed on improving underwriting quality and capital efficiency, cutting businesses that may generate significant risk exposure in order to enhance sustainability and profitability. In terms of product innovation, more attention will be paid to meeting the soaring demands of governments and enterprises in dealing with catastrophe risk and public health emergencies, as well as to satisfying the growing needs of residents in comprehensive health management and flexible employment."*

**LUO Xi**  
Chairman, PICC

## Accelerated digital penetration

The pandemic has hastened and amplified digitalisation as consumers rapidly switched from in-person to virtual interactions in the realms of work, education, shopping, entertainment and more.<sup>29</sup> Similar to the effects of the 2003 SARS outbreak in China, COVID-19 will accelerate global consumers' embrace of e-commerce – for good.<sup>30</sup> Firms may also have more incentives to invest in automation<sup>31</sup> to enable re-shoring of production to shield against value chain disruption (see earlier section, 'Peak globalisation'). According to WEF, employers are set to intensify their job automation and augmentation efforts, raising the possibility of a 'jobless recovery'.<sup>32</sup> Over 80% of business leaders have started accelerating the automation of their work processes and expanding their use of remote work. More than one quarter of employers expect to temporarily reduce their workforce, and one in five expects to permanently do so.

The pre-existing key features of technological progress are set to become more salient in the post-pandemic world. First, technology disrupts production processes, driven by the rapid scale-up of digital platforms. This trend questions traditional boundaries of firms and, as outlined before, reshapes global value chains. Second, technology dramatically impacts the mix of skills required to succeed in the labour market. There is an increasing gulf between declining compensation for unqualified jobs and jobs requiring competencies that cannot be automated or roboticised. This trend exacerbates social inequality.

Third, digital technology changes the terms of work. 'Standard' full-time salaried, long-term contracts are increasingly replaced by more short-term 'gig' work, often via online work platforms. This shift is set to aggravate protection gaps, especially in retirement and health.<sup>33</sup>

From a societal perspective, technology opens up opportunities for 'Building Back Better'<sup>34</sup> on the back of an accelerated transformation towards more sustainable, digital and ultimately more productive operating models.<sup>35</sup> However, a greater dependence on technology, as expedited by the pandemic, has conjured up increased cybersecurity risks and catapulted a breakdown of IT infrastructure and networks onto the list of top concerns for corporate risk experts.<sup>36</sup>

29. Koeze and Popper 2020.

30. Zhang 2020.

32. Chernoff and Warman 2020.

32. WEF 2020c.

33. Saliola and Islam 2020; The Geneva Association 2021 (forthcoming).

34. Build Back Better (BBB) originally referred to the Sendai Framework of disaster recovery that was adopted at the UN World Conference on Disaster Risk Reduction in Sendai, Japan in 2015.

35. WEF 2020a.

36. Ibid.

37. Swiss Re 2020a.

38. IMF 2020.

39. OECD 2021.

40. Credit Suisse 2020.

41. Friedman 2014.

42. Deutsche Bank 2020.

43. OECD 2021.

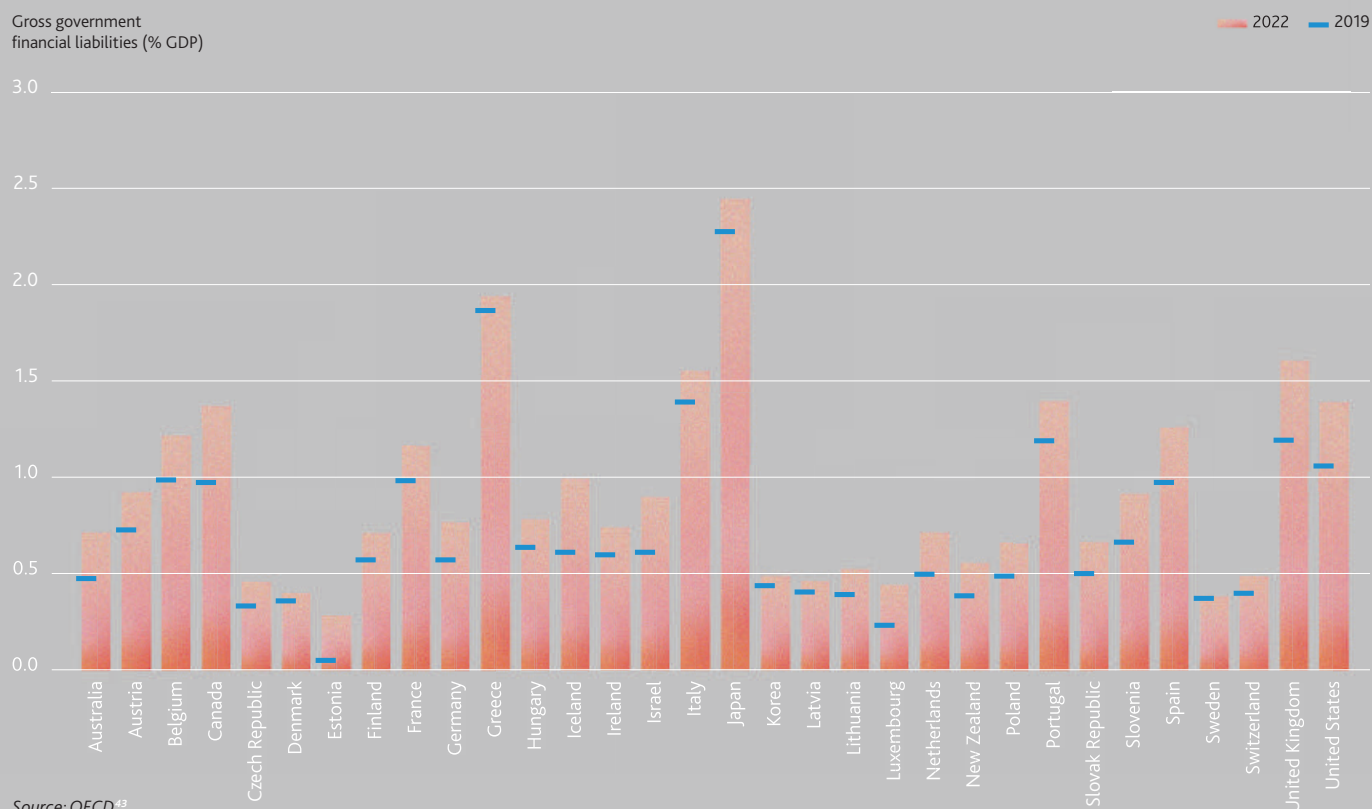
# Growing role of the public sector: 'Big Government'

As 'spenders of last resort', governments have assumed an unprecedentedly active and paramount role during the COVID-19 crisis.<sup>37</sup> The spectrum of interventions ranges from emergency loans and even guarantees to businesses, to capital injections into private firms and comprehensive furlough schemes. As a result, public borrowing has been soaring. In advanced economies, the overall gross public-debt-to-GDP ratio is forecast to sharply increase from 104% in 2019 to 124% by 2021.<sup>38</sup> Similarly, OECD estimates that by the end of 2022, government debt-to-GDP ratios in OECD countries will be approximately 20 percentage points higher than 2019 levels.<sup>39</sup> In many economies, government debt-to-GDP ratios are expected to reach their highest level in at least 40 to 50 years (Figure 3).

At some stage, however, public debt will need to return to sustainable levels. In the absence of sufficient economic growth or rising inflation, this will require higher taxes, austerity programmes or longer-lasting financial repression – government policies designed to keep interest rates

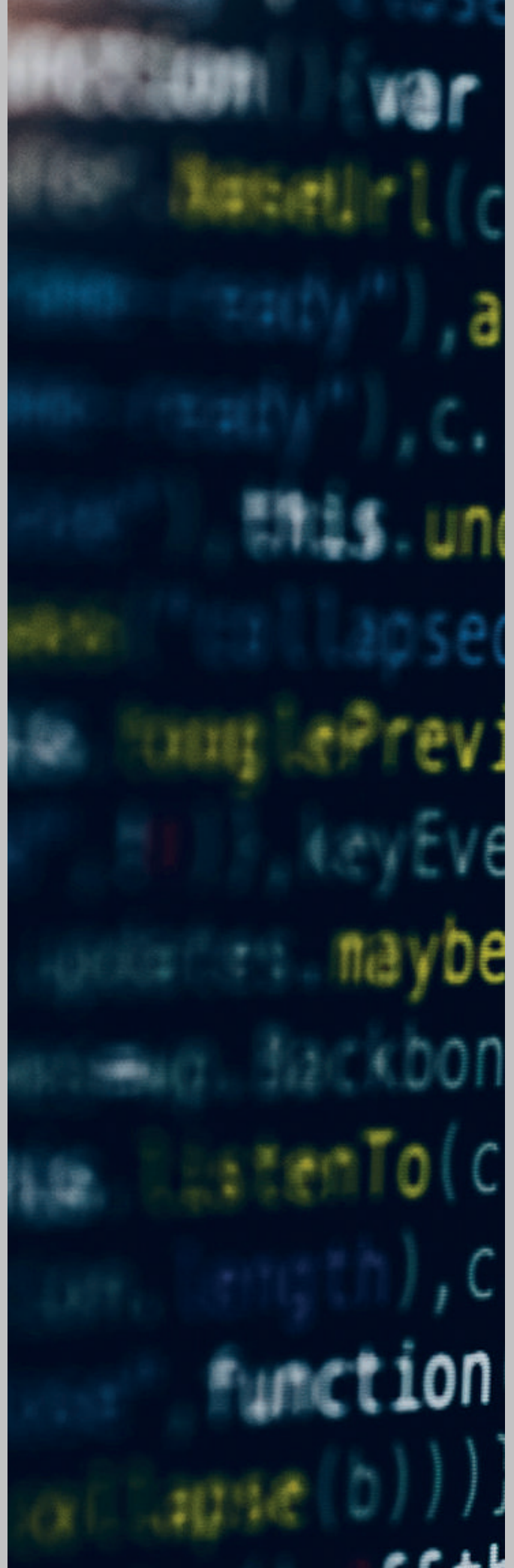
at ultra-low levels to minimise the cost of debt. Such policies are tantamount to an invisible tax on savers and could undermine the sustainability of pension systems and the relevance of life insurance-based savings products.<sup>40</sup> The experience from the global financial crisis suggests that temporary and unconventional emergency stimulus measures may well turn permanent; for example, the hitherto unheard of monetary policy response that many central banks have implemented in response: large-scale asset purchases, i.e. the use of the central bank's balance sheet as a distinct tool of monetary policy.<sup>41</sup> The natural perseverance of interventionist monetary and fiscal schemes will be further augmented by rising income and wealth inequalities in the wake of COVID-19. An important side effect will be that the Schumpeterian process of creative destruction and, as a result, productivity growth and long-term welfare, are damaged when governments continue bailing out failing firms and protect jobs indefinitely.<sup>42</sup>

Figure 3: Public debt ratios in % of GDP (estimated)



## Consolidation of economic power

As a result of accelerated digitalisation, the economy is set to become more dominated by firms with the most advanced stock of intangible assets and the biggest repositories of data. This shift has reinforced the competitive edge of the largest (technology) firms, which were in a superior position to accommodate the pandemic-induced surge in online demand. This impact is likely to extend into the future as buying habits may have changed permanently.<sup>44</sup> 'If this reinforces the network advantages of these large platforms, it may become even more difficult for competitors to gain a toehold'.<sup>45</sup> More generally, weakened smaller enterprises may exit their markets entirely and troubled mid-sized and larger firms may have no choice but to be acquired.<sup>46</sup>





*“Will 1.6 million people a day ever resume commuting to New York City? What would be the implications on suburbs and the myriads of businesses that service commuters? Wealthy residents leaving cities will create large budget holes and financial burdens on those remaining.”*

**Nick Silitch**

Chief Risk Officer, Prudential Financial

# The societal environment

## Remote work and ‘peak urbanisation’

In hindsight it is remarkable that it took a global pandemic to propel the concept of remote working to victory. The technological prerequisites have been in place for years. As long as 20 years ago, it was already argued that modern communication technology results in the ‘death of distance’,<sup>47</sup> with location becoming ever less relevant to business and personal life. Nonetheless, the past two decades have seen urban centres continue to sprawl<sup>48</sup> due to the perceived productivity-boosting effects of gathering knowledge workers together.<sup>49</sup>

Apparently, the work-from-home movement needed a social catalyst like COVID-19. A significant share of employees is expected to still work from home after the virus recedes. Greater flexibility, the ability to care for children, relief from micromanagement, and the elimination of the daily commute make for compelling benefits. Hence, according to Deutsche Bank, almost half of people believe that, once things are back to normal, they will work from home at least one day per week, with 60% of survey participants believing that they are at least as productive at home as they are in the office.<sup>50</sup>

This shift is not expected to reverse urbanisation but will limit or at least reshape its further advance. Companies will continue to need offices to onboard recruits, monitor certain aspects of performance, foster relationships, and nurture the creation and sharing of knowledge and innovation. Even in light of the lessons learned from COVID-19, urban density itself is not necessarily a (health) problem per se, if, for example, it facilitates investments in sanitation and superior healthcare and more proximity for the provision of care.<sup>51</sup> Therefore, post-pandemic, there will be a greater differentiation between cities that are merely aggregations of economic activities versus genuinely smart cities where people choose to live. However, in return for the convenience and efficiency that smart-city technology brings, city inhabitants must be willing to share their data for sensors and big data across infrastructure, buildings, energy, waste and water management.<sup>52</sup> In addition, smart cities will give rise to new vulnerabilities and threats, including making city infrastructure and services insecure, brittle, and open to extended forms of criminal activity.<sup>53</sup>

44. Brunnermeier and Krishnamurthy 2020.

45. Rose 2020.

46. Ibid and WEF 2020a.

47. Cairncross 1997.

48. WEF 2020b.

49. Gabe and Abel 2011.

50. Deutsche Bank 2020.

51. Florida 2020.

52. MSCI 2020; Pictet 2020.

53. Kitchin and Dodge 2019; The Geneva Association 2021b.



## Rising social inequality

Another implication of COVID-19 will be a protracted period of higher social inequality.<sup>54</sup> Recessions have always been particularly painful for the poor and unskilled. Furceri et al. present evidence that major epidemics since the middle of the 20<sup>th</sup> century have raised income inequality and hurt employment prospects of those with only a basic education while scarcely affecting employment of people with advanced degrees.<sup>55</sup> As shown by Shibata and Oxfam, for example, COVID-19-induced job losses, especially in the U.S. and the U.K., have heavily affected service workers who are more likely to be young, female and non-white.<sup>56</sup> In addition, the long-term effects of lockdown-induced disruptions to education are also expected to exacerbate social inequality, as they primarily affect children with limited opportunities for home-schooling.

Stiglitz suggests that the pandemic will exacerbate social inequality also as a result of fundamental corporate sector responses.<sup>57</sup> An increasing awareness of disruptive risk and vulnerability will mean that certain activities, goods, services and production processes will be viewed as riskier and costlier. Therefore, the pandemic augments the threat from automation to low-skilled, person-to-person service workers.<sup>58</sup> The demand for certain types of labour will decrease.<sup>59</sup>

Having said this, the shift to remote working will also fuel economic growth. Anyone with an internet connection will become part of a vastly increased pool of candidates, enabling better matches between employers and employees and unleashing sizeable productivity gains, which, however, could hurt high-income countries.<sup>60</sup>

*"I believe that post-pandemic there will be greater calls for a more social economy in many countries, underpinned by strengthened social safety nets. Some of the changes will be positive but my fear is that many will be left behind. For many developing countries COVID has been a significant setback and this could lead to even further polarisation and inequality. This is itself a risk for all."*

**Ekhosuehi Iyahen**

Secretary General, Insurance Development Forum



## Erosion of privacy

With the roll out of track-and-trace apps to help contain COVID-19, concerns were growing about a potential erosion of privacy. However, based on experience over the last century, one can view privacy as a currency which can buy benefits such as security, prosperity and, in the wake of the pandemic, health. The internet, email and smartphones epitomise this trade-off, enabling billions of people.<sup>61</sup> One can argue that the trade-off of privacy for freedom and progress was a net benefit to many people's lives, further enhanced by track-and-trace apps' facilitation of longer, safer and healthier lives. 'Indeed, just one generation from now, people may no longer understand why today's debate occurred at all. The benefits will be obvious and societal norms will have evolved'.<sup>62</sup>

Having said this, the exponentially growing online storage of data comes with daunting challenges. Hacking incidents have exploded during the pandemic and perpetrators can be physically based anywhere in the world. Therefore, the potentially global scale of sensitive data losses adds to privacy concerns and affects the trade-off between privacy and enablement.<sup>63</sup>

*"The importance and customers' awareness of personal data have further increased. Insurers can capitalise on their reputation as reliable custodians of personal data and accelerate their own efforts to build and orchestrate wider customer ecosystems around mobility, health and homes."*

**Professor Fred Wagner**

Institut für Versicherungswissenschaften,  
Universität Leipzig

54. AXA 2021.

55. Furceri et al. 2020.

56. Shibata 2020; Oxfam 2021.

57. Stiglitz 2020.

55. WEF 2020a.

59. ILO 2020.

60. OECD 2020a.

61. Deutsche Bank 2020, GSMA 2020.

62. Deutsche Bank 2020.

63. G20 2020.

# The baseline scenario's relevance for insurance

From our baseline scenario and in-depth executive and expert interviews, we derive that accelerated digitalisation, 'Big Government', the shift towards more resilience and sustainability as well as the increasingly remote nature of work are among the developments likely to have a particularly significant effect on insurers in the post-pandemic world.<sup>64</sup>

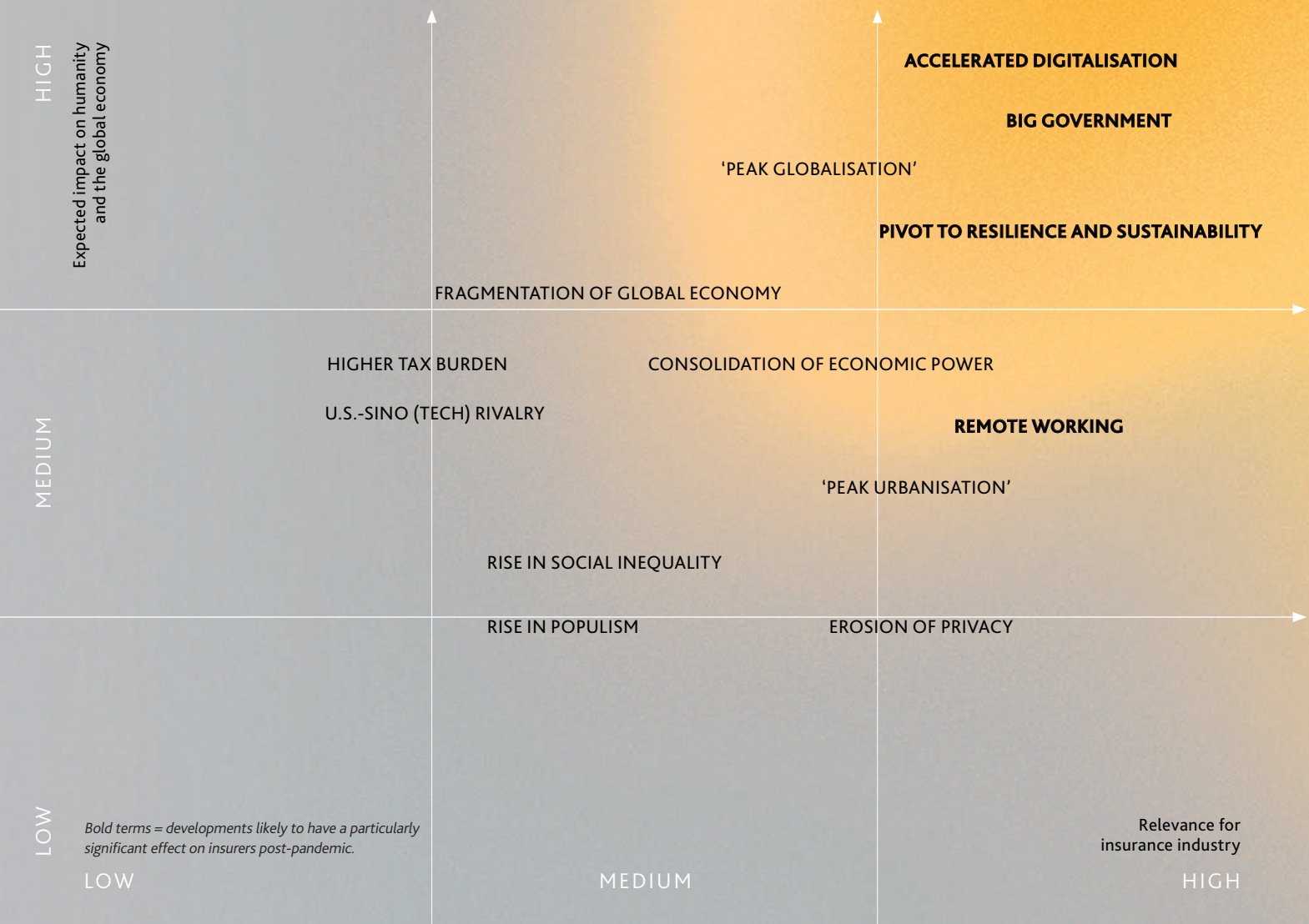
*"The pandemic-induced shift to digital ways of living and working will change the preferences of insurance customers for good. They will be more receptive to innovative, simpler and more appealing solutions, such as pay-as-you use and embedded insurance covers. Embracing these shifts will enable insurers to boost historically low levels of customer engagement and facilitate the industry's perennial efforts to narrow protection gaps, both in mature and emerging economies."*

**Jean-Jacques Henchoz**  
CEO, Hannover Re

64. For the sake of focus, the two alternative scenarios will not be specifically explored from an insurance angle.

Figure 4

Source: The Geneva Association



# Risks of accelerated digitalisation

The pandemic has forced companies to move business models online and remote almost overnight. At the same time, rapidly changing customer habits and expectations are necessitating the acceleration of digitalisation strategies. As a result, organisations are exposing themselves to significantly more digital risk that is inextricably linked to the adoption of new technologies.

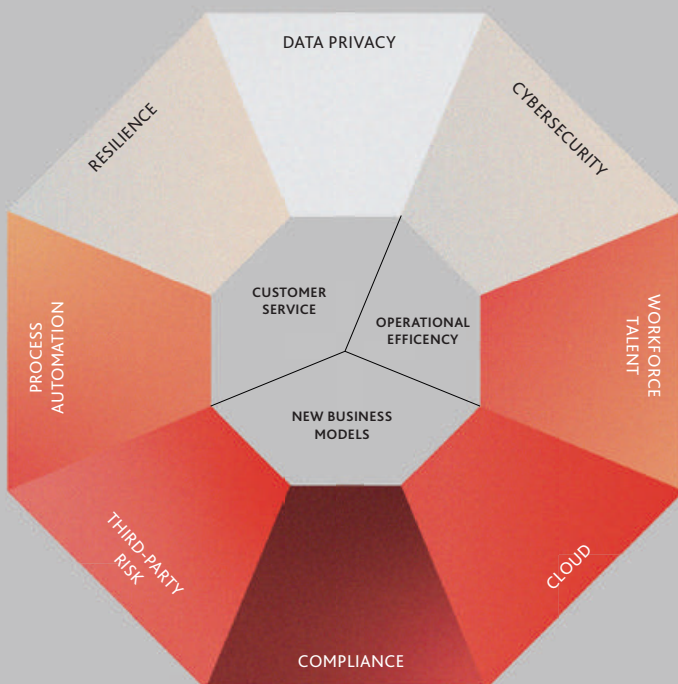
We can classify digital risks on the basis of strategic business objectives, such as enhancing operational efficiency, embracing new business models and improving customer service (see Figure 5).

*“Society’s sudden sensitivity to risk has accelerated the need for practical insurance protection, including digital insurance. In the first three quarters of 2020, the number of active Chinese users of insurance via mobile channels grew by 30% to more than 75 million, contributing to the insurance industry’s overall resilience.”*

**JIANG Xing**  
CEO, ZhongAn Online P&C Insurance

Figure 5: The digital risk octagon

Source: RSA,<sup>65</sup> adapted by The Geneva Association



65. RSA 2019.

66. Ibid.

67. Swiss Re 2018.

68. Aon/Ponemon Institute 2018.

69. Eling and Lehmann 2018.

*“One challenge for insurers related to the shift to remote working is the more difficult assessment of workers compensation claims. Another is the increased exposure to cyber risk as employees’ infrastructure at home may be more vulnerable to data breaches, for instance.”*

**Professor Mark J. Browne**

Chair of the Faculty of Risk Management, Insurance and Actuarial Science, School of Risk Management, Tobin College of Business at St. John's University

## Risks from operational efficiency drives

Cybersecurity risk refers to the risk of cyberattacks, which are often (and increasingly during the pandemic) aimed at accessing sensitive information and then using it for malicious purposes, such as extortion and deliberate disruption of business processes. Another risk emanating from operational efficiency objectives is workforce risk. It captures an organisation's exposure to skill shortages and high employee turnover, exacerbated by the gig economy.

## Risks from the adoption of new business models

Cloud risk (excessive reliance on cloud service providers) can arise from the implementation and deployment of new digital business operations, as expedited by the pandemic. Compliance risk comes from any new requirements or rules needed for a new technology, e.g. data retention. Third-party risk is associated with outsourcing activities or processes to third-party vendors or service providers (intellectual property and data, for example).

## Risks from customer satisfaction measures

Automation drives, widely expected to gain momentum post-pandemic, can come with risks such as compatibility problems with other technology and governance. Resiliency risk refers to the availability of business operations, especially after disruptive events such as cloud provider outages. Data privacy risk relates to an organisation's potential inability to protect sensitive data such as email addresses and passwords.<sup>66</sup>

While these risks gain traction, digitalisation is reshaping the way economic value is created. New business models such as the sharing economy rely on intellectual capital rather than bricks-and-mortar. Such businesses require new and innovative commercial insurance offerings which, at times, hit the traditional boundaries of insurance. On the other hand, advances in data availability, analytics and modelling help shift these boundaries, making previously uninsurable exposures, such as supply chain and cyber risks, product recalls and reputational damage, at least partially insurable.<sup>67</sup> The potential and need for a higher insurance penetration in intangible assets is striking. For example, according to a global survey,<sup>68</sup> companies have cover for just 15% of their potential cyber losses, compared to 59% for property, plant and equipment exposures.

The accelerated rise of the Internet of Things (IoT) is presenting the insurance industry with new strategic options in terms of progressing from pure risk protection towards predicting and preventing risks. IoT enables new types of risk coverage that were previously not feasible due to information constraints. As such, it can create new markets for risks that are currently underinsured (e.g. cyber) or uninsurable.<sup>69</sup>

# 'Big Government'

Massive government stimulus and relief programmes may have a negative impact on insurance demand as they fuel people's perceptions that if a truly disastrous pandemic event occurs, governments will intervene and provide disaster assistance.<sup>70</sup> Using the example of U.S. public flood assistance, Kousky et al. show that public-sector relief schemes can crowd out private insurance solutions.<sup>71</sup> The authors find that a USD 1 increase in average aid grants decreases average insurance coverage by about USD 6.

In order to alleviate the rapidly growing burden of sovereign debt, governments might be tempted to condone higher levels of inflation. History offers some lessons. From the late 1940s to the 1970s, low nominal interest rates helped reduce debt servicing costs for the governments of rich countries. At the same time, a high incidence of negative real interest rates as a result of inflation eroded the real value of government debt.<sup>72</sup>

The adverse consequences of inflation for insurers are well researched. In addition to the impact of inflation on the cost of future claims on current policies, property & casualty insurers are also likely to experience adverse development on loss reserves if inflation increases, with a negative impact on solvency.<sup>73</sup> In life insurance, inflation erodes the current value of fixed future payments, creating a disincentive for life insurance purchases and prompting an increase in lapse rates.<sup>74</sup> Demand is set to fall as customers become reluctant to lock in for the long term. Another negative impact of inflation is on the investment portfolio. As noted long ago by Fisher,<sup>75</sup> interest rates and inflation are closely related, as investors expect a real return, in excess of inflation, to compensate for foregoing current consumption. An increase in interest rates in the wake of rising inflation erodes the value of long-term fixed income securities which dominate insurers' investment portfolios.<sup>76</sup>

Another adverse impact on insurance has been noticeable for quite some time now – financial repression defined as 'governments' use of monetary policy and market intervention to influence how capital is allocated'.<sup>77</sup> Financial repression reached a new high in Q1 2020, driven by massive 'whatever it takes'-type monetary policy responses to the

COVID-19 pandemic. As a result, interest rates have been pushed further down. In tandem, risky financial assets continued to gain in value, increasingly decoupled from real economy conditions. Swiss Re estimates that 'U.S. households have sacrificed USD 160 billion per year on average since 2008 from lost interest income on deposits, pensions and life insurance assets.<sup>78</sup> This equates to a net 'tax' of about 3.5% on U.S. households' disposable income each year'. During the same period, long-term investors such as U.S. insurers and pension funds have forgone, on average, USD 185 billion of yield income per annum, equivalent to about 1.5% of their total fixed income investments.<sup>79</sup> More worrisome is the risk that continued financial depression will permanently erode life insurers' unique role in delivering retirement savings solutions with asset protection, which will further exacerbate current and future protection gaps.<sup>80</sup>

Having said this, there are doubts as to the longer-term sustainability of 'Big Government'. As soon as the pendulum swings back (again) there might be additional opportunities for insurers in providing risk protection.

70. Hartwig et al. 2020.

71. Kousky et al. 2017.

72. Reinhart and Sbrancia 2011.

73. Ahlgrim and D'Arcy 2012.

74. Li et al. 2007.

75. Fisher 1930.

76. Ahlgrim and D'Arcy 2012.

77. Swiss Re 2020c.

78. Ibid.

79. Ibid.

80. The Geneva Association 2017.





# Pivot to resilience and sustainability

COVID-19 has served as a wake-up call, exposing protection shortfalls affecting people's livelihoods, lives and health. At the same time, businesses have realised how efficiency drives in dealing with suppliers, customers and employees can breed vulnerability and fragility.

For insurers, this heightened awareness represents a major opportunity to build resilience by addressing protection gaps for the three major insurable risks society is facing: property, mortality and health. Swiss Re estimates the combined extent of these shortfalls at USD 1.2 trillion, expressed in premium equivalents.<sup>81</sup> That is equivalent to a quarter of all premiums written by the global insurance industry in 2018.<sup>82</sup> Figure 6 shows that the healthcare protection gap is by far the biggest challenge, followed by mortality and property protection shortfalls. Emerging Asia exhibits the largest aggregate protection gap for the three risk areas, accounting for almost 40% of the global shortfall.

Closing these gaps would improve global financial resilience against natural catastrophes, the premature death of the main breadwinner, and catastrophic medical expenditure by more than USD 1 trillion each year in the form of average insurance claims pay-outs for covered events. The pandemic has also exposed newer and rapidly-emerging commercial protection gaps that insurers need to tackle, including cyber, intangible corporate assets and business interruption (BI).<sup>83</sup>

The pandemic has catapulted business interruption, including supply chain disruption, to the forefront of corporate risk management priorities.<sup>84</sup> Insurance can be an integral part of managing supply chain risks in the global economy. Traditional BI insurance offers protection against the risk of disruptions as a result of physical damage at a manufacturer. More relevant in the context of COVID-19 and from the angle of resilience and sustainability, contingent business interruption (CBI) risk emanates from property risks of external parties such as suppliers. CBI insurance covers the extra expenditure incurred and profits lost due to disruptions at a third party's premises. The need for such coverage was highlighted in 2011 when the Tohoku earthquake and tsunami as well as the Thailand floods hit.

Such coverages, however, present major risk management challenges (accumulation in particular) for insurers which require innovative approaches.<sup>85</sup>

More generally, many governments are committed to 'Building Back Better', i.e. deploying recovery and stimulus funds to promote resilience and sustainability. OECD suggests that governments align their economic recovery goals with science-based carbon emissions reduction targets, improvements to circular supply chains and investment in decentralised, renewable electricity systems.<sup>86</sup> The same study also highlights the importance of well-being, inclusiveness, and accessibility to decisions related to the allocation of funds. Insurers can contribute significantly to achieving these objectives, not only as major institutional investors but also through 'impact underwriting' designed to shift non-sustainable behaviour and processes in a more sustainable direction, e.g. through underwriting renewable energy, alternative mobility and a more sustainable lifestyle.<sup>87</sup>

*"As major institutional investors, life insurers have the power to realise a sustainable society via proactive dialogues with companies they invest in. After COVID-19 more insurers will consider a commitment to ESG criteria a societal obligation, rather than a mere opportunity."*

**Hiroshi Shimizu**  
President, Nippon Life

81. Swiss Re 2019.

82. Ibid.

83. OECD 2020b.

84. Allianz 2021.

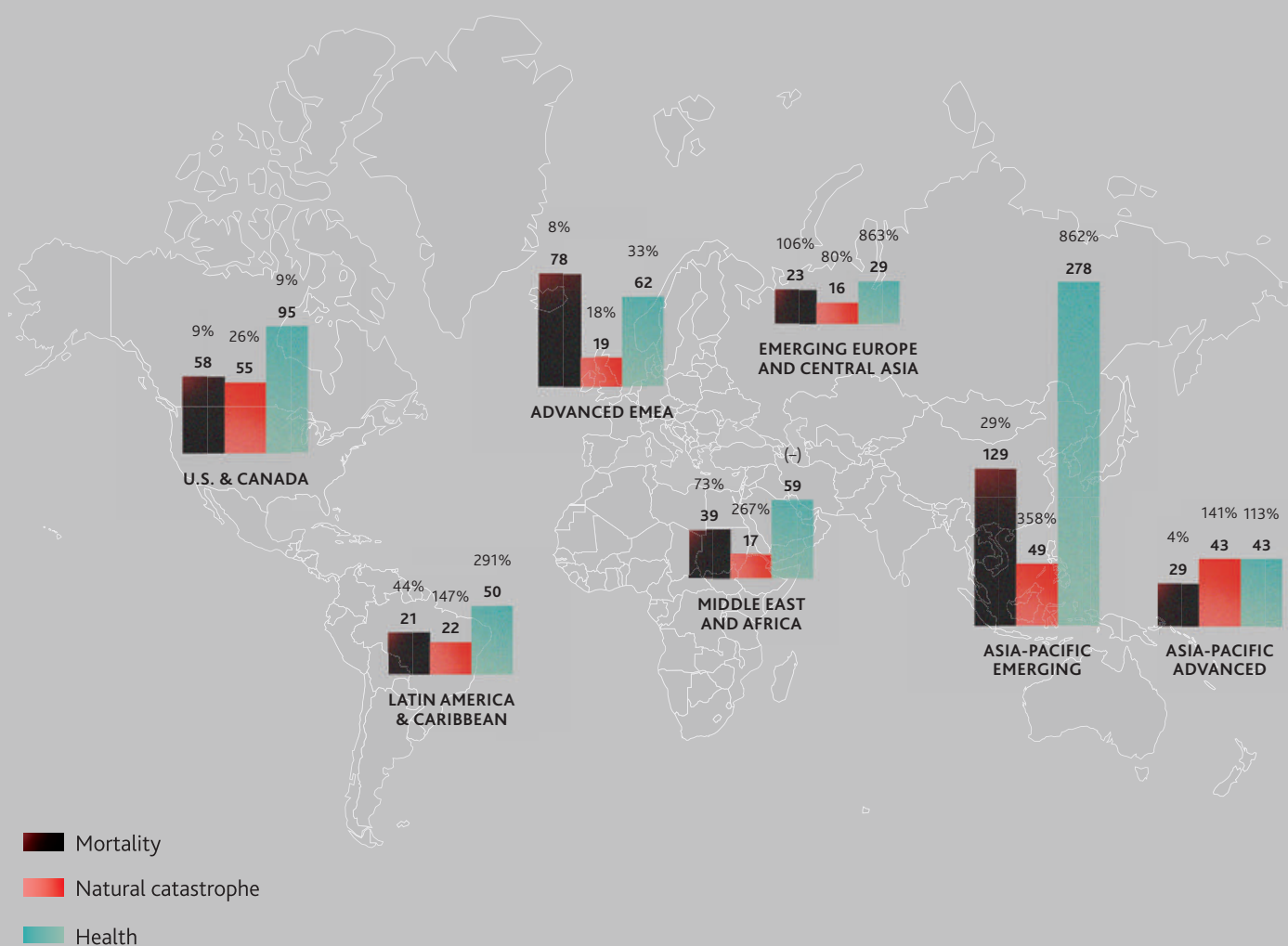
85. SCOR 2013.

86. OECD 2020c.

87. Euler Hermes 2020.

88. Swiss Re 2019.

Figure 6: Protection gaps in USD billion premium equivalent terms and as % of direct premiums, by region, 2018



Source: Swiss Re. <sup>68</sup> (The numbers in parentheses refer to protection gaps as a percentage of total direct premium written for the respective line of business. For mortality it refers to the whole life market, including savings premiums; for property catastrophe it relates to all property premiums. The global protection gap in 2018 for mortality risk was 14% of total direct premiums written. For natural catastrophe risk it was 56%, and for healthcare 46%.)



# COVID-19, the most important event in the history of insurance?

## WELLNESS, THE UNDISPUTED KEY CONCEPT

*"COVID-19 may prove the most important event in the history of insurance. Wellness has emerged as the undisputed key concept in life and health insurance. Insurers who embrace more partnership-oriented relational business models will be best positioned to meet customers' and other stakeholders' evolving needs and expectations."*

**Stuart A. Spencer**

Chief Marketing Officer & Member of the ExCo, AIA

## IS GROWING DIGITALISATION AN OPPORTUNITY OR A CHALLENGE?

*"The pandemic has catapulted the digital way of doing business to mainstream. For insurers, this shift comes with a wealth of opportunities, from capturing much-needed efficiency gains to redefining customer engagement and experience. However, the digital-enabled availability of personal data presents major challenges, too. It could, for example, undermine risk pooling, the 'democratic' core of insurance, and its crucial role as a social buffer."*

**Bruno Scaroni**

Chief Transformation Officer, Generali

## TOWARDS AN INTERNALISATION OF SYSTEMIC RISKS?

*"Going forward, households, businesses and governments will be more likely to 'internalise' systemic risks such as future pandemics and the looming climate and pension crises. Insurers will have a key and very positive role to play in accompanying this shift, as risk absorbers, risk advisors and as capital investors."*

**Jerome Haegeli**

Chief Economist, Swiss Re

## DESIGNING OPTIMAL RISK SOLUTIONS TO FUTURE SYSTEMIC EVENTS

*"Insurers need to carefully balance the insurability challenges presented by systemic pandemic and other systemic risks with the need to maintain some 'skin in the game'. Doing this successfully requires a more proactive industry approach towards governments and other stakeholders to designing the optimal risk solutions to future systemic events."*

**Mamiko Yokoi-Arai**

Deputy Head of Financial Markets Division,  
Head of Infrastructure and Alternative Financing, OECD

## EXPANDING ALREADY-EXISTING TOOLS TO PREVENT SYSTEMIC RISKS

*"The pandemic has drastically shown the systemic character of certain global loss scenarios. Insurers and governments should work together to expand already-existing tools of public-private partnerships and especially develop pool solutions for pandemic risks, but also with regard to cyber risks (e.g. for infrastructure failure)."*

**Michael Menhart**

Chief Economist, Munich Re

# Remote nature of work

An increasing number of companies are implementing a shift to remote work for their employees. This shift has implications for a company's risk exposures in a variety of areas and requires amendments to existing insurance coverages. One area is cyber insurance, which is gaining in importance as companies and their dispersed networks operating on home systems grow more vulnerable to hacks, for example. Figure 7 illustrates this heightened level of vulnerability, using as an example ransomware – a type of malicious attack where a criminal encrypts sensitive files and threatens to publish them unless a demanded ransom is paid. These attacks reached record-highs in 2020 as employees shifted to remote work, creating more attack vectors for hackers. Atlas VPN analysis based on Coveware's data found that average ransom payouts almost tripled in Q3 2020 compared to Q4 2019, as cybercriminals expect larger payouts when targeting (remote workers at) bigger companies or stealing extremely sensitive information such as financial details or policy reports.<sup>89</sup>

Given the scale and dynamics of cyber exposures, the global cyber insurance market has much room for expansion. Its size is currently an estimated USD 6–7 billion (see the projections in Figure 8, which do not yet incorporate the surge in demand following COVID-19), comprising less than 0.5% of the world's P&C insurance market.<sup>90</sup> These estimates generally only capture affirmative (standalone) cyber insurance coverage. The relatively small market size reflects major challenges for cyber insurers in measuring risk exposures and loss accumulation.<sup>91</sup>

Another area that needs adjustments in coverage as a result of remote working is general and employers' liability insurance. Coverage for injury to workers often depends on the categorisation of the worker (e.g. employee versus independent contractor), the location of the injury, or the activity the worker is engaged in at the time of injury. With remote working, some of these lines are blurring. Insurers should assist their customers in ensuring that the definition of covered workers under their employers'

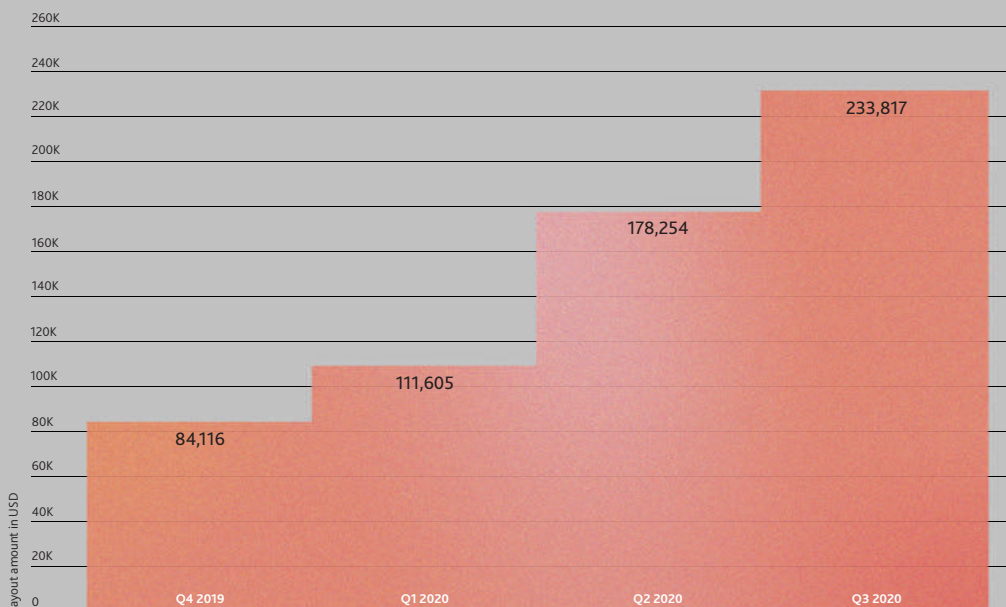
liability policy includes all workers to whom the company may be found liable. The same applies to the coverage territory, given the fact that employees may work abroad for an extended period of time.

Property insurance, too, has seen major coverage issues arising from COVID-19. Going forward, companies embracing a remote workforce may have less exposure to property damage but, as the pandemic has highlighted, need to pay more attention to business interruption losses. Companies will demand coverages that include the property used by workers at remote locations, for example.

More generally, Euler Hermes argues that in the area of remote work, too, insurance is moving from being a hedge against risks to being a driver of sustainable practices.<sup>92</sup> Through 'impact underwriting' insurers can play a role in facilitating the new work environment by reducing implementation barriers resulting from risk aversion and supporting the transition to the sharing economy. Examples include premiums that incentivise ergonomic home offices or insurance policies that include prevention and advisory offerings (also relating to the implementation of cybersecurity standards at home).<sup>93</sup>

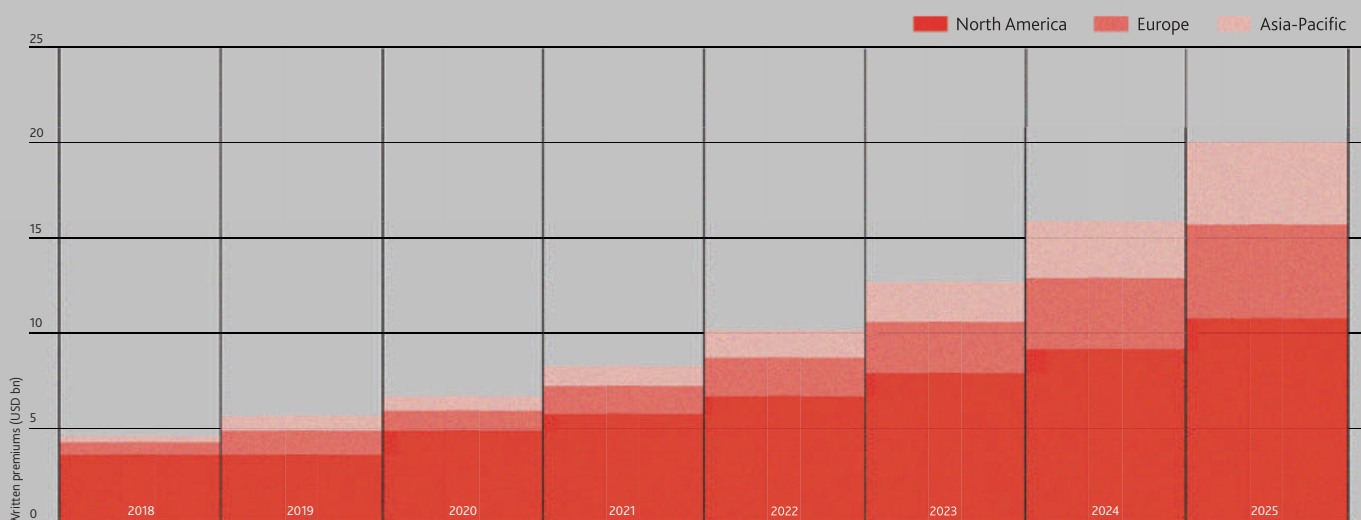
Another major task ahead is to harness insurers' expertise for mitigating risks to individual well-being and mental and physical health. In a study of 1,500 workers in 46 countries by the Harvard Business Review, 85% of people said their well-being had declined and 55% felt they had not been able to balance their work and home lives.<sup>94</sup> In a survey of remote workers in Italy, 50% reported greater neck pain and 38%, increased lower-back pain, as their home furniture is not designed to accommodate extensive computer use.<sup>95</sup> These health developments are expected to accelerate insurers' transition from risk transfer-centric business models to broader propositions that prioritise risk prediction and prevention.<sup>96</sup>

Figure 7: Average ransom payouts in the U.S.



Source: Atlas VPN

Figure 8: Projected growth in cyber insurance market (2018–2025)



Source: IAIS,<sup>97</sup> based on Munich Re estimates

89. Atlas VPN 2020.  
 90. McKinsey 2020c.  
 91. IAIS 2020.  
 92. Euler Hermes 2020.  
 93. Ibid.  
 94. Moss 2021.  
 95. Moretti et al 2020.  
 96. AXA 2020.  
 97. IAIS 2020.

# Interviews



## Oliver Bäte

CEO, Allianz

The pandemic has taught us many valuable lessons – in particular that societies and countries are far more vulnerable and dependent on each other than previously expected. In a sense, it has also reminded us of what we can accomplish when we work together and act in a creative and agile manner. This will stick with us post-COVID-19 and will impact our future actions.

### **What are the most important uncertainties for societies and economies in the post-pandemic world?**

One key question from a macro-perspective is whether governments and central banks are able and willing to go back to the status before the crisis. Can public debt at peak levels be reduced while urgently needed investments in education, sustainability and technology have to be made at the same time? This will be a big challenge. I tend to be more optimistic on private consumption returning to pre-crisis levels, though this will depend on the degree to which behaviour will revert to pre-COVID status. Psychological aspects will play an important role and are difficult to predict.

*"Can public debt at peak levels be reduced while urgently needed investments in education, sustainability and technology have to be made at the same time? This will be a big challenge."*

### **How will the pandemic impact the (insurable) risk landscape and the needs of insurance customers?**

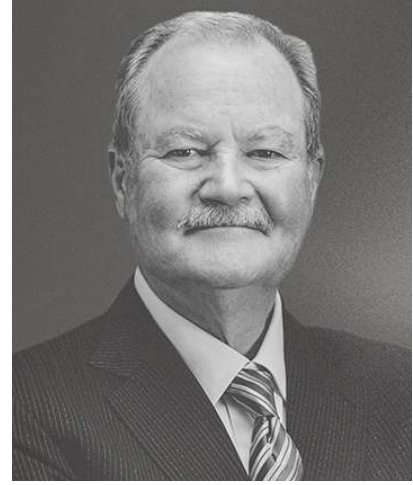
The pandemic has shown that some risks are in fact very real, and has highlighted the importance of risk mitigation and management. From this point of view, the crisis offers opportunities for insurers. However, it has also become clear that not all risks are insurable, similar to other non-diversifiable risks such as large-scale cyberattacks. For some risks, there is a gap between what insurers are able to insure and what clients and society expect us to cover.

*"It has become clear that not all risks are insurable. For some risks, there is a gap between what insurers are able to insure and what clients and society expect us to cover."*

### **How should the insurance industry respond to these changes?**

Our industry needs to be much more digital and become more customer centric. To avoid false expectations, insurers have to clearly communicate which risks are covered and which are not; contracts need to be much simpler and more accessible.





## Brian Duperreault

### Executive Chair of the Board, AIG

COVID-19 has accelerated many societal, economic and political trends, though it was not the root cause of these shifts. As medical and scientific advances create a clearer path forward, governments, businesses and society are evolving their long-term approaches to these changes in day-to-day life and health crisis preparedness. Insurers will play an important role in supporting risk mitigation efforts associated with this transformation.

#### What have been the major effects of COVID-19 on individuals, businesses and governments so far, and how have they responded?

COVID-19 has forced governments and society to recalibrate the way they view and value resilience and preparedness for severe health crises.

National emergency health plans, national stockpiles of PPE, global supply chains, and fiscal and monetary intervention protocols were all challenged. As a result, there has been a wider-spread acceptance of the massive scale and severity of the risks posed by health crises. New government departments are being created to address and prepare for pandemics now and in the future, and communities and individuals are more in tune to health and safety risks. From a business perspective, the importance of agility and adaptability was proven, and many heavily impacted businesses developed innovative ways to continue trading through a lockdown.

*“COVID-19 has forced governments and society to recalibrate the way they view and value resilience and preparedness for severe health crises.”*

#### Which fundamental and longer-term changes do you expect to see as a result of the pandemic?

The major shifts we anticipate may have been in motion prior to the pandemic, but they were progressing at a slower pace and were less well-defined. The world was forced into new ways of living, working and leading. Many of these changes will continue

to influence the landscape in a way that requires the strong support of insurers’ risk expertise.

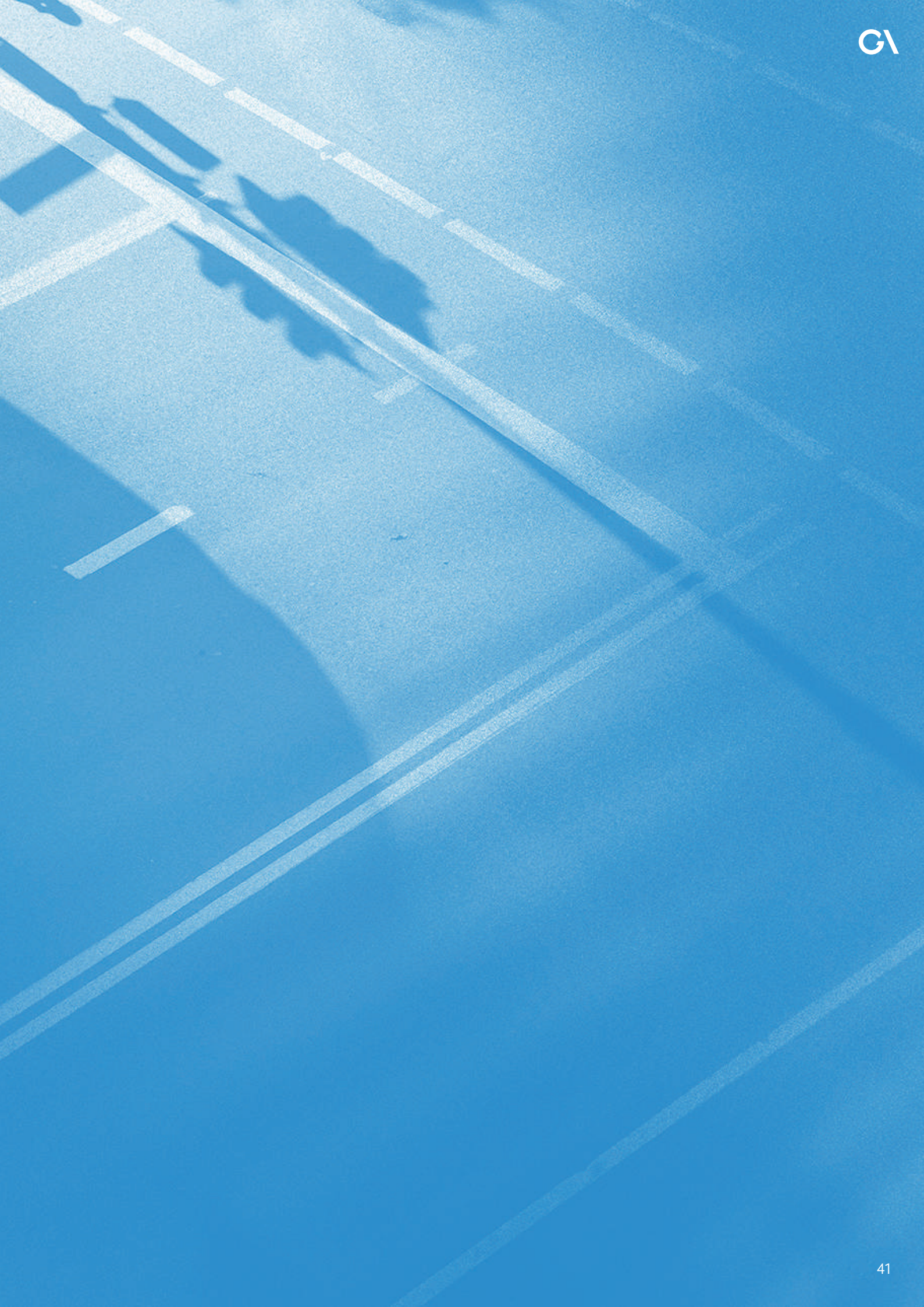
For example, the world had been slowly moving towards increased digitalisation, but as economies shut down, many individuals, businesses and governments were forced to adapt to digital solutions at unprecedented speeds.

The future of work will also likely be very different as employers and employees renegotiate the traditional working ‘contract’ to allow for more flexibility, which will result in employers reassessing their levels of risk exposure, especially related to cybersecurity.

*“The world was forced into new ways of living, working and leading. Many of these changes will continue to influence the landscape in a way that requires the strong support of insurers’ risk expertise.”*

Finally, we expect to see an increase in preparedness by businesses, the healthcare industry and global governments. Businesses will look at the volatility of their supply chains and governments will focus more on inward preparedness alongside global coordination.

# The alternative scenarios



*“Post-pandemic, governments’ policymaking will be more science-based and health-oriented, and the public will have higher requirements for governments to balance pandemic control and socio-economic development. Economies will be more domestic-oriented and less reliant on international trade, particularly for large economies; on the micro level, businesses will be more risk-management-oriented rather than purely pursuing growth objectives.”*

#### ZHENG Wei

Lloyd’s Chair Professor and Chairperson of Department of Risk Management and Insurance at School of Economics, Peking University

## Emerging stronger

An alternative scenario is for economies and societies to rapidly shake off memories of the pandemic, accompanied by a broad-based adoption of more resilient and sustainable patterns of policymaking, conducting business, working and living. We assign a 15% probability to this outcome.

Under this scenario, COVID-19 will be globally defeated by the end of 2021. Vaccine education and encouragement is assumed to be effective, as will the preparation and roll-out of vaccine logistics.<sup>98</sup>

Economies will return to their pre-pandemic growth trajectories. Fiscal and monetary emergency measures will be phased out and, in the presence of tolerable levels of inflation, central banks start to raise interest rates without choking off the economy. The economy is expected to benefit from a structural boost in the wake of surging green energy investments. The Cambridge Institute for Sustainable Leadership (CISL), for instance, provides evidence of what green recovery policies can achieve in Europe.<sup>99</sup> The results show the identified Green Recovery Plan as consistently more favourable than other options in terms of boosting GDP and employment, as well as contributing to additional reduction in CO<sub>2</sub> emissions. Another structural boost to the economy will arise from the much-accelerated and sustained adoption of digitalisation during the pandemic. For example, Gal et al. provide robust evidence that digital adoption in an economy or even a particular industry is associated with productivity gains at the firm level.<sup>100</sup> The pandemic will have unleashed the (digital) technologies which during the 2010s surprisingly and disappointingly did not translate into measurable productivity gains.<sup>101</sup> Also, businesses have demonstrated increasing levels of economic adaptability during the course of the pandemic which could help economies’ overall resilience going forward (see World Bank 2014 for the underlying reasoning).

Urban centres will recover rapidly from the pandemic-induced slowdown and continue to generate enormous economies of scale and be highly effective incubators of creativity and innovation.<sup>102</sup> At the same time, cities will emerge much ‘smarter’ from the pandemic, integrating information and communication technology with various physical devices connected to the IoT in order to optimise the efficiency and sustainability of city operations and services.<sup>103</sup>

With normalising monetary policies, the gulf between ‘Wall Street’, i.e. financial markets, and ‘Main Street’, i.e. the real economy, will narrow. Excessive returns on risky assets will vanish and wages and returns on savings will recover in the wake of sustained economic growth and rising interest rates.<sup>104</sup>

On the international policy front, the U.S. and China will return to the path of pragmatic collaboration, akin to a strategic competition rather than a bitter rivalry, based on an agreement on future trade and technology relations, including sensitive matters such as intellectual property.<sup>105</sup> The multilateral trading system will experience a revival, facilitated by the Biden administration and orchestrated by the new Director General of the World Trade Organization (WTO).<sup>106</sup>

98. Oliver Wyman 2020.

99. CISL 2020.

100. Gal et al. 2019.

101. Syverson 2018.

102. Garrett 2020.

103. MSCI 2020.

104. O’Farrell et al. 2016.

105. Hass et al. 2020.

106. Evenett and Baldwin 2020.

# A more optimistic outlook

Figure 9



# A more pessimistic outlook

Figure 10



# Protracted fragility

A second alternative scenario, to which we also accord a 15% probability, envisages setbacks in the efficacy and distribution of vaccines, resulting in further waves of high infections and concomitant lockdowns. As a result of mutations of the virus, vaccines will fall short of expectations and the duration of immunity will turn out to be shorter than expected.<sup>107</sup>

A prolongation of the 2020 global economic downturn will increase the likelihood of a severe global credit crisis. High leverage on the eve of the pandemic has left the balance sheets of the corporate sector vulnerable. Companies in the U.S. and China, the world's two largest economies, are particularly highly indebted.<sup>108</sup> With ballooning fiscal deficits and central bank balance sheets, governments and monetary authorities will find it increasingly difficult to stabilise the corporate sector through effective relief and stimulus measures.<sup>109</sup>

The prevalence of protectionist measures worldwide will significantly reduce the growth potential of the global economy over the longer term. More inward-looking economic policies in combination with the dismantling of global supply chains are set to increase businesses' input costs, raising the prospect of stagflation, i.e. a surge in inflation in the absence of economic growth. At the same time, as the tech rivalry between the U.S. and China intensifies, global technology standards will further fragment, impeding the diffusion of technological advances and weighing on productivity.<sup>110</sup>

The prolonged economic downturn and elevated levels of unemployment will usher in an era of exacerbating social inequality, increasing political polarisation, a weakening social fabric and, possibly, social unrest.<sup>111</sup> It will also herald worsening intergenerational dynamics as the young will be disproportionately affected. This is particularly true for Generation Z and those who seek to enter the workforce for the first time in the early 2020s.<sup>112</sup>

Citizens will have lost confidence in government abilities to address the problems exposed by COVID-19. Also, in light of the protracted economic malaise, environmental decisions hold less sway in consumers' purchasing decisions, delaying the transition to a carbon-neutral economy. As nation states turn inwards, multilateralism will disintegrate, meaning little or no progress in tackling global problems like climate change and environmental degradation.<sup>113</sup>

107. Amundi 2020.

108. Reinhart 2020.

109. Swiss Re 2020a.

110. Pictet 2020.

111. Qureshi 2020.

112. Allianz 2020; Mendoza 2020.

113. Pictet 2020.

# The voice of insurance customers – Findings from a global survey

To complement our desk research and in-depth executive and expert interviews, The Geneva Association commissioned a global survey of insurance customers.

To discover our entire survey, please refer to the appendix.



# 8



markets: **Brazil, China, France, Germany, Italy, Japan, U.K. and U.S.**

# 7,200

**retail customers**

# 800

**small business customers**  
(businesses with less than 50 employees)

# Which trends will continue/gain further momentum post-pandemic?

RETAIL AND SMALL BUSINESS CUSTOMERS



## #1 Remote working

- #2 Shift to digital
- #3 Social inequality
- #4 Increased cyber risk

# Which situations are you most concerned about experiencing in the future?

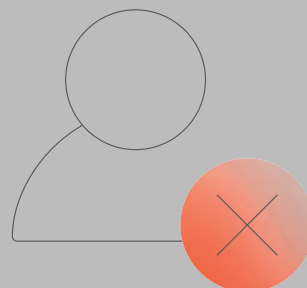
 RETAIL CUSTOMERS

 SMALL BUSINESS CUSTOMERS



## #1 Extended hospitalisation

- #2 Deteriorating personal financial situation
- #3 Critical illness



## #1 Having to let go or furlough employees

- #2 Deteriorating financial situation of business
- #3 Having to close business

Based on a specific interaction with your insurer during the pandemic, how would you rate your experience?

**83-88%**

of retail respondents  
and

**70-97%**

of small businesses

**report a positive experience during the pandemic**

*Percentages reflect the range of responses received across the 8 countries surveyed*

## Responsiveness of insurers is the most frequently mentioned type of positive experience

**ON THE EFFECTIVENESS OF BUSINESS INTERRUPTION COVERAGE FOR SMALL BUSINESSES:** With 100% of respondents in China and Japan saying coverage worked as expected, effectiveness ratings stand out. At 62% and 59%, respectively, U.K. and French small business owners are at the other end of the spectrum, reflecting numerous coverage disputes since the onset of the pandemic.

# Which insurance products do you plan to buy more of, among those you consider more important post-pandemic?

## Importance of insurance post-pandemic

Retail and small business customers in China and Brazil were the most positive about insurance, suggesting a major shift in risk awareness.



### RETAIL CUSTOMERS

- #1 Private health insurance (22%)
- #2 Life insurance (21%)
- #3 Travel insurance (15%)



### SMALL BUSINESS CUSTOMERS

- #1 Business interruption (26%)
- #2 Group life and health insurance (25%)
- #3 Liability insurance (23%)

## Focus

Despite an increased awareness of cyber risk only 10% of retail respondents intend to buy more cyber insurance, illustrating the challenges of offering this coverage to non-commercial customers.

## Why customers do not plan to purchase (more of) the insurance product

### RETAIL AND SMALL BUSINESS CUSTOMERS

# 85-88%

have other priorities, insurance not on top of mind

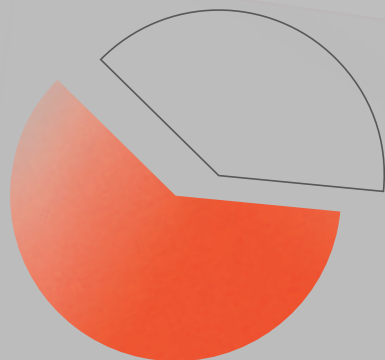
# 65-73%

have doubts as to whether the policy would pay out when it is supposed to

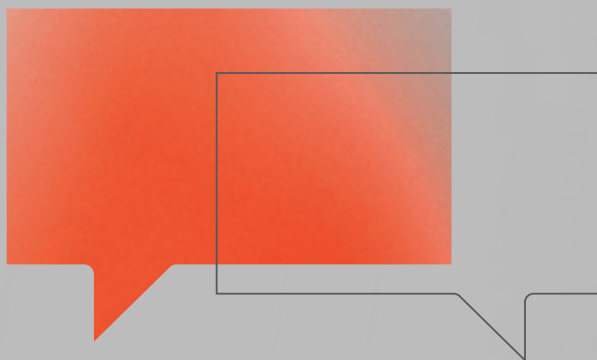
*Percentages reflect the range of responses received across the 8 countries surveyed*

# What are your future expectations towards insurance?

MAIN EXPECTATIONS (BOTH RETAIL AND SMALL BUSINESS CUSTOMERS)



**#1 More comprehensive policies to account for future crises**  
(39% / 39%)



**#2 Clearer policy wordings**  
(37% / 37%)

## In a nutshell

*"The pandemic has further strengthened the need for simplicity in insurance, which translates in the way we interact with our customers, who have become much more accustomed to transacting online; in the work being done to simplify policy wordings; in expectations regarding coverage solutions where simplicity now vies with innovation and breadth."*

Renaud Guidée  
Chief Risk Officer, AXA

# Long-term strategic implications for insurance

Conclusions and recommendations

Based on our desk research, interviews and the results of the global customer survey, we have distilled five key themes underpinning the future role of insurance in the post-pandemic risk landscape:

**Protection gaps and corporate purpose**

**Scope of business models**

**Sustainability**

**Digitalisation**

**Product complexity**

# 01

## Protection gaps and corporate purpose

If anything, COVID-19 has demonstrated the fragility of modern life. This is set to translate into higher awareness of risk and existing protection gaps, and, therefore, more demand for risk cover, including mortality, health and income protection. This could go hand in hand with higher expectations from both the public and private sectors on issues such as financial inclusion – possibly particularly so for the insurance sector given its 'corporate purpose' of promoting recovery and risk prevention that are conducive to economic stability and growth.<sup>114</sup> However, in light of increasing social inequality and growing challenges around affordability, all stakeholders, including policymakers and governments, will have to intensify their efforts.

*"The pandemic has fundamentally changed the health customer journey in developing markets. A 'health and digital crash course' that has led, amongst other things, to booming teleconsultations, has made it much easier for insurers to reach people, reducing their risk of being excluded from health protection. Insurers can help narrow health protection gaps cost efficiently, for example by leveraging artificial intelligence and finding a better 'phygital' equilibrium, to make sure that efforts remain focused on those who are in real need of care – throughout the healthcare journey, from triage to post-consultation care coordination. Insurers' messages are now being heard by customers and further echoed by governments and their education campaigns."*

**Garance Wattez-Richard**

CEO, AXA Emerging Customers

114. AXA 2021.

115. The Geneva Association 2016.  
Author: Kai-Uwe Schanz.

116. The Geneva Association 2021c.

### RECOMMENDATIONS FOR INSURERS

Insurers should redouble their perennial efforts to narrow protection gaps, in both advanced and developing countries. Heightened risk awareness could offer a fertile ground for promoting risk solutions which, post-pandemic, will rank higher on the minds of people and businesses – a lack of prioritisation has frequently been found to be a major obstacle to considering insurance. In doing so, insurers can also harness the higher value that society attaches to resilience, as opposed to the (short-term) maximisation of efficiency. Making progress towards narrowing protection gaps, however, also requires an active part from insurers: they need to successfully simplify their offerings. In addition, insurers must seize the opportunities offered by accelerated digitalisation and develop more affordable, accessible and appealing products and solutions.<sup>115</sup> Transitioning to more prevention-oriented business models could also help expand the boundaries of insurability and tackle protection gaps.<sup>116</sup>



## 02

# Scope of business models

Society's increasing awareness of vulnerability and mindfulness offers insurers additional opportunities to expand traditional business models to also include risk prediction and prevention services.<sup>117</sup>

Even though prevention services have always been an important element of insurance, ways to prevent risk are changing. With exponential growth in the use of sensors and smart devices, and the anticipated roll-out of 5G technology, more and more data is being generated, much of it in real time. For insurers, such data can provide valuable insights, with the potential to predict and prevent risks, as well as offer wider insurance coverage. A key driver of this development is IoT, the growing network of connected devices that ranges from consumer wearables to industrial control systems.<sup>118</sup>

117. About one third of both retail and small commercial insurance buyers surveyed would expect more prevention services from their insurers going forward.

118. The Geneva Association 2021c.

119. The Geneva Association 2021c offers more granular recommendations.

*"The pandemic has been a powerful catalyst for an increased awareness among all stakeholders of the need for enhanced societal resilience – and the crucial contribution insurers can make to it. At the same time, COVID-19 has expedited the process of digitalisation and the need for public-private partnerships, with insurance being no exception. This acceleration will enable less expensive and more innovative risk solutions and, in combination with heightened risk awareness, can help narrow protection gaps".*

**Eduardo Pérez de Lema**

Chairman & CEO, MAPFRE RE

*"COVID-19 may increase people's level of risk aversion and stimulate the demand for risk management. There is research on natural catastrophes that finds increased insurance demand in the aftermath of a catastrophe but the effect is not stable and wears off over time. It could be similar with Covid-19".*

**Richard Peter**

Associate Professor of Finance,  
The Emmett J. Vaughan Institute of Risk Management  
and Insurance, The University of Iowa

## RECOMMENDATIONS FOR INSURERS

Insurers can harness technology to expedite the transition to more customer-oriented business models fitting the post-pandemic risk landscape. IoT literacy and the understanding of its translation into insurance prevention services need to be strengthened. The development of data-driven and technology-based prevention services should be treated as a business transformation in its own right, rather than an isolated project. The economics of prevention services need to be recognised as different from payment-oriented models so they are commercially viable.<sup>119</sup>

# 03

## Sustainability

The pandemic has reinforced the pivot to sustainability across businesses and society. This creates new opportunities for insurers as the green transformation, for example, will increase demand for protection and mitigation. It is also expected to offer new investment opportunities with more stable returns. Under the UN-convened Net-Zero Asset Ownership Alliance, major insurers have committed to climate-neutral investment portfolios by 2050, guided by science-based targets designed to achieve the Paris Agreement's goal of limiting global warming to well below 2°C. There have also been calls for a similar effort on the liabilities (underwriting) side of insurers' balance sheets. However, in light of deepening societal imbalances caused by the pandemic, insurers have to be attentive to more than the 'E' in ESG.<sup>120</sup>

*"Tightening policy wordings and restricting coverage might prove short-sighted and could jeopardise insurers' long-term 'license to operate'. It ignores the fact that risk is a societal problem. Insurers have a massive interest in building societal resilience, even if it comes at a cost and seems to contradict actuarial science. The industry, in collaboration with governments, must find answers that go beyond the introduction of policy exclusions."*

**Paula Jarzabkowski**

Professor of Strategic Management at The Business School (formerly Cass), City, University of London

Equally important will be the 'S' – equality of opportunity, foremost in terms of education and human capital development, but also with regards to the affordability of and access to risk protection and mitigation. More fundamentally, the pandemic has prompted a re-evaluation of the social contract, i.e. the division of risk among individuals, employers and the state. The COVID-19 fiscal stimulus packages and government bailouts of citizens could herald a new chapter in the history of the welfare state, departing from established principles such as means-testing and social insurance. This remarkable shift follows decades during which risks such as longevity and job displacement were gradually offloaded from governments and employers onto individuals.<sup>121</sup>

120. ESG stands for Environmental, Social, and Governance. Investors are increasingly taking these non-financial factors into account as part of their risk reward analysis processes.

121. The Economist 2021.

122. 54% and 52%, respectively, of the retail and small commercial insurance buyers who participated in the Geneva Association 2021 Global Customer Survey believe that the post-pandemic world will be characterised by heightened social inequality.

### RECOMMENDATIONS FOR INSURERS

For insurers, these trends are a double-edged sword. On the one hand, there is a much heightened appreciation of the value of resilience and sustainability across society. This should help insurers, as providers of resilience and promoters of ESG objectives, to more compellingly carve out their corporate purpose, i.e. their core reason for being and their impact on the world.

On the other hand, governments' role in pooling and underwriting risks became paramount during the pandemic, in particular for those risks that are uninsurable for private-sector risk carriers. The pandemic has demonstrated to everyone the extent to which governments can smooth shocks. If social inequality and redistribution remain at the top of the political agenda,<sup>122</sup> insurers will need to enter into a more proactive dialogue with 'Big Government' on how they can contribute to what appears to be a new social contract; for example, by mitigating the vulnerability of the growing group of labour-market outsiders, whose lack of job and income security was shockingly exposed by the pandemic.

## 04

# Digitalisation

The pandemic is not the root cause of most of the developments and associated risks analysed in this report, but rather has primarily accelerated and amplified prior trends. Digitalisation is a prominent example. The shock-like need to embrace it could prove to be a 'blessing in disguise' for the insurance industry which is not known for its fast pace of adopting innovation. COVID-19 has profoundly changed the way insurers work, the way they organise their core processes, and the way they interact with their clients for good.<sup>123</sup>

*"Insurers can't realistically underwrite systemic multi-trillion losses in economic output as a result of government responses to COVID-19. This does not mean that insurers should not be part of future government-sponsored pandemic risk solutions. Beyond acting as risk carriers, insurers can contribute positively by enhancing the efficiency and effectiveness of pandemic risk management."*

**Jan-Hendrik Erasmus**  
Chief Risk Officer, Aviva

<sup>123</sup>. Around 60% of retail and small commercial insurance buyers believe that the radical shift to digital transactions will endure post-pandemic.

## RECOMMENDATIONS FOR INSURERS

The rapid acceleration of digitalisation brought about by the pandemic is a major opportunity for insurers to transform their business models towards greater speed, scale and simplicity, in terms of IT, product landscape, business processes and customer interaction. Those who succeed in decreasing time to market, digitalising the value chain, boosting productivity, trimming cost and personalising customer interactions will be among the winners. At the same time, especially in life insurance, the 'hybrid customer approach' is likely to remain most promising. It is based on a strong and digitally savvy agency sales force, complemented by direct sales capabilities and a comprehensive connection of all digital and non-digital distribution channels.

# 05

## Product complexity

There is a broad consensus that post-pandemic, insurance policies need to be clearer about what they do and do not cover. This realisation follows a wave of disputes and litigation about denied coronavirus business interruption claims. Confusion around wordings and insurers' stance that business interruption policies were neither designed nor intended to pay out under the COVID-19 pandemic prompted the UK Financial Conduct Authority to bring a business interruption test case to the High Court to trial this approach.<sup>124</sup> Going forward, insurers are expected to be more disciplined in applying the same high standards of clarity of wordings in every case. Having clear, undisputable language in policies is what customers will expect even more in the future.<sup>125</sup>

*"As shown by COVID-19, pandemics affect economic sectors in a differentiated way. This opens the door to risk coverage mechanisms based on a portfolio of financial securities, including long-short positions and options in stock markets. Therefore, harnessing financial innovation and entering into collaborations with banks may enable insurers to offer pandemic business interruption insurance."*

**Pierre Picard**

Professor of Economics, École Polytechnique (Palaiseau, France)

124. For the full judgment see BAILLI 2020.

125. The Geneva Association's 2021 Global Customer Survey reveals that more than two thirds of retail and small business insurance customers expect clearer policies from their insurers post-pandemic.

126. The Geneva Association 2020a. Author: Kai-Uwe Schanz.

### RECOMMENDATIONS FOR INSURERS

COVID-19 has demonstrated that the economic losses from a global pandemic are uninsurable.<sup>126</sup> For some risks there is a clear gap between what insurers are able to insure and what clients and society expect them to cover. In order to avoid false expectations, insurers have to become better in communicating what risks their policies cover and then stand by customers as a reliable partner. Contracts have to be much simpler and more accessible so that customers clearly know which risks are covered. Even prior to COVID-19, some insurers learned that their customers do not expect them to pay out unjustified claims, but they do demand that their expectations are met as best as possible. Meeting these expectations requires that insurers clearly communicate what they promise and then keep their part of the bargain.

CAPITALISE ON ACCELERATED  
DIGITALISATION TO EXPAND COVERAGE, CAPTURE  
EFFICIENCY GAINS AND REDEFINE CUSTOMER  
ENGAGEMENT AND EXPERIENCE

SHARPEN FOCUS  
ON SUSTAINABILITY

SIMPLIFY PRODUCTS  
AND CLARIFY  
POLICY WORDINGS

HARNESS HEIGHTENED  
RISK AWARENESS  
AND THE SHIFT TO DIGITAL  
TO NARROW PROTECTION  
GAPS

EXPEDITE BUSINESS  
MODEL INNOVATION  
TO INCLUDE PREVENTION  
SERVICES

Figure 11  
**Towards an expanded role  
for insurance post-pandemic**

5 RECOMMENDATIONS FOR INSURERS

Source: The Geneva Association.

# Appendix

## Findings from the Geneva Association Global Customer Survey 2021

The Geneva Association global customer survey, carried out by Edelman Data & Intelligence, covered 7,200 retail and 800 small commercial insurance buyers, equally split among the following eight markets: Brazil, China, France, Germany, Italy, Japan, the U.K. and the U.S. The small business owners sample covered companies with less than 50 employees across all major segments of the economy. The online survey took place in January and February 2021. It focused on the perception of insurance and the insurance industry during the pandemic and, on that basis, the pandemic's implications for risk awareness, future insurance needs and buying behaviours.

## Sticking 'macro' consequences of the pandemic

Figure 12: Which trends will continue/gain further momentum post-pandemic?

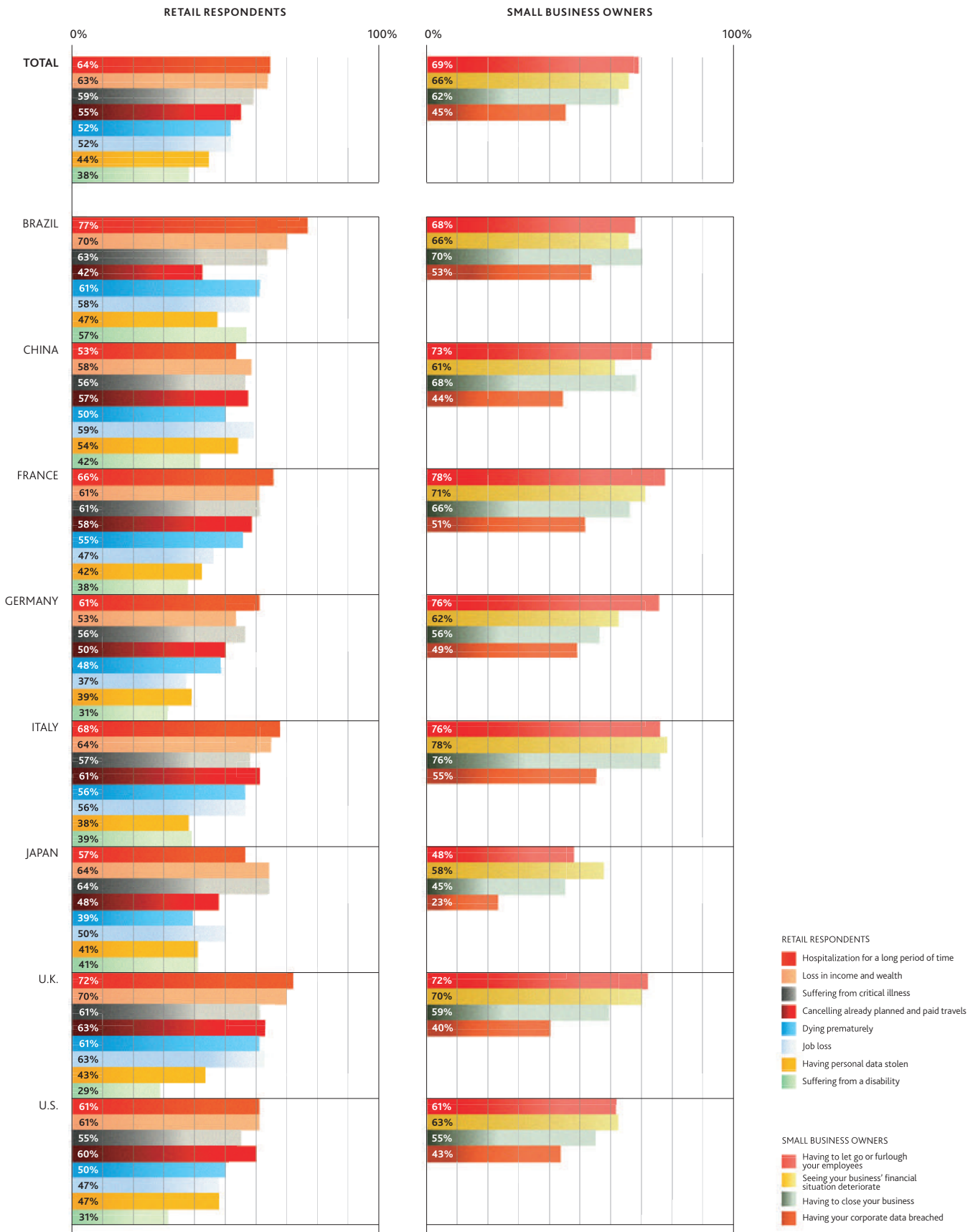
Source: The Geneva Association Global Customer Survey 2021



## Key individual concerns post-pandemic

Figure 13: How concerned are you about experiencing the following situations in the future?

Source: The Geneva Association Global Customer Survey 2021

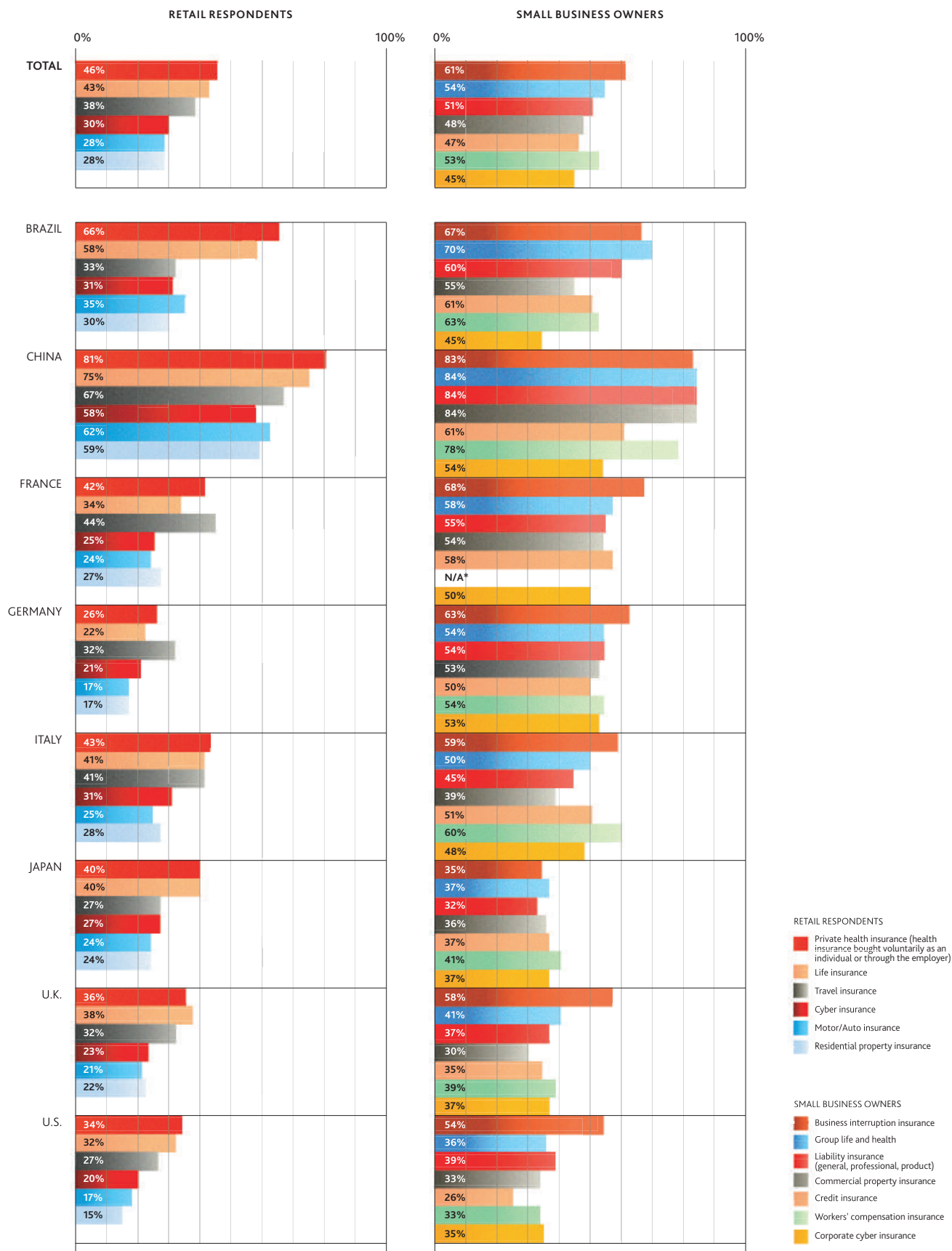




## The need for insurance and buying intentions post-pandemic

Figure 14: Which insurance products do you consider more important post-pandemic?

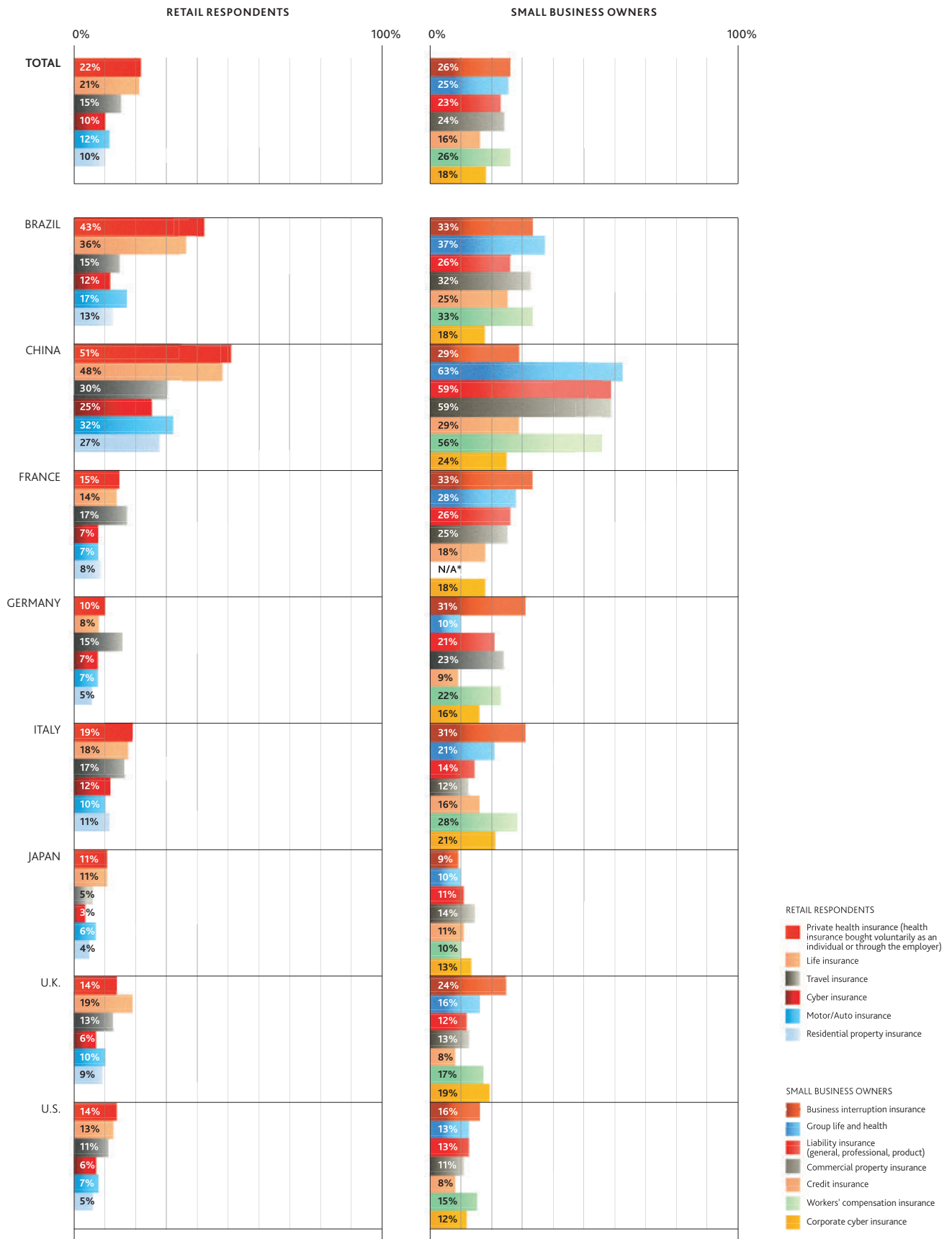
Source: The Geneva Association Global Customer Survey 2021



\* In France, workers' compensation insurance is provided through the public social security programme.

**Figure 15: Among the insurance products you consider more important post-pandemic, do you intend to buy more?**

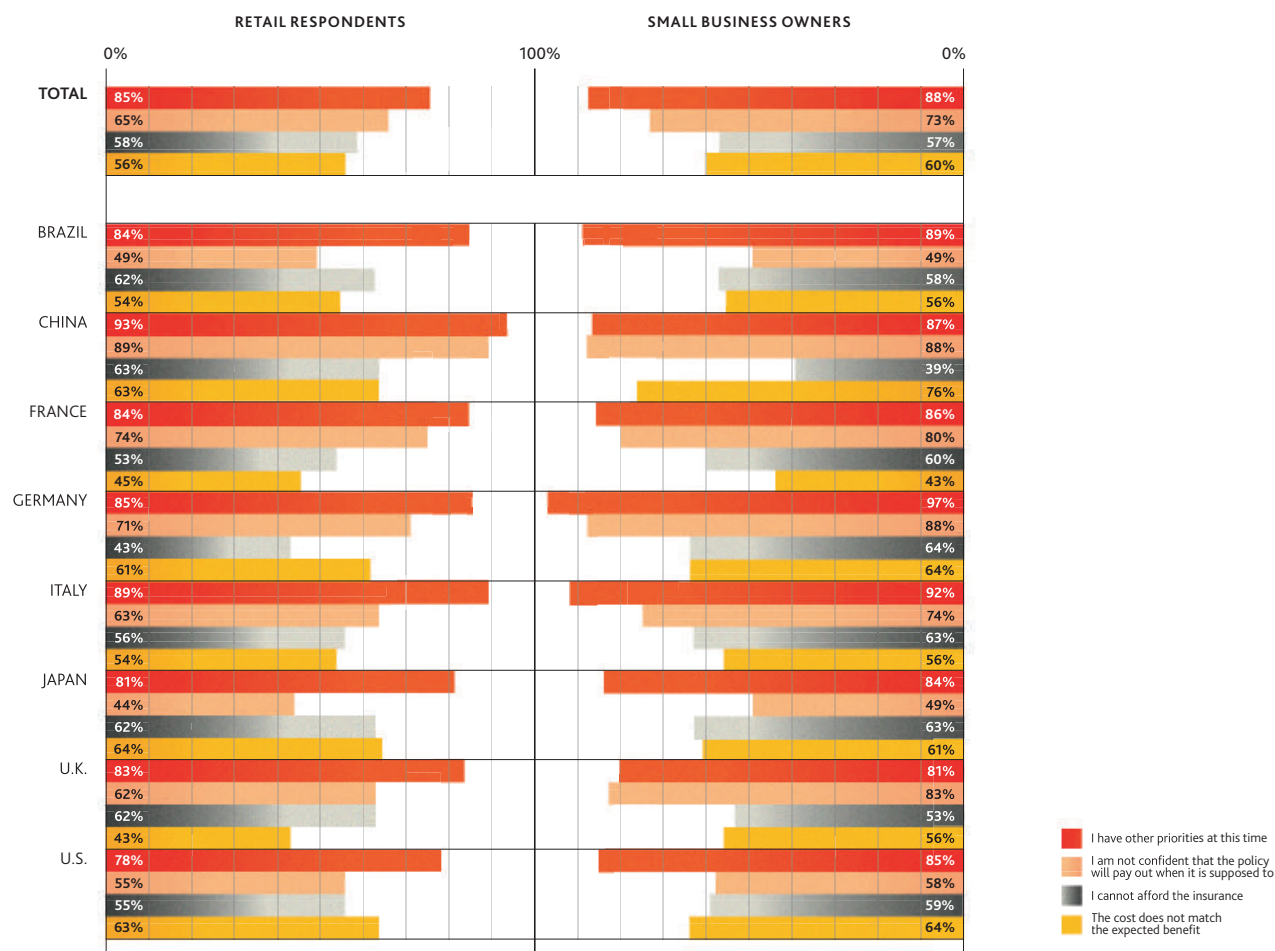
Source: The Geneva Association Global Customer Survey 2021



\* In France, workers' compensation insurance is provided through the public social security programme.

**Figure 16: Please indicate the main reasons why you do not plan to purchase (more of) the insurance cover as a result of COVID-19.**

Source: The Geneva Association Global Customer Survey 2021



## Customer expectations post-pandemic

Figure 17: What are your future expectations towards insurance?

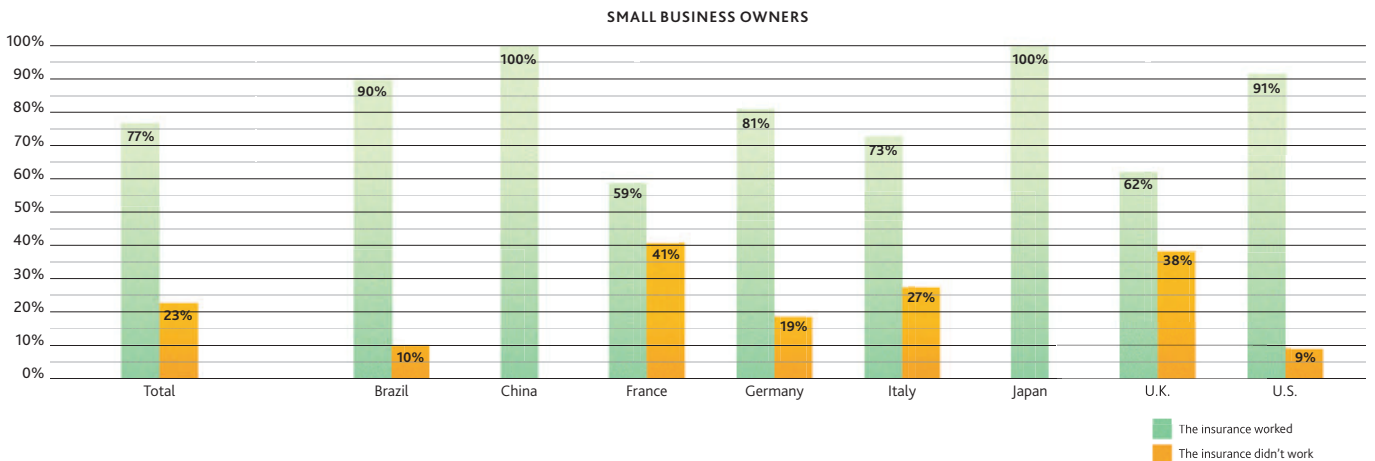
Source: The Geneva Association Global Customer Survey 2021



## Experience with insurers during the pandemic

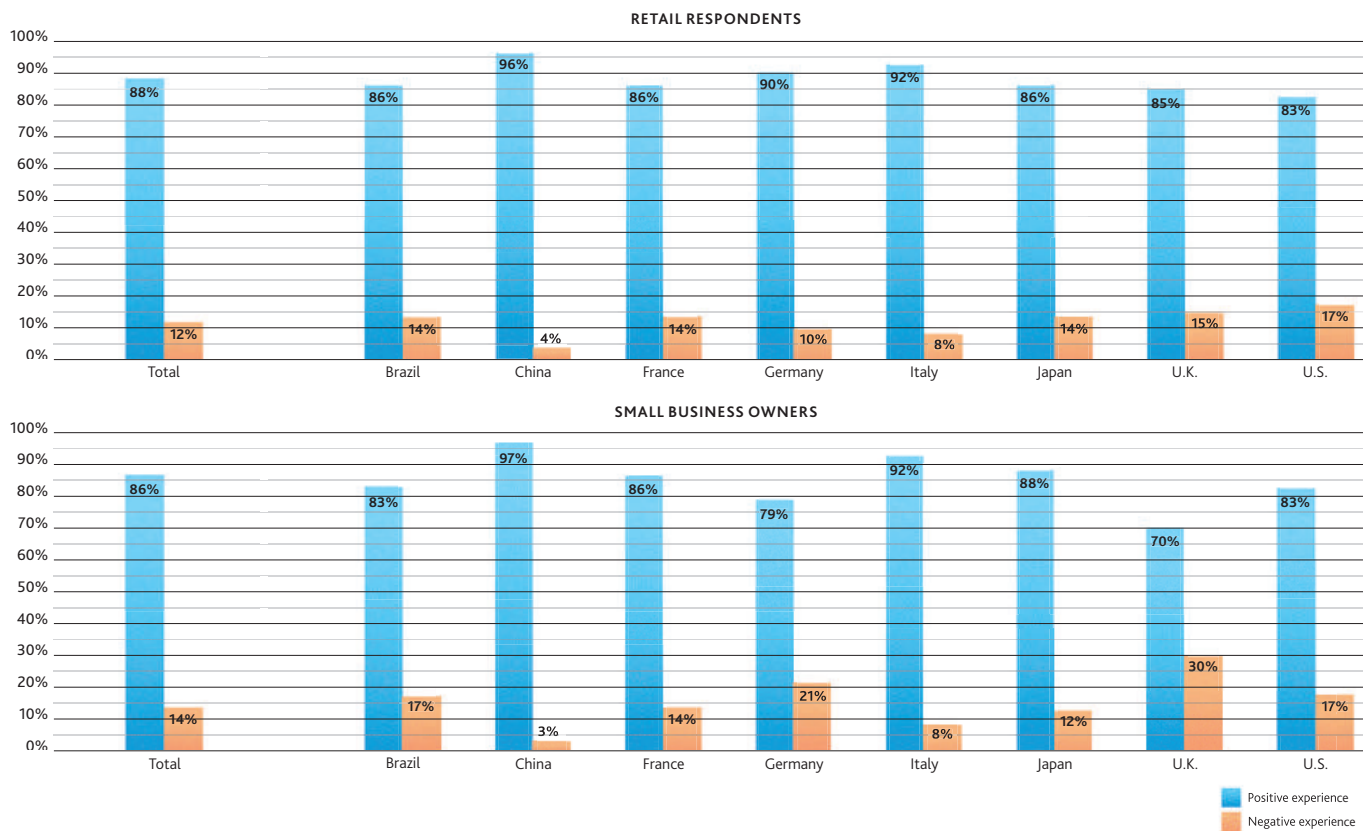
Figure 18: You said that you have had to use your business interruption coverage since the onset of the COVID-19 pandemic. Did the coverage work as expected?

Source: The Geneva Association Global Customer Survey 2021



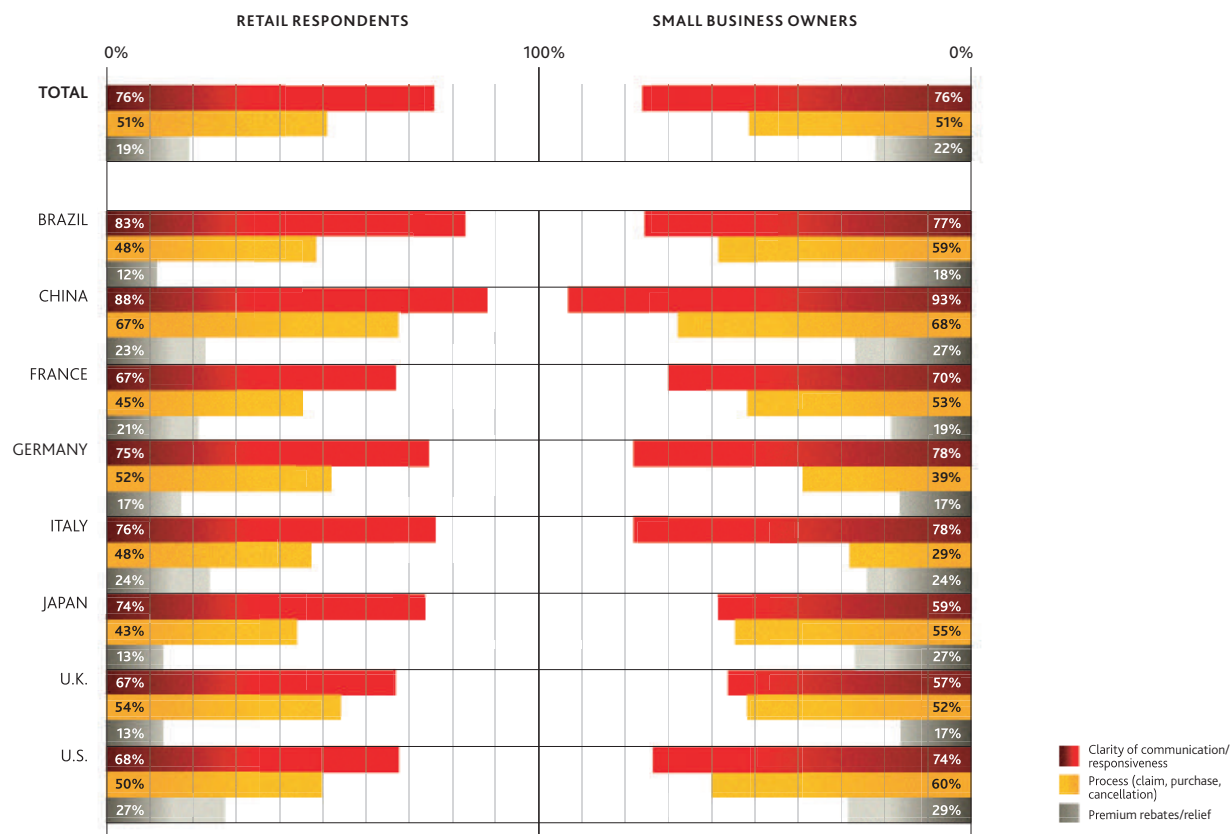
**Figure 19: Based on a specific interaction with your insurer during the pandemic how would you rate your experience?**

Source: The Geneva Association Global Customer Survey 2021



**Figure 20: What type of good experiences/interactions did you have?**

Source: The Geneva Association Global Customer Survey 2021



# References

- / Ahlgrim, K.C., and S.P. D'Arcy. 2012. The Effect of Deflation or High Inflation on the Insurance Industry. Sponsored by Casualty Actuarial Society, Canadian Institute of Actuaries and Society of Actuaries.
- / Allianz. 2020. Growing Pains: The Future of Incomes for Lockdown Gen Z. [https://www.eulerhermes.com/content/dam/onemarketing/ehndbx/eulerhermes\\_com/en\\_gl/erd/publications/pdf/2020\\_12\\_11\\_GrowingPains\\_GenZ.pdf](https://www.eulerhermes.com/content/dam/onemarketing/ehndbx/eulerhermes_com/en_gl/erd/publications/pdf/2020_12_11_GrowingPains_GenZ.pdf)
- / Allianz. 2021. Allianz Risk Barometer 2021. <https://www.agcs.allianz.com/news-and-insights/reports/allianz-risk-barometer.html>
- / Amundi. 2020. The Vaccine is a Binary Event for the Markets, not for the Economy. <https://research-center.amundi.com/page/Article/2020/12/The-vaccine-is-a-binary-event-for-the-markets-not-for-the-economy>
- / Aon/Ponemon Institute. 2018. 2017 Global Cyber Risk Transfer Comparison Report. Ponemon Institute.
- / Atlas VPN. 2020. <https://atlasvpn.com/blog/average-ransom-payout-jumped-178-in-a-year>
- / AXA. 2020. A Report on Mental Health and Well-being in Europe. <https://www.axa.ch/en/privatkunden/blog/health/healthcare/mental-health-study.html>
- / AXA. 2021. 2040 – Exploring Society's Future Challenges. An AXA Foresight Report. [https://www.axa-com.cdn.axa-contento-118412.eu/www-axa-com/a8483ecc-d57c-42b3-bd37-c1e97f3ad29b\\_2040-Exploring-society-s-future-challenges.pdf](https://www.axa-com.cdn.axa-contento-118412.eu/www-axa-com/a8483ecc-d57c-42b3-bd37-c1e97f3ad29b_2040-Exploring-society-s-future-challenges.pdf)
- / BAILII. 2020. <https://www.bailii.org/ew/cases/EWHC/Comm/2020/2448.html>
- / Birkinshaw, J. The New Board Room Imperative. From Agility to Resilience. Forbes. 28 March 2020. <https://www.forbes.com/sites/lbsbusinessstrategyreview/2020/03/28/the-new-boardroom-imperative-from-agility-to-resilience/?sh=35d8ea238671>
- / Bonadio, B., H. Zhen, A. Levchenko, and N. Pandalai-Nayar. 2020. Global Supply Chains in the Pandemic. National Bureau of Economic Research Working Paper No. 27224. [www.nber.org/papers/w27224](http://www.nber.org/papers/w27224)
- / Brunnermeier, M., and A. Krishnamurthy. 2020. Corporate Debt Overhang and Credit Policy. Conference Draft, Brookings Papers on Economic Activity.
- / Caballero, R.J., and A. Simsek. 2020. Monetary Policy and Asset Price Overshooting: A Rationale for the Wall/Main Street Disconnect. National Bureau of Economic Research Working Paper No. 27712.
- / Cairncross, F. 1997. The Death of Distance: How the Communications Revolution Will Change Our Lives.
- / Chernoff, A., and C. Warman. 2020. COVID-19 and Implications for Automation. NBER Working Paper. [https://www.nber.org/system/files/working\\_papers/w27249/w27249.pdf](https://www.nber.org/system/files/working_papers/w27249/w27249.pdf)
- / CISL. 2020. Maximising the Benefits: Economic, Employment and Emissions Impacts of a Green Recovery Plan in Europe.
- / Coscia M., F. Neffke, and R. Hausmann. 2020. Knowledge Diffusion in the Network of International Business Travel. Nature Human Behaviour 4 (10): 1011–1020.
- / Credit Suisse Research Institute. 2020. What Will Last – The Long-term Implications of COVID-19.
- / Deutsche Bank. 2020. Life After COVID-19.
- / EIU. 2020. Digital disruption: Risks and Opportunities in the Shift to Online.
- / Eling, M., and M. Lehmann. 2018. The Impact of Digitalization on the Insurance Value Chain and the Insurability of Risks. The Geneva Papers on Risk and Insurance—Issues and Practice 43: 359–396.
- / Ellen MacArthur Foundation. 2012. Circular Economy. <https://www.ellenmacarthurfoundation.org/news/circular-economy>
- / Euler Hermes. 2020. Impact Underwriting – Sustainable Insurance as an Opportunity for Society and Business.
- / Evenett, S., and R. Baldwin. 2020. Revitalising Multilateralism.
- / EY. 2021. Global Insurance Consumer Survey.
- / Fisher, Irving. 19a30. The Theory of Interest. New York: Macmillan.
- / Florida, R. et al. How Life in Our Cities Will Look After the Coronavirus Pandemic. Foreign Policy. 1 May 2020. <https://foreignpolicy.com/2020/05/01/future-of-cities-urban-life-after-coronavirus-pandemic/>
- / Friedman, B. 2014. Has the Financial Crisis Permanently Changed the Practice of Monetary Policy? National Bureau of Economic Research Working Paper No. 20128. <http://www.nber.org/papers/w20128>
- / Friedman, L., and J. Tankersley. Biden's Recovery Plan Bets Big on Clean Energy. New York Times. 23 March 2021. <https://www.nytimes.com/2021/03/23/climate/biden-infrastructure-stimulus-climate-change.html>

/ Furceri, D., P. Loungani, and J.D. Ostry. How Pandemics Leave the Poor Even Farther Behind. IMF Blog. 11 May 2020. <https://blogs.imf.org/2020/05/11/how-pandemics-leave-the-poor-even-farther-behind/>

/ G20. 2020. Heightening Cybersecurity to Promise Safety and Fairness for Citizens in the Post-Covid-19 Digital World.

/ Gal, P., G. Nicoletti, T. Renault, S. Sorbe, and C. Timiliotis 2019. Digitalisation and Productivity: In Search of the Holy Grail – Firm-level Empirical Evidence from EU countries. OECD Economics Department Working Paper No. 1533. <https://doi.org/10.1787/5080f4b6-en>.

/ Gabe, T., and J.R. Abel. 2011. Agglomeration of Knowledge. *Urban Studies* 48 (7): 1353–1371.

/ Garrett, G. 2020. The Post COVID-19 World Will Be Less Global and Less Urban. <https://knowledge.wharton.upenn.edu/article/post-covid-19-world-will-less-global-less-urban/>

/ GSMA. 2020. The Mobile Economy 2020. [https://www.gsma.com/mobileeconomy/wp-content/uploads/2020/03/GSMA\\_MobileEconomy2020\\_Global.pdf](https://www.gsma.com/mobileeconomy/wp-content/uploads/2020/03/GSMA_MobileEconomy2020_Global.pdf)

/ Haass, R. The Pandemic Will Accelerate History Rather Than Reshape It: Not Every Crisis Is A Turning Point. *Foreign Affairs*. 7 April 2020. <https://www.foreignaffairs.com/articles/united-states/2020-04-07/pandemic-will-accelerate-history-rather-reshape-it>

/ Hass, R., R. McElveen, and R.D. Williams. 2020. The Future of US Policy Toward China. <https://www.brookings.edu/wp-content/uploads/2020/11/Future-U.S.-policy-toward-China-v8.pdf>

/ Haraguchi, M., and U. Lall. 2015. Flood Risks and Impacts: A case study of Thailand's Floods in 2011 and Research Questions for Supply Chain Decision Making. *International Journal of Disaster Risk Reduction* 14 (3): 256–272.

/ Hartwig, R., G. Niehaus, and J. Qiu. 2020. Insurance for Economic Losses Caused by Pandemics. *The Geneva Risk and Insurance Review* 45: 134–170.

/ Huang, Y. U.S.-Chinese Distrust Is Inviting Dangerous Coronavirus Conspiracy Theories: And Undermining Efforts To Contain The Epidemic. *Foreign Affairs*. 5 March 2020. <https://www.foreignaffairs.com/articles/united-states/2020-03-05/us-chinese-distrust-inviting-dangerous-coronavirus-conspiracy>

/ IAIS. 2020. Cyber Risk Underwriting – Identified Challenges and Supervisory Considerations for Sustainable Market Development.

/ IISD. 2020. Japan Unveils USD 700 Billion Stimulus Package. <https://www.iisd.org/sustainable-recovery/news/japan-unveils-usd-700-billion-stimulus-package/>

/ ILO. 2020. LO Monitor: COVID-19 and the World of Work. Fifth Edition. [https://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/documents/briefingnote/wcms\\_749399.pdf](https://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/documents/briefingnote/wcms_749399.pdf)

/ IMF. 2020. World Economic Outlook 2020. [https://www.imf.org/external/datamapper/GGXWDG\\_NGDP@WEO/OEMDC/ADVEC/WEOWORLD](https://www.imf.org/external/datamapper/GGXWDG_NGDP@WEO/OEMDC/ADVEC/WEOWORLD)

/ Kitchin, R., and M. Dodge. 2019. The (In)Security of Smart Cities: Vulnerabilities, Risks, Mitigation, and Prevention. *Journal of Urban Technology* 26 (2): 47–65. <https://doi.org/10.1080/10630732.2017.1408002>

/ Koeze, E., and N. Popper. The Virus Changed the Way We Internet. *New York Times*. 7 April 2020.

/ Kousky, C., E. Michel-Kerjan, and P. Raschky. 2017. Does Federal Disaster Assistance Crowd Out Flood Insurance? *Journal of Environmental Economics and Management* 87. Doi: 10.1016/j.jeeem.2017.05.010.

/ Kumar, K. A Tale of Two Americas. *The RAND Blog*. 9 July 2020. <https://www.rand.org/blog/2020/07/a-tale-of-two-americas.html>

/ Li, D., F. Moshirian, P. Nguyen, and T. Wee. 2007. The Demand for Life Insurance in OECD Countries. *Journal of Risk and Insurance* 74 (3): 637–652.

/ Martin, R.L. The High Price of Efficiency. *Harvard Business Review*. January–February 2019.

/ McKinsey. 2020a. Risk, Resilience and Rebalancing Global Value Chains.

/ McKinsey. 2020b. The Next Normal Arrives: Trends That Will Define 2021—And Beyond.

/ McKinsey. 2020c. State of Property and Casualty Insurance 2020. <https://www.mckinsey.com/industries/financial-services/our-insights/state-of-property-and-casualty-insurance-2020#:~:text=The%20global%20P%26C%20industry%20contributes,trillion%20in%20premiums%20in%202018>

/ Mendoza, N.F. COVID-19: Gen Z Workers are Struggling with Careers and Worried About the Future. *Tech Republic*. 2 July 2020.

/ Miroudot, S. Resilience versus Robustness in Global Value Chains: Some Policy Implications. *VoxEU CEPR*. 18 June 2020. <https://voxeu.org/article/resilience-versus-robustness-global-value-chains>

/ MSCI. 2020. Post-pandemic Reflections: Smart Cities. <https://www.msci.com/documents/1296102/18941732/ThematicIndex-SmartCities-Post-COVID-cbr-en.pdf/5b4df1b8-64d1-240c-eae3-f40eb36afbbf>

# References

- / Moretti A., F. Menna, M. Aulicino, M. Paoletta, S. Liguori, and G. Iolascon. 2020. Characterization of Home Working Population during COVID-19 Emergency: A Cross-Sectional Analysis. *International Journal of Environmental Research and Public Health* 17 (17): 6284. Doi: 10.3390/ijerph17176284
- / Moss, J. Beyond Burned Out. *Harvard Business Review*. 10 February 2021.  
<https://hbr.org/2021/02/beyond-burned-out>
- / Newburger, E. Rethinking Stimulus: How Covid Economic Recovery Can Help Battle Climate Change. *CNBC*. 22 December 2020.  
<https://www.cnn.com/2020/12/22/covid-economic-recovery-plans-must-battle-climate-change.html>
- / O’Callaghan, B., and E. Murdock. 2021. Are We Building Back Better?  
<https://www.unep.org/resources/publication/are-we-building-back-better-evidence-2020-and-pathways-inclusive-green/> OECD. Focus on Green Recovery  
<https://www.oecd.org/coronavirus/en/themes/green-recovery>
- / O’Farrell, R., L. Rawdanowicz, and K.-I. Inaba. 2016. Monetary Policy and Inequality. *OECD Economics Department Working Paper No. 1281*.  
<https://www.oecd-ilibrary.org/docserver/5jm2hz2x9hxr-en.pdf?expires=1607436675&id=id&accname=guest&checksum=EAAEA09E850BC27591C184DFCC725A9E>
- / OECD. 2020a. Productivity Gains from Teleworking in the Post-COVID-19 Era.  
<https://www.oecd.org/coronavirus/policy-responses/productivity-gains-from-teleworking-in-the-post-covid-19-era-a5d52e99/>
- / OECD. 2020b. Responding to the COVID-19 and Pandemic Protection Gap in Insurance.
- / OECD. 2020c. Building Back Better – A sustainable, Resilient Recovery after COVID-19.  
<https://www.oecd.org/coronavirus/policy-responses/building-back-better-a-sustainable-resilient-recovery-after-covid-19-52b869f5/>
- / OECD. 2021. Addressing the Protection Gap for Pandemic Risk: Setting the Scene.  
[www.oecd.org/finance/insurance/addressing-protection-gap-pandemic-risk.htm](http://www.oecd.org/finance/insurance/addressing-protection-gap-pandemic-risk.htm)
- / Oliver Wyman. 2020. Navigating the Long Haul to Normalcy.
- / Oxfam. 2021. The Inequality Virus.  
<https://assets.oxfamamerica.org/media/documents/the-inequality-virus-report.pdf>
- / Pictet Asset Management. 2020. Going Viral – Scenarios for a Post-pandemic World.
- / Qureshi, Z. 2020. Tackling the Inequality Pandemic – Is there a Cure?  
<https://www.brookings.edu/research/tackling-the-inequality-pandemic-is-there-a-cure/>
- / Reinhart, C., and B. Sbrancia. 2011. The Liquidation of Government Debt. *BIS Working Paper No 363*.  
<https://www.bis.org/publ/work363.pdf>
- / Reinhart, C. On the Financial Consequences of the Pandemic. *The Economist*. 17 November 2020.  
<https://www.economist.com/the-world-ahead/2020/11/17/carmen-reinhart-on-the-consequences-of-the-pandemic>
- / Rose, N. 2020. Will Competition be Another Covid-19 Casualty? The Hamilton Project. *Brookings*.  
[https://www.hamiltonproject.org/assets/files/Rose\\_LO\\_FINAL.pdf](https://www.hamiltonproject.org/assets/files/Rose_LO_FINAL.pdf)
- / RSA. 2019. Managing Digital Risk.  
<https://www.rsa.com/content/dam/en/e-book/how-to-manage-eight-types-of-digital-risk.pdf>
- / Saliola, F., and A. Islam. How to Harness the Digital Transformation of the Covid Era. *Harvard Business Review*. September 2020.
- / SCOR. 2013. Supply Chain and Contingent Business Interruption.  
[https://www.scor.com/sites/default/files/scor\\_focus\\_cbi.pdf](https://www.scor.com/sites/default/files/scor_focus_cbi.pdf)
- / Shibata, I. 2020. The Distributional Impact of Recessions: the Global Financial Crisis and the Pandemic Recession. *IMF Working Paper*.
- / Stiglitz, J. 2020. Conquering the Great Divide. *Finance & Development*.  
<https://www.imf.org/external/pubs/ft/fandd/2020/09/pdf/COVID19-and-global-inequality-joseph-stiglitz.pdf>
- / Swiss Re. 2018. Global Economic and Insurance Outlook 2020. *Sigma* No. 5.
- / Swiss Re. 2019. Indexing Resilience – A Primer for Insurance Markets and Economies. *Sigma* No. 5.
- / Swiss Re. 2020a. Rebuilding Better. *Sigma* No. 2.  
<https://www.swissre.com/dam/jcr:4951c23e-d8d0-4f3e-87db-07741f3e162e/swiss-re-sigma-7-2020-en-web.pdf>
- / Swiss Re. 2020b. Rebuilding Better: Global Economic and Insurance Market Outlook 2020/21.  
<https://www.swissre.com/dam/jcr:4951c23e-d8d0-4f3e-87db-07741f3e162e/swiss-re-sigma-7-2020-en-web.pdf>



/ Swiss Re. 2020c. Financial Repression is Here to Stay.  
<https://www.swissre.com/institute/research/topics-and-risk-dialogues/economy-and-insurance-outlook/expertise-publication-financial-repression-here-to-stay.html>

/ Swiss Re. 2020d. De-risking Global Supply Chains: Rebalancing to Strengthen Resilience.  
<https://www.swissre.com/dam/jcr:cff737e5-ac7f-4d67-b0cc-6634fe378feb/sigma-6-2020-en.pdf>

/ Syverson, J. 2018. Why Hasn't Technology Sped Up Productivity. Chicago Booth Review. 5 February 2018.  
<https://review.chicagobooth.edu/economics/2018/article/why-hasn-t-technology-sped-productivity>

/ The Economist. 2020. The Peril and the Promise.  
<https://www.economist.com/special-report/2020/10/08/the-peril-and-the-promise>

/ The Economist. 2021. Covid-19 has Transformed the Welfare State. Which Changes will Endure?  
<https://www.economist.com/briefing/2021/03/06/covid-19-has-transformed-the-welfare-state-which-changes-will-endure>

/ The Geneva Association. 2016. Harnessing Technology to Narrow the Insurance Protection Gap. Author: Kai-Uwe Schanz. December.  
<https://www.genevaassociation.org/research-topics/protection-gap-digitalization/harnessing-technology-narrow-insurance-protection-gap>

/ The Geneva Association. 2017. The 'Low for Long' Challenge – Socio-economic Implications and the Life Insurance Industry's Response. Author: Daniel Hofmann. November.  
<https://www.genevaassociation.org/research-topics/financial-stability-and-regulation/low-long-challenge-socio-economic-implications>

/ The Geneva Association. 2020a. An Investigation into the Insurability of Pandemic Risk. Author: Kai-Uwe Schanz. October. <https://www.genevaassociation.org/research-topics/socio-economic-resilience/investigation-insurability-pandemic-risk-research-report>

/ The Geneva Association. 2020b. Addressing Obstacles to Life Insurance Demand. Author: Kai-Uwe Schanz. May. <https://www.genevaassociation.org/research-topics/health-and-ageing/addressing-obstacles-life-insurance-demand-research-report>

/ The Geneva Association. 2021a [forthcoming]. Insuring the Future of Work. Author: Kai-Uwe Schanz.

/ The Geneva Association. 2021b [forthcoming]. Insuring Future Urban Risk Landscapes. Author: Kai-Uwe Schanz.

/ The Geneva Association. 2021c. From Risk Transfer to Risk Prevention: How the Internet of Things is Reshaping Business Models in Insurance. Authors: Isabelle Flückiger and Matteo Carbone. May. <https://www.genevaassociation.org/research-topics/new-technologies-and-data/risk-transfer-risk-prevention-internet-of-things-reshaping-insurance>

/ The Oxford Institute for Energy Studies. 2019. The US-China: The Great Decoupling.  
<https://www.oxfordenergy.org/wpcms/wp-content/uploads/2019/07/US-China-the-great-decoupling-53.pdf>

/ The White House. 2021.  
<https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/31/fact-sheet-the-american-jobs-plan/>

/ The World Bank. 2014. Economic Resilience – Definition and Measurement.  
<http://documents1.worldbank.org/curated/en/350411468149663792/pdf/WPS6852.pdf>

/ Todo, Y., K. Nakajima, and P. Matous. 2015. How do Supply Chain Networks Affect the Resilience of Firms to Natural Disasters? Evidence from the Great East Japan Earthquake. *Journal of Regional Science* 55 (2): 209–229.

/ United Nations. 2015. The Paris Agreement.  
[https://unfccc.int/sites/default/files/english\\_paris\\_agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf)

/ World Business Council for Sustainable Development. 2020. The Consequences of Covid-19 for the Decade Ahead.

/ WEF. 2020a. COVID-19 Risks Outlook A Preliminary Mapping and Its Implications.

/ WEF. 2020b.  
<https://www.weforum.org/agenda/2019/09/mapped-the-dramatic-global-rise-of-urbanization-1950-2020/>

/ WEF. 2020c. The Future of Jobs Report 2020.  
[http://www3.weforum.org/docs/WEF\\_Future\\_of\\_Jobs\\_2020.pdf](http://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf)

/ World Meteorological Organization 2020. United in Science.  
[https://public.wmo.int/en/resources/united\\_in\\_science](https://public.wmo.int/en/resources/united_in_science)

/ World Resources Institute 2020. Lessons from the Great Recession for COVID-19 Green Recovery.  
<https://www.wri.org/insights/lessons-great-recession-covid-19-green-recovery>

/ World Trade Organization. 2020. World Trade Statistical Review 2020.

/ Zhang, K. How SARS Contributed to the Birth of China's e-commerce. *Digital Commerce* 360. 5 February 2020.  
<https://www.digitalcommerce360.com/2020/02/05/how-sars-contributed-to-the-birth-of-china-ecommerce/>

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