



BIROn - Birkbeck Institutional Research Online

Jarzabkowski, P. and Krull, E. and Kavas, M. and Chalkias, Konstantinos (2021) Strategies for responding to pandemic risk: removal and/or redistribution. *Journal of Financial Transformation* (54), pp. 62-69.

Downloaded from: <https://eprints.bbk.ac.uk/id/eprint/46846/>

Usage Guidelines:

Please refer to usage guidelines at <https://eprints.bbk.ac.uk/policies.html>
contact lib-eprints@bbk.ac.uk.

or alternatively

CAPCO

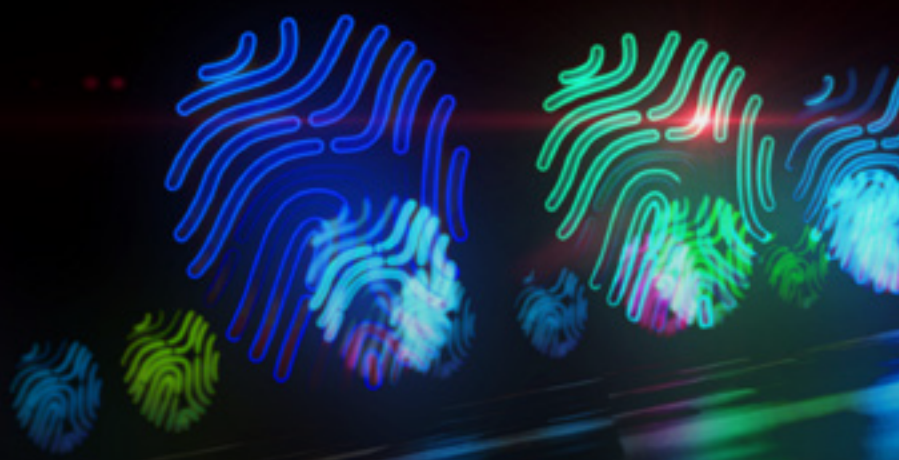
a wipro company

THE CAPCO INSTITUTE
JOURNAL
OF FINANCIAL TRANSFORMATION

RISKS

Strategies for responding to
pandemic risk: Removal
and/or redistribution

PAULA JARZABKOWSKI
ELISABETH KRULL | MUSTAFA KAVAS
KONSTANTINOS CHALKIAS



INSURANCE

#54 NOVEMBER 2021

THE CAPCO INSTITUTE

JOURNAL OF FINANCIAL TRANSFORMATION

RECIPIENT OF THE APEX AWARD FOR PUBLICATION EXCELLENCE

Editor

Shahin Shojai, Global Head, Capco Institute

Advisory Board

Michael Ethelston, Partner, Capco

Michael Pugliese, Partner, Capco

Bodo Schaefer, Partner, Capco

Editorial Board

Franklin Allen, Professor of Finance and Economics and Executive Director of the Brevan Howard Centre, Imperial College London and Professor Emeritus of Finance and Economics, the Wharton School, University of Pennsylvania

Philippe d'Arvisenet, Advisor and former Group Chief Economist, BNP Paribas

Rudi Bogni, former Chief Executive Officer, UBS Private Banking

Bruno Bonati, Former Chairman of the Non-Executive Board, Zuger Kantonalbank, and President, Landis & Gyr Foundation

Dan Breznitz, Munk Chair of Innovation Studies, University of Toronto

Urs Birchler, Professor Emeritus of Banking, University of Zurich

Géry Daeninck, former CEO, Robeco

Jean Dermine, Professor of Banking and Finance, INSEAD

Douglas W. Diamond, Merton H. Miller Distinguished Service Professor of Finance, University of Chicago

Elroy Dimson, Emeritus Professor of Finance, London Business School

Nicholas Economides, Professor of Economics, New York University

Michael Enthoven, Chairman, NL Financial Investments

José Luis Escrivá, President, The Independent Authority for Fiscal Responsibility (AIReF), Spain

George Feiger, Pro-Vice-Chancellor and Executive Dean, Aston Business School

Gregorio de Felice, Head of Research and Chief Economist, Intesa Sanpaolo

Allen Ferrell, Greenfield Professor of Securities Law, Harvard Law School

Peter Gomber, Full Professor, Chair of e-Finance, Goethe University Frankfurt

Wilfried Hauck, Managing Director, Statera Financial Management GmbH

Pierre Hillion, The de Picciotto Professor of Alternative Investments, INSEAD

Andrei A. Kirilenko, Reader in Finance, Cambridge Judge Business School, University of Cambridge

Mitchel Lenson, Former Group Chief Information Officer, Deutsche Bank

David T. Llewellyn, Professor Emeritus of Money and Banking, Loughborough University

Donald A. Marchand, Professor Emeritus of Strategy and Information Management, IMD

Colin Mayer, Peter Moores Professor of Management Studies, Oxford University

Pierpaolo Montana, Group Chief Risk Officer, Mediobanca

John Taysom, Visiting Professor of Computer Science, UCL

D. Sykes Wilford, W. Frank Hipp Distinguished Chair in Business, The Citadel

CONTENTS

RISKS

- 10 How the insurance industry is fighting climate change and transforming itself by doing so**
Ludovic Subran, Chief Economist, Allianz SE
Arne Holzhausen, Head of Economic Research's Insurance, Wealth, and ESG team, Allianz SE
- 16 The impact of extreme cyber events on capital markets and insurers' asset portfolios**
Martin Eling, Director, Institute of Insurance Economics, and Professor in Insurance Management, University of St. Gallen
Werner Schnell, Researcher, Institute of Insurance Economics, University of St. Gallen
- 28 Assessing the economic impact of climate change**
Jérôme Jean Haegeli, Group Chief Economist, Swiss Re
Patrick Saner, Head Macro Strategy, Global Economic Research & Strategy, Swiss Re
- 34 The future of insurance: Personalized, digitalized and connected**
Matt Hutchins, Partner, Capco
Ernst Renner, Partner, Capco
- 48 What drives policyholders' relative willingness to pay?**
Florian Klein, Corporate Strategy Manager, Helvetia Insurance Group
Hato Schmeiser, Professor of Insurance Economics and Risk Management, University of St. Gallen
- 62 Strategies for responding to pandemic risk: Removal and/or redistribution**
Paula Jarzabkowski, Professor of Strategic Management, University of Queensland and Bayes Business School, City, University of London
Elisabeth Krull, Postdoctoral Research Fellow in Strategy, Bayes Business School, City, University of London
Mustafa Kavas, Lecturer in Strategic Management, University of Sheffield
Konstantinos Chalkias, Senior Lecturer, Department of Management, Birkbeck, University of London
- 70 Pandemic insurance: A portfolio management approach**
Alexis Louaas, Postdoctoral Researcher, CREST-Ecole Polytechnique
Pierre Picard, Professor of Economics, CREST-Ecole Polytechnique
- 76 Using risk analytics to prevent accidents before they occur – the future of insurance**
Montserrat Guillen, Full Professor, Director of the Riskcenter, Universitat de Barcelona
Alberto Cevolini, Associate Professor, Department of Political and Social Sciences, University of Bologna
- 84 Economic policy in a world where inflation, production, and productivity are mismeasured and misleading, and where macro-models cannot work effectively**
Steven W. Kohlhagen, Former Professor of Economics, University of California, Berkeley
D. Sykes Wilford, W. Frank Hipp Distinguished Chair in Business Administration, The Citadel

TECHNOLOGY

98 Innovation as a competitive advantage – experiences and insights from Baloise

Alexander Bockelmann, Group Chief Technology Officer, Baloise Group

104 Artificial intelligence and digital transformation of insurance markets

Christopher P. Holland, Professor of Information Management, Head of Data Analytics, and Co-Director of TECHNGI, Loughborough University

Anil S. Kavuri, Research Associate and Visiting Lecturer, Loughborough University

116 The changing face of insurance

John Pyall, Senior Product and Wordings Manager, Great Lakes Insurance SE, Munich Re

124 How to deliver the benefits of digitalization as an incumbent in the insurance industry?

Barbara Liebich-Steiner, Chief Digital Officer and Head of Digital Strategy & Solutions, UNIQA Insurance Group

128 How IoT can disrupt claims processes

Jörg Tobias Hinterthür, Former Head of Smart Home Innovation Lab, Zurich Insurance

132 Lloyd's Blueprint Two – the building blocks for industrializing AI in insurance

Alvin Tan, Principal Consultant, Capco

138 How digital capabilities can drive innovation in life insurance and annuities

Paula Nelson, Co-Head of Individual Markets, Global Atlantic Financial Group

142 Bridging the gap between medicine and insurance: How to leverage data, artificial intelligence, and neuroinformatics for insurance and financial risk management

Anitha Rao, CEO and Founder, Neurocern, and Board-Certified Geriatric Neurologist, Department of Neurology, University of Toledo College of Medicine

Mark Weindling, Chief Technology Officer, Neurocern

Paul Ridgeway, Strategy, Chief Financial Officer, Neurocern

Liz Kennedy, Project Manager, Neurocern

Harris A. Eyre, Chief Medical Officer, PRODEO, and Co-Lead, Neuroscience-inspired Policy Initiative, OECD

Paulo Pinho, Vice President and Medical Director of Innovation, Diameter Health

148 The future of insurance companies: Prospects from an interview study

Claudia Lehmann, Professor, Digital Innovation in Service Industries, and Executive Director, Center for Leading Innovation and Cooperation (CLIC), HHL Leipzig Graduate School of Management

Thomas Zwack, Partner, Capco Germany

Simon Meier, Innovation Scout, ERGO Group AG

Tim Mosig, Research Associate, Center for Leading Innovation and Cooperation (CLIC), HHL Leipzig Graduate School of Management

152 Open innovation – enabling insurers to adapt and thrive

Matt Connolly, CEO, Sønr

Matt Ferguson, Managing Partner, Sønr

REGULATION

160 Insurance and the journey towards carbon net-zero

Richard Roberts, Investment Director – Global Insurance, abrdrn

166 Regulating insurtech in the European Union

Pierpaolo Marano, Professor of Insurance Law, Catholic University of the Sacred Heart, Milan, Italy, and University of Latvia, Riga, Latvia
Michele Siri, Jean Monnet Professor of European Union Financial and Insurance Markets Regulation, Department of Law, University of Genoa, Italy

178 An emergency health financing facility for the European Union: A proposal

Simon Ashby, Professor of Financial Services, Vlerick Business School, Ghent University

Dimitrios Kolokas, Doctoral Fellow, Vlerick Business School, Ghent University

David Veredas, Professor of Financial Markets, Vlerick Business School, Ghent University

192 ESG and the insurance landscape

Charles Sincock, ESG Lead, Capco

Hugo Gouvras, Senior Consultant, Capco

200 The unintended consequences of macroprudential regulation in insurance and banking: Endogenous financial system instability induced by regulatory capital standards

Periklis Thivaos, Partner, True North Partners LLP

Laura Nuñez-Letamendia, Professor of Finance, IE Business School



DEAR READER,

Welcome to edition 54 of the Capco Institute Journal of Financial Transformation.

In this edition we explore recent transformative developments in the insurance industry, through Capco's Global Insurance Survey of consumers in 13 key markets, which highlights that the future of insurance will be personalized, digitalized, and connected. Other important papers cover topics high on global corporate and political agendas, from ESG and climate change to artificial intelligence and regulation.

The insurance industry has been undergoing transformation in recent years, with insurers responding to the needs and expectation of tomorrow's customers, for products that were tailored, flexible, and available anytime, anyplace, and at a competitive price.

COVID-19 has accelerated such change, forcing insurers to immediately implement programs to ensure they can continue selling their products and services in digital environments without face-to-face interaction. New entrants have also spurred innovation, and are reshaping the competitive landscape, through digital transformation.

The contributions in this edition come from a range of world-class experts across industry and academia in our continued effort to curate the very best expertise, independent thinking and strategic insight for a future-focused financial services sector.

As ever, I hope you find the latest edition of the Capco Journal to be engaging and informative.

Thank you to all our contributors and thank you for reading.

A handwritten signature in black ink, appearing to read 'Lance Levy', with a stylized, flowing script.

Lance Levy, Capco CEO

STRATEGIES FOR RESPONDING TO PANDEMIC RISK: REMOVAL AND/OR REDISTRIBUTION

PAULA JARZABKOWSKI | Professor of Strategic Management, University of Queensland and Bayes Business School, City, University of London

ELISABETH KRULL | Postdoctoral Research Fellow in Strategy, Bayes Business School, City, University of London

MUSTAFA KAVAS | Lecturer in Strategic Management, University of Sheffield

KONSTANTINOS CHALKIAS | Senior Lecturer, Department of Management, Birkbeck, University of London

ABSTRACT

The pandemic has an ongoing financial impact on the global economy, resulting in its uninsurability and ultimately an insurance protection gap. While solutions exist to address other protection gaps caused by large-scale disasters such as repeated flooding, earthquakes, and terrorism, pandemics differ and require novel solutions. This paper builds on Jarzabkowski et al.'s (2018) strategic response framework to large-scale, catastrophic disasters and applies it to the pandemic insurance protection gap. Set in the U.K. context, the research empirically studies various insurance solutions that are being proposed for pandemic risk and presents and evaluates four types of responses.

1. INTRODUCTION

The COVID-19 pandemic has, in addition to causing losses of lives and “social normality”, severely affected the global economy and economic activity [Brammer et al. (2020)]. This was largely the result of measures taken to prevent the disease from spreading [OECD (2021)]. The OECD (2021) estimates that, in the U.K., one month of government restrictions costs businesses about U.S.\$88 billion (~£64.14 billion). Normally, if they have a business interruption (BI) insurance policy, losses that affect organizations’ ability to conduct business are covered by their insurance policies. However, given the severity and the systemic nature of the pandemic, a jarring protection gap has been exposed. Systemic risks, meaning losses of large scale that occur at the same time across many organizations, lines of business, and regions, are too big and concurrent to be insurable. The sheer number of losses caused by the pandemic would not be possible to cover by the insurance industry alone [Schanz et al. (2020)]. In addition, the novelty of the nature of COVID-19 led to uncertainties about whether or not existing BI insurance policies cover pandemic risk. For example, many business interruption policies have

been proved to have ambiguous wording that is open to interpretation, or are linked to property, equipment damage, or inaccessibility [OECD (2021)] that are more relevant to other disasters, such as fire or flood, but not relevant to a pandemic. In addition, only a few businesses have policies in place that would cover these types of losses [OECD (2021)]. Going forward, given its systemic nature [Schanz et al. (2020)], insurance firms are likely to exclude insurance cover for pandemic risk [OECD (2021)]. Alternatively, if such insurance is made available, to cover the range and magnitude of potential losses it will likely be unaffordable for most businesses, thus resulting in an “insurance protection gap” [Jarzabkowski et al. (2018)].

Insurance protection gaps are often addressed by national government interventions into the insurance industry [Jarzabkowski et al. (2018)]. Examples of gaps include flooding risk in the U.K., earthquake risk in California, or commercial property terrorism risk in Australia. The government interventions, designed to ensure continuity of insurance in the face of extreme events [Jarzabkowski et al. (2019), McAneny et al. (2016)], are referred to as “protection

gap entities” (PGEs). PGEs are entities that “bring together different market and non-market stakeholders in an effort to address the protection gap by transforming uninsured risk into insurance-based products that can be transferred onto government balance sheets or into global financial markets in order to provide capital for recovery following a disaster” [Jarzabkowski et al. (2018)]. In the U.K., examples of PGEs include Pool Re and Flood Re, which are single-peril risk pools set up to support the private insurance market to provide commercial terrorism cover and residential flood insurance cover, respectively.

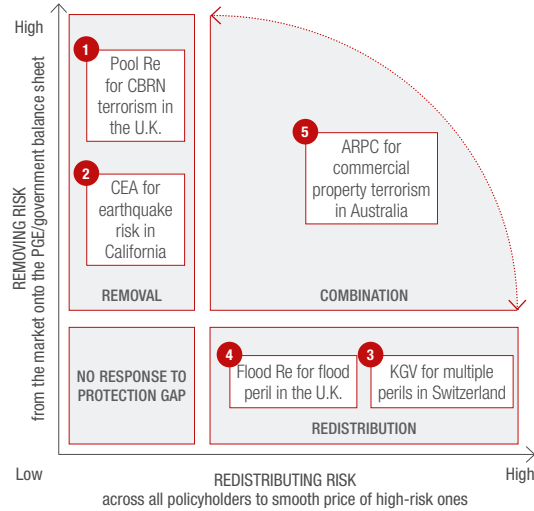
Globally, PGEs are growing, generating a range of different risk-sharing schemes that aim to address protection gaps for various large-scale disasters [Jarzabkowski et al. (2018)]. The goal of these schemes is broadly to transform uninsured risk into insurance products. These can then, at least partially, be further transferred to global reinsurance markets in order to provide capital for recovery following a disaster. Considered as “archetypical forms” of government involvement, PGEs, nevertheless, vary considerably in terms of their governance structures, the risks covered (e.g., single- or multi-peril), the type of risk solution (e.g., insurance versus reinsurance), and the funding model (e.g., policyholders’ premiums, public or private levy). Despite these differences, PGEs have important common underlying principles in their strategic responses to protection gaps and how they share risk with market and non-market parties [Jarzabkowski et al. (2018)]. Specifically, they primarily respond to catastrophic risks by either removing risk from the market or redistributing risk across all policyholders [Jarzabkowski et al. (2018)].

In this paper, we first explain how existing protection gap entities address insurance protection gaps. We then consider some of the solutions to pandemic business interruption insurance proposed in the U.K., in order to evaluate whether and how protection gap entities can be adapted to address systemic risks such as pandemics.

2. A STRATEGIC RESPONSE FRAMEWORK FOR PANDEMIC RISK

This section introduces the strategic response framework to catastrophic risk developed by Jarzabkowski et al. (2018). These strategic responses can be categorized into various degrees of removing risk from the market and redistributing it across all policyholders to smooth the price of those at high risk (Figure 1).

Figure 1: Protection gap strategic response framework



Notes:

- 1 Remove all risk from the market to the PGE/government
- 2 Remove risk to the PGE and return only some to the market (e.g., through reinsurance or insurers’ retention)
- 3 Redistribute all of the risk across all policyholders
- 4 Redistribute some of the risk across all policyholders
- 5 Remove risk from the market to the PGE/government AND redistribute across all policyholders

Source: Jarzabkowski et al. (2018)

2.1 Removal

Removing risk is a response that removes the risk from the (insurance) market onto the balance sheet of the protection gap entities, and potentially then to the government (vertical axis, Figure 1). This response is particularly likely for risk that is seen as too volatile or extreme for the market to take. Insurance companies may accept premiums from insureds, so ensuring that policies can still be issued and serviced, and then pass the entire premium associated with this risk to the protection gap entities. The PGE can provide the cover because it has access to a government guarantee (limited or unlimited) to pay for losses, as with the terrorism reinsurance scheme Pool Re in the U.K. Alternatively, it can generate its own reserves in the private market (e.g., reinsurance) to cover losses, as with the California Earthquake Authority (CEA).

The extreme position on this dimension is removing the risk fully from the market but responses may vary along the continuum, by removing only some of the most extreme risks. For example, a PGE might remove a “top layer” of risk as defined by market signals, such as withdrawal of insurance supply, while risk below a certain threshold is retained by insurers in the usual way.

2.2 Redistribution

Redistributing risk is a response that takes the risk of loss by a relatively small group of highly exposed policyholders and shares it across the wider pool of variably exposed policyholders through a subsidy (horizontal axis, Figure 1). Low-risk policyholders pay a slightly higher premium than they would normally have to based on their actual risk, which in turn is used to subsidize affordable premiums for high-risk policies. The protection gap entity, typically formed as an insurance or reinsurance pool, collects the premiums from all policyholders and uses the levy to smooth pricing across all participants in the risk pool.

Protection gap entities that adopt the strategic response of redistributing risk attempt to create a wide pool of insureds, in which the premiums of the many policyholders, widely distributed across possible exposures, can continue to cover the extreme losses of the few. However, they can only do so with some government legislation. Examples are the flood insurance scheme Flood Re in the U.K., where a government-enabled levy on lower-risk policyholders subsidizes higher-risk policyholders in order to offer them affordable insurance, or the KGV (Cantonal Building Insurance) in Switzerland, where a not-for-profit government monopoly makes insurance mandatory so that it can be offered at a fixed affordable price.

2.3 Combination

Removing and redistributing risk are not necessarily either/or responses. As demonstrated in Figure 1, PGEs can combine risk removal and risk redistribution, albeit not necessarily in equal measures. Rather, they may take an approach where they remove some elements of risk and redistribute others. Often, such changes occur in an evolutionary way. A protection gap entity may initially be established to solve, for example, the problem of lack of supply for a very volatile risk, such as earthquakes or terrorism, through a strategic removal response. Once supply begins to return, it might also employ some redistribution of risk through industry retentions that

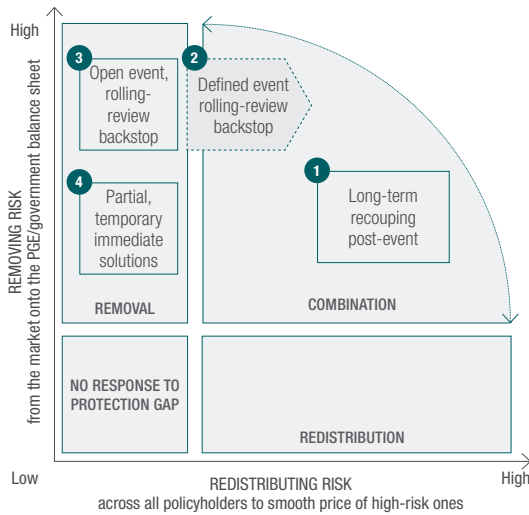
are spread across a pool of policyholders. For example, the Australian Reinsurance Pool Corporation (ARPC) continues to remove that proportion of the terrorism risk for which the global (re)insurance industry has neither appetite nor sufficient capital. At the same time, ARPC has progressively scaled down the level of risk removal and included some risk redistribution by pushing insurers to retain more of the terrorism risk losses on their own balance sheet to a specified threshold that is aggregated across the industry.

While these are more or less effective responses to the protection gaps caused by large-scale and catastrophic disasters such as earthquakes, floods, and terrorist attacks [Jarzabkowski et al. (2018)], pandemics differ [OECD (2021), Schanz et al. (2020), Schanz et al. (2021)]. Firstly, they are systemic in the sense that especially in the business interruption insurance arena, they contain “elements of uncontrollable aggregation and correlation which defy insurability” [Schanz et al. (2020)]. Secondly, it is complicated to know when a specific pandemic event ends; for example, are further waves of infection and lockdown part of a single event or are they separate events? Thirdly, the actual cause or trigger for the losses is not precise – it is not necessarily the specific contagion of a pandemic per se that causes the business interruption, but government decisions for lockdown as part of their public policy choices. These characteristics make pandemics more problematic to insure, exacerbating the “protection gap” issue [Lloyd’s (2020), OECD (2021), Schanz et al. (2020)]. Nonetheless, useful lessons can be learned from these existing PGEs strategic responses in order to consider how to address insurance protection gaps for pandemics in the future. We, therefore, explain the principles underlying existing PGEs and apply them to evaluate some of the pandemic risk-sharing solutions currently proposed.

Our research identified four responses to the pandemic based on a series of interviews with insurers, reinsurers, government, and businesses; observations of key events, industry forums, and working groups over the period of 1.5 years; and documents including news articles, magazine articles, and government announcements. Based on the various solutions proposed during the period of our research, some of which were also acted upon, we now use the Protection Gap Strategic Response Framework to evaluate four potential types of responses to pandemic protection gaps (see Figure 2). The proposed typology reflects the proposed solutions in the U.K. but is also relevant for other jurisdictions.¹

¹ An earlier version of this appeared in Schanz et al. (2021).

Figure 2: Four potential responses to the pandemic protection gap



Notes:

- 1 Remove risk to the insurance-led PGE and redistribute across all policyholders with government guarantee for default
- 2 Remove risk to the PGE/government and later may return some to the market (e.g., through reinsurance or insurer retention)
- 3 Remove all risk from the market
- 4 Remove risk partially and temporarily from the market

Source: Paula Jarzabkowski, adapted from Schanz et al. (2021)

Broadly, each of these responses intends to protect small- and medium-sized enterprises (SMEs) against business interruption from pandemics. However, they vary in terms of their design, time scale, scope, product type, and degree of industry capitalization [Schanz et al. (2021)]. The typology is not intended to reflect any specific solution, as these are currently evolving as the pandemic persists. Rather, the aim is to provide a framework for evaluating the range of solutions under development according to their key risk-sharing characteristics.

TYPE 1: LONG-TERM RECOUPING POST-EVENT (REDISTRIBUTION WITH SOME REMOVAL)

Type 1 aims to provide businesses with an immediate cash injection to support fast recovery. It is a post-event insurance product that is paid for over the long term. Backed by a government credit risk guarantee, it relies on both government capacity and insurance industry commitment.

Type 1 offers a flexible pricing mechanism where businesses can receive a payment immediately during a pandemic but must buy multi-year policy contracts from insurers. This allows insurers to recover upfront claims costs over the full policy term while ensuring the product remains affordable for customers by spreading the costs over time. The product, therefore, involves mandatory premium payments over a pre-agreed policy term (e.g., 10-15 years). In the event of premature policy cancellation, businesses face penalties to ensure insurers' claims costs are recovered. To mitigate the risk of payment defaults, governments would be required to guarantee policyholders' future premiums.

Given these characteristics, Type 1 is primarily a risk redistribution response with some element of risk removal. In the short term, the insurance industry covers the risk to pay claims without receiving the full premium. This initial industry subsidization of the premiums will be redistributed across the policyholders through recouping premiums over time via a multi-year insurance contract (see Figure 2). At the same time, the risk of default on long-term premiums is covered by a government guarantee that effectively moves the risk of default to the public sector.

This combination approach has two challenges. First, it can only work where policyholders are compelled to take out a multi-year product. Yet, even with a compulsory, long-term recoupment, some businesses may default as a result of other disruptions to their business model, cash flow, and overall survival. Hence, embedding a risk-removal mechanism in the form of a government backstop is required to guarantee the premiums in light of a possible default. Second, regardless of whether a guarantee is in place, moral hazard remains a problem. Businesses could take the upfront policy despite a high uncertainty about whether they will remain robust for the life of the policy. For example, many SMEs could be offered payments through a recoupment scheme even though they have declining or failing business models that will realistically not survive. This would require developing careful parameters in offering the product. Yet, although some of these businesses will fail and be unable to meet the long-term recoupment of premiums, the insurance acts as an economic stimulus. At the same time, insurers' own risks are minimized due to the government guarantee.

TYPE 2: DEFINED-EVENT, ROLLING-REVIEW BACKSTOP (REMOVAL WITH POTENTIAL FUTURE REDISTRIBUTION)

Type 2 is a large-scale, government-backed premium pool to reinsure pandemic-specific non-damage business interruption (NDBI) insurance cover. Typically formed as a public-private partnership (PPP), it is largely insurance industry-led in its execution but relies on the government as a financial backstop to cover any claims.

Under this scheme, insurance firms design and offer products specifically around pandemic-related NDBI and also collect the premiums. These premiums are then paid into a pool that acts as the designated reinsurer and provides payments to policyholders that are affected by a pandemic-related event as defined in the enabling agreement of the government. The government-defined event is critical because that will determine whether and when payments are triggered. While the insurance industry administers the scheme, it does not retain any of the risks. Instead, the designated reinsurance pool will pay all claims. The government provides a financial backstop of a limited or unlimited guarantee to step in if the assets in the pool are exhausted, as might occur due to a significant national lockdown or a series of medium-sized lockdowns.

As observed by Jarzabkowski et al. (2018), government-guaranteed pools tend to be designed with a (rolling) review period. This typically involves a government inquiry every three to five years to ascertain whether a government backstop is needed to ensure ongoing cover, or whether the private market can take more or all of the risk. These reviews provide an opportunity to increase retention of risk by the primary market and to increase the amount of commercial reinsurance cover that might trigger prior to the government backstop. Rolling reviews enable private market appetite and capacity to be reconsidered regularly, incentivizing the insurance industry to not simply rely on the government as “the insurer of last resort”. The rolling review of Type 2 may, therefore, eventually involve some redistribution of risk across the insured population, as indicated by the arrow in Figure 2.

TYPE 3: OPEN EVENT, ROLLING-REVIEW BACKSTOP (REMOVAL)

While Types 1 and 2 aim to provide protection against pandemic risk, Type 3 takes a broader, multi-peril approach. It is designed for non-damage business interruption as a result of any future systemic events, such as a cyber event, or, potentially, the systemic effects of climate change.

In its design, this scheme has similarities to Type 2 but is not peril-specific. Type 3 is intended to be a catch-all for disasters that shock the system and hence the exact peril or the event that triggers a claim is not specified a priori. This scheme requires a full government backstop as the private market would not be able to operate the scheme given the open definition of both the peril and the event triggers, resulting in uncertainty. Yet, the scheme may be executed in the same way as Type 2, with premiums being collected against systemic risk and paid into a government-designated reinsurance pool that can provide a buffer for the government backstop.

Type 3 recognizes that, just as the COVID-19 pandemic was unanticipated, it is difficult to predict what the next systemic disaster will be. The scheme also counters current principles of insurance related to indices, models, pricing, and solvency requirements. As such, any premium charged would be difficult, if not impossible, to directly link to, or reflect the actual risk of a disaster. Hence, Type 3 might be operationalized as a form of levy upon insurance policies that would be passed directly to the government pool, rather than to a specified “systemic risk” insurance product that would be sold by insurers, with the premium then transferred to the government pool.

As with Type 2, this option would also operate as a risk removal scheme. In this scenario, the government would need to declare events as systemic, which would then trigger the backstop claims related to those declared events. Such systemic risk could be another pandemic, a widespread cyberattack, or even potentially widespread and unprecedented extreme weather disasters, such as the Australia-wide 2019-2020 bushfires, or even the recent 2021 European flooding, where Germany’s government committed €30 bln for reconstruction alone [DW (2021)]. In this situation, the term systemic would need considerable definition. For example, if systemic means affecting the global economy, of widespread geographic and industrial spread, and concurrent, then pandemic fits the definition, but something like bushfires or flood may be less easy to define.

The main challenge for Type 3, therefore, is the problem of declaring the trigger for such an event. Knowledge about which risks are likely to be systemic is continuously evolving and risks that are not currently on the horizon at the time of designing the protection gap entities may be systemic in the future. We suggest that the pool of premium that is built up through a Type 3 scheme is partly reinvested to better understand which types of risks may be identified as systemic and to help mitigate against their effects. This could be built into a three-to-five year rolling review process, enabling it to

be responsive to emerging risks that are considered systemic. More fundamentally, Type 3 is an untested concept. Bundling different types of systemic risk, such as pandemic and cyber-attack, within a single protection gap entity response will present major challenges in terms of complexity and exposure.

TYPE 4: PARTIAL, TEMPORARY IMMEDIATE SOLUTIONS (REMOVAL)

Type 4 aims to resolve the lack of appetite from the private insurance market for offering insurance products to cover losses for specific business sectors. This includes government-backed solutions that partially and temporarily remove a specific risk from a business sector to the government balance sheet.

Since the beginning of the COVID-19 pandemic, the U.K. government has introduced three government-backed solutions to address sector-specific risk: (1) the Trade Credit Reinsurance Scheme, (2) the Film and Television Production Restart Scheme, and (3) the currently proposed Live Events Reinsurance Scheme. Each scheme was developed in close collaboration between the insurance industry and the U.K. government, with claims covered by the government, and designed to be temporary solutions rather than to remain in place after the COVID-19 crisis. We, therefore, label Type 4 as “partial, temporary immediate risk removal” solutions.

The Trade Credit Reinsurance Scheme was announced in June 2020 in response to the concerns of both insurance firms that offer trade credit insurance (TCI) and business associations that represent SMEs typically with supply chains [Ralph (2020)]. The scheme served as a state-backed reinsurance program by providing a guarantee of up to £10 bln for insurers to be able to continue to offer TCI [ABI (2021)]. Under the scheme, the government agreed to reinsure 90% of insurance claims and, in exchange, take 90% of the premiums up to a total insurer loss ceiling of £3 bln, and 100% of claims between £3 bln and £10 bln [BEIS (2020)]. Consequently, despite the increased risk of non-payment due to the ongoing pandemic, the scheme enabled the provision of trade credit insurance to U.K. businesses that allowed them to continue trading on credit terms. This provided financial liquidity and cash flow but also boosted confidence, ensuring ongoing economic activity. Initially set up to run for six months, the scheme was extended to the end of June 2021 and has since ceased [ABI (2021)]. Yet, there are ongoing concerns that insurers may continue to have little appetite to insure businesses that rely on face-to-face contact such as retail shops, hospitality, and events [Smith and Arnold (2021)].

The Film and Television Production Restart Scheme was launched by the U.K. government in July 2020 to assist in the restart of productions that have been suspended or postponed due to the withdrawal of the private insurance market for COVID-19 related risks. The government allocated £500 mln to the scheme to offer insurance for productions against losses arising from COVID-19 interruptions, including filming delays and cast and crew illnesses. Production companies that meet the eligibility criteria can obtain cover directly from the government up to a cap of £5 mln per production for a fee of 1% of the production budget. To date, the scheme has supported numerous productions and helped save many jobs in the film and TV industry [DCMS (2021a)]. The scheme, which was initially launched to run for six months has been extended until December 2021 in order to cover the summer shooting schedule.

The Live Events Reinsurance Scheme was launched in the U.K. in September 2021 [DCMS (2021b)] after a lengthy period of lobbying from the live events and entertainment industry. The scheme allows event organizers to buy insurance directly from insurance firms [Payne and Thomas (2021)] and the government commits more than £750 mln to costs incurred in the event of cancellations due to COVID-19 restrictions legally enforced by the U.K. government [DCMS (2021b)]. The scheme was initially launched in September 2021 with provision to run until September 2022.

Type 4 provides rapid, temporary, government-backed (re-)insurance solutions to mitigate the consequences of the unavailability of (re)insurance arising from pandemic risk. These solutions, however, are partial as they aim to cover only specific risks, such as trade credit, or particular sectors, such as film and TV production or live events. The positive aspect of such solutions is that they can be instated rapidly at the instigation of the government, without needing to go through policy changes or legislation and so can address immediate demand. However, the downside is that they are, in turn, partial, which means that only a few business sectors can be covered according to government decisions about what discrete sectors are in critical need. Moreover, their temporary nature assumes that the private market will have an appetite to re-assume such risk at the end of the current pandemic. As that is yet untested, such solutions may eventually need to be legislated to become more permanent.

In conclusion, for each of the four types presented, there are three key considerations. First, whether the cover is mandatory or voluntary. This will determine the size of the risk pool and the scope for risk redistribution. Second, each of

these options necessitates government involvement to varying degrees, either through legislation to support redistribution or through a government guarantee or backstop. Third, questions of fairness arise. For example, the government will support those who have been risk-averse and proactive in taking out pandemic insurance, yet it will also have to prop up those without insurance. Furthermore, in Type 4 some specified risks and sectors receive support while others do not. In light of this, a mandatory approach might be most appropriate for systemic risks, particularly for Types 2 and 3, where the cover involves a full government guarantee.

Despite being based largely on risk removal by the government, each of the types proposed indicates a valuable role for the insurance industry to play in acting as professional distributors of the insurance policies that will be backed by the government, as claims managers, and as experts in risk mitigation and prevention. Effective communication and exchange between the government and the insurance industry are, therefore, vital. In the short- to medium-term, redistribution of such risk (Figure 2) is likely to be difficult to achieve; that is, pandemic risk or other systemic risks cannot easily be spread amongst a large pool of policyholders without government backing.

3. CONCLUSION

The purpose of this article is to outline the solutions currently being proposed to address the pandemic insurance protection gap and provide a framework for evaluating them. As our Strategic Response Framework clarifies, a government backdrop for risk removal will need to be involved when addressing a risk of such magnitude. The schemes that have successfully been launched (Type 4) are all temporary, with the aim of a return to the private market, which may not be possible in the short- or even medium-term. We, therefore, recommend ongoing dialogue and collaboration between the government and the insurance industry in bringing any of these proposed solutions (Types 1 to 3) to fruition as working

insurance products that can ensure continuity of pandemic insurance for businesses. Furthermore, as businesses are the biggest carriers of these risks, it is important to include their needs and experiences in developing these solutions.

Our Protection Gap Strategic Response Framework and its application to pandemic risk also have implications for other burgeoning systemic risks. While the pandemic is a significant event that has hit economies around the world hard, other, longer-term risks also need to be addressed to minimize insurance protection gaps. Rising global temperatures have caused a climate crisis in which extreme weather events such as flooding, droughts, cyclones, and bushfires have almost doubled to 6,681 events over the past 20 years, costing U.S.\$4.07 trillion in global economic losses [UNDRR (2020)]. As much of this risk is underinsured, the burden of paying for such losses falls on governments and the affected communities and individuals. The problem is that the global insurance and reinsurance market that pays for such losses [Jarzabkowski et al. (2015)] will break down under the impact of climate change. If temperatures do rise by 1.5C by the end of the century, annual costs incurred by damages as a result of climate change could reach €71 bln compared to €22.9 bln in 1981 [Smith and Arnold (2021)]. Yet, the relatively long-term impact of climate change forestalls a sense of urgency and can delay change [Slawinski and Bansal (2015)]. By contrast, sudden systemic shocks, such as the current pandemic, provide opportunities for learning about how to respond to the protection gap on other systemic risks. While climate risk differs considerably from pandemic risk in terms of the speed at which risks become uninsurable [Rosenthal et al. (2001)], nonetheless, urgent strategic responses to climate risk are needed. We, therefore, hope that this article provides grounds for considering some options through which governments and the insurance industry, alongside those policyholders who are increasingly affected, can plan their strategic responses in advance of a crisis or collapse of insurance.

REFERENCES

- ABI, 2021, "Trade credit insurance," Association of British Insurers, <https://bit.ly/3DfB8LA>
- Brammer, S., L. Branicki, and M. Linnenluecke, 2020, "Covid-19, societalization, and the future of business in society," *Academy of Management Perspectives* 34:4, 493–507
- BEIS, 2020, "Trade credit reinsurance scheme," Department for Business, Energy and Industrial Strategy (UK Government), <https://bit.ly/3oAI57e>
- Boers, N., B. Goswami, A. Rheinwalt, B. Bookhagen, B. Hoskins, and J. Kurths, 2019, "Complex networks reveal global pattern of extreme-rainfall teleconnections," *Nature*, 566:7744, 373–377
- DCMS, 2020, "Film & TV production restart scheme," Department for Digital, Culture, Media & Sport and HM Treasury (UK Government), <https://bit.ly/3mt8IXM>
- DCMS, 2021a, "Live Events Reinsurance Scheme," Department for Digital, Culture, Media & Sport and HM Treasury (UK Government), <https://bit.ly/3mjJET6>
- DCMS, 2021b, "£800 million Reinsurance Scheme officially opens to help give festivals, conferences and live events cover to plan with confidence," Department for Digital, Culture, Media & Sport, HM Treasury, The Rt Hon Nadine Dorries MP, The Rt Hon Rishi Sunak MP, <https://bit.ly/3mpjaQe>
- DW, 2021, "German floods: leaders agree on €30-billion reconstruction fund," *Deutsche Welle*, <https://bit.ly/3ldPFS8>
- Hällgren, M., L. Rouleau, and M. De Rond, 2018, "A matter of life or death: how extreme context research matters for management and organization studies," *Academy of Management Annals* 12:1, 111–153
- Jarzabkowski, P., R. Bednarek, and P. Spee, 2015, *Making a market for acts of God: the practice of risk trading in the global reinsurance industry*, Oxford University Press
- Jarzabkowski, P., K. Chalkias, E. Cacciatori, and R. Bednarek, 2018, "Between state and market: protection gap entities and catastrophic risk," Cass Business School, City, University of London, <https://bit.ly/3AejXID>
- Jarzabkowski, P., Bednarek, R., Chalkias, K., and Cacciatori, E. (2019). Exploring inter-organizational paradoxes: Methodological lessons from a study of a grand challenge. *Strategic Organization*, 17(1), 120–132
- Lloyd's, 2020, "Open source frameworks for systemic risk," Lloyd's of London, <https://bit.ly/3le9c4S>
- Lucas, C., and K. Booth, 2020, "Privatizing climate adaptation: how insurance weakens solidaristic and collective disaster recovery," *Wiley Interdisciplinary Reviews: Climate Change*, 11:6, e676
- McAneny, J., D. McAneny, R. Musulin, G. Walker, and R. Crompton, 2016, "Government-sponsored natural disaster insurance pools: A view from down-under," *International Journal of Disaster Risk Reduction* 15, 1–9
- OECD, 2021, "Responding to the COVID-19 and pandemic protection gap in insurance," Organisation for Economic Co-operation and Development, <https://bit.ly/3A772bi>
- Payne, S., and D. Thomas, 2021, "UK government unveils £750m insurance scheme to support live events," *Financial Times*, August 6, <https://on.ft.com/3BfkjQz>
- Ralph, O., 2020, "UK government to guarantee £10bn of trade credit insurance," *Financial Times*, June 4, <https://on.ft.com/3lak7w5>
- Rosenthal, U., A. Boin, and L. K. Comfort, 2001, *Managing crises: threats, dilemmas, opportunities*, Charles C. Thomas Publisher
- Schanz, K.-U., M. Eling, H. Schmeiser, and A. Braun, 2020, "An investigation into the insurability of pandemic risk," *The Geneva Association*, <https://bit.ly/2WR479e>
- Schanz, K.-U., P. Jarzabkowski, E. Cacciatori, K. Chalkias, M. Kavas, and E. Krull, 2021, "Public and private sector solutions to pandemic risk: opportunities, challenges and trade-offs," *The Geneva Association*, <https://bit.ly/3lcj2n0>
- Slawinski, N., and P. Bansal, 2015, "Short on time: intertemporal tensions in business sustainability," *Organization Science* 26:2, 531–549
- Smith, I., and M. Arnold, 2021, "Covid risks making face-to-face sectors harder to insure, regulator says," *Financial Times*, July 6, <https://on.ft.com/3DaBbIE>
- UNDRR, 2020, "The human cost of disasters: An overview of the last 20 years (2000-2019)," United Nations Disaster Risk Reduction

© 2021 The Capital Markets Company (UK) Limited. All rights reserved.

This document was produced for information purposes only and is for the exclusive use of the recipient.

This publication has been prepared for general guidance purposes, and is indicative and subject to change. It does not constitute professional advice. You should not act upon the information contained in this publication without obtaining specific professional advice. No representation or warranty (whether express or implied) is given as to the accuracy or completeness of the information contained in this publication and The Capital Markets Company BVBA and its affiliated companies globally (collectively "Capco") does not, to the extent permissible by law, assume any liability or duty of care for any consequences of the acts or omissions of those relying on information contained in this publication, or for any decision taken based upon it.

ABOUT CAPCO

Capco, a Wipro company, is a global technology and management consultancy specializing in driving digital transformation in the financial services industry. With a growing client portfolio comprising of over 100 global organizations, Capco operates at the intersection of business and technology by combining innovative thinking with unrivalled industry knowledge to deliver end-to-end data-driven solutions and fast-track digital initiatives for banking and payments, capital markets, wealth and asset management, insurance, and the energy sector. Capco's cutting-edge ingenuity is brought to life through its Innovation Labs and award-winning Be Yourself At Work culture and diverse talent.

To learn more, visit www.capco.com or follow us on Twitter, Facebook, YouTube, LinkedIn Instagram, and Xing.

WORLDWIDE OFFICES

APAC

Bangalore
Bangkok
Gurgaon
Hong Kong
Kuala Lumpur
Mumbai
Pune
Singapore

EUROPE

Berlin
Bratislava
Brussels
Dusseldorf
Edinburgh
Frankfurt
Geneva
London
Munich
Paris
Vienna
Warsaw
Zurich

NORTH AMERICA

Charlotte
Chicago
Dallas
Hartford
Houston
New York
Orlando
Toronto
Tysons Corner
Washington, DC

SOUTH AMERICA

São Paulo



WWW.CAPCO.COM



CAPCO
a wipro company