

Institution: City, University of London		
Unit of Assessment: 17, Business and Management		
Title of case study: Improving policy and industry strategies for financing the aftermath of large-scale disasters		
Period when the underpinning research was undertaken: 2016 - ongoing		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Prof. Paula Jarzabkowski	Professor of Strategic Management	2013 – current
Dr. Eugenia Cacciatori	Senior Lecturer in Management	2013 – current
Dr. Konstantinos Chalkias	Research Fellow	2013 – 2019
Dr Mustafa Kavas	Research Fellow	2019-present
Dr Elisabeth Krull	Research Fellow	Jan 2020-present
Period when the claimed impact occurred: 2017 – ongoing		
Is this case study continued from a case study submitted in 2014? N		
<p>1. Summary of the impact</p> <p>Disasters such as flooding, earthquakes and acts of terrorism cause their victims significant economic losses that worsen their already significant human costs. Our research provides novel and much needed conceptual frameworks and new terminology to evaluate the activities of 'Protection Gap Entities' (PGEs), that is, organizations that operate between public and private sector to provide financial protection against disasters. Stakeholders around the world, including PGEs, (re)insurance companies, governments and development agencies have used our frameworks and strategic insights to inform their strategies and evolve their insurance schemes. This has resulted in improved financial protection against major disasters and thus facilitated economic, social and personal recovery.</p>		
<p>2. Underpinning research</p> <p>The economic and social impact of disasters is increasing all around the world. In 2017, Hurricanes Harvey, Irma and Maria swept through the Caribbean and the South East of the USA, decimating many small island economies and causing \$220 billion USD in damage of which only 36% was covered by insurance. Increasingly the economic losses from such disasters are underinsured. In what is known as the protection gap, some 70% of global losses from weather-related disaster are not insured, equating to \$1.3 trillion USD between 2010-2019. At the same time, other large-scale risks, such as terrorism, cyberattacks and pandemics are also increasing, with little financial protection to address the aftermath.</p> <p>In response governments, development organisations such as the World Bank, and insurance organisations are collaborating to establish not-for-profit mechanisms that we term Protection Gap Entities (PGEs). PGEs provide insurance, often on a not-for-profit basis, to cover otherwise unprotected disaster risk globally.</p> <p>Our large-scale, longitudinal qualitative study (03/2016 to present) comprised interviews with 545 stakeholders, 129 participant observations in industry events and 898 documents across 15 PGEs. We analysed how and why PGEs are established, generated a typology of their different approaches to sharing risk between policy-holders, insurance markets and governments, evaluated their originating characteristics and risk-sharing type in terms of barriers and enablers in evolving to address growing protection gaps, and made recommendations on how barriers could be surmounted to meet societal goals for greater protection from disaster. Our study was</p>		

comprehensive, covering earthquake, terrorism, flood, drought, and hurricanes across high-income, mature insurance markets (Australia, France, New Zealand, Spain, Switzerland, the USA, and the UK), middle-income countries with high disaster exposure, (Mexico and Turkey), and multi-country risk pools in low-income regions (Africa, the Caribbean, and the Pacific).

We found that PGEs face contradictory values/goals between their not-for-profit mission for disaster protection and their use of a profit-based insurance market mechanism to pay for such protection. These contradictions, which are at the heart of their different approaches to risk sharing, inform our typology and explain the different barriers and enablers to their evolution. Specifically, while PGEs need to evolve to keep pace with both changing risk profiles within their countries/regions and also changing stakeholder expectations of them, we found that their ability to do so is grounded in the extent to which they are able to understand and engage with stakeholders in navigating these contradictions. For example, they need to negotiate contradictions between individual or collective responsibility for protection, which informs who (public or private, policy-holder or government) should pay for which aspects of risk sharing. They also need to negotiate between stakeholders' short-term political interests in disaster relief versus long-term investments in disaster mitigation measures. We developed conceptual models that explain how PGEs can work purposefully with these contradictions in order to evolve in line with the changing nature of risk, identify barriers to their evolution and also identify practices and processes for surmounting these barriers to their evolution. We also distilled these conceptual models into best practices for working with contradictions, such as: combining risk removal onto government balance sheets with risk redistribution across a population, via levies and subsidies; and tools for managing the trade-offs that these combinations involve. Through these conceptual models and their best practice implications, we provide PGEs, and the insurance, government, community, and non-government organisations that work with them, with tools to work through contradictions in order to develop their ability to offer protection alongside evolving risk profiles (virtuous circles) but also show how neglected contradictions can escalate, leading to increasingly unprotected risk (vicious circles).

Our industry reports (see 3.5 and 3.6 below), built from this academic research, make the particular tools we developed easily available and accessible, such as: 1) a Protection Gap Strategic Response Framework that explains the advantages and limitations of risk removal and risk redistribution strategies; 2) PGE Value Chain Positions, which identifies the implications of different PGE positions within the risk-transfer value for processing individual or collective risk; 3) an Insurance Resilience Framework that explains how to marry financing the protection gap with physical reduction of risk; and 4) a PGE Evolution Framework, that explains how PGEs can evolve with the changing nature of risk and stakeholder expectations. These frameworks have been used by PGEs to evaluate and strengthen their strategic positioning and processes, and also by governments (e.g. Treasury Departments) to evaluate existing or develop new PGEs.

3. References to the research

1. Jarzabkowski, P., Bednarek, R., Chalkias, K. and Cacciatori. E. (2019) [Exploring grand challenges through a paradox lens: Methodological lessons from a study of the insurance protection gap](#). *Strategic Organization*, **17**(1) 120-132.
2. Jarzabkowski, P., & Bednarek, R. (2018). [Toward a social practice theory of relational competing](#). *Strategic Management Journal*, **39**(3) 794-829.
3. Jarzabkowski, P., Bednarek, R., Chalkias, K. and Cacciatori. E. (2020) [Making the Impossible Possible: Paradoxical Processes of Constructing a Grand Challenge](#). *Academy of Management Proceedings*, **2020**(1). [Paper now in second revision resubmitted to *Academy of Management Journal*, February 2021]
4. Cacciatori. E., Jarzabkowski, P., Bednarek, R. and Chalkias, K. (2019) [What's in a Model? Computer Simulations and the Management of Ignorance](#). *Academy of Management Proceedings*, **2019**(1) [Paper now in first revision resubmitted to *Organization Science*, December 2020]

5. Jarzabkowski, P., Chalkias, K., Clarke, D., Iyahan, E., Stadtmueller, D., & Zwick, A. (2019). [Insurance for climate adaptation: Opportunities and Limitations](#). Global Commission for Adaptation. Rotterdam and Washington, DC.
6. Jarzabkowski, P., Chalkias, K., Cacciatori, E., and Bednarek, R. (2018). [Between State and Market: Protection Gap Entities and Catastrophic Risk](#). Cass Business School, City, University of London, 26th June 2018

Indicators of quality for underpinning research: The research was, and continues to be, supported by grants such as the following:

- July 2020 – September 2021. Risk sharing mechanisms to mitigate the economic consequences of pandemics: mobilising insurance expertise & capital to provide solutions for the UK, July 2020 – September 2021. Principal Investigator: Paula Jarzabkowski. *ESRC*. Funding value: £128,539. Grant number: [ES/V009389/1](#)
- March 2019 – September 2021. A Paradox Lens on Grand Challenges: Addressing the Protection Gap for Disasters. 1 June 2019 - 30 September 2021. Principal Investigator: Paula Jarzabkowski. *The Leverhulme Trust*. Funding value £48,964 Grant number: [RF-2019-496](#)
- November 2017 – October 2018. Between market and state: Bridging the protection gap of uninsurable risk. Bank of England. Principal Investigator: Paula Jarzabkowski. 20 February 2018 - 30 October 2018 *Bank of England*. Funding value £5,000 Grant number: RDC201708.

4. Details of the impact

Our frameworks enabled insurers, PGEs, non-governmental organizations, and policymakers to: 1) analyse protection gap strategies; 2) evaluate differing PGE value-chain positions; 3) consider how to link financial and physical risk reduction; 4) evolve PGE governance and legislation to align with change in risks and stakeholder expectations; 5) compare protection gap approaches across countries and disaster types; 6) work through and resolve the contradictions that are integral to addressing the protection gap.

Policy debate has sought, and been stimulated and informed by, our research

Our research has generated interest and had widespread influence through our engagement with the most relevant stakeholders in the UK and around the world. For example, key industry bodies and policy stakeholders sought our knowledge to inform their thinking, debate and influence their members through invited keynotes at the World Forum of Catastrophe Programmes in Madrid 2018 [5.2]; at the International Forum of Terrorism Risk (Re)Insurance Pools in Moscow 2018 and Brussels, 2019 [5.5]; and a panel comprising senior executives and country members of the African, Caribbean and Pacific risk pools at the World Bank 'Understanding Risk' forum in Mexico 2018. We were also invited to present our results at the UK Government Actuary's Department August 2020 webinar on Climate Change Risk Management and at leading global broker Aon's February 2020 conference on Collaborating to Close the Protection Gap for 250 key insurance, finance and development agency participants [5.8]. Indicating the breadth of debate informed, our research was presented at 14 industry keynotes in nine countries and translated into French, Spanish and Russian. At the same time public interest and engagement in our research has been stimulated through engaging with the press and news media including televised interviews on BBC Business News, BBC Radio, mainstream newspapers such as the Financial Times, the Straits Time, the Sydney Morning Herald, and the global insurance media, which also stimulated further engagement and debate, such as the 43 reactions to an FT article on the research.

International Sector Level Impact

The Spanish PGE, Consorcio de Compensacion de Seguros, which provides insurance backing for the entire domestic insurance market in Spain, amounting to €14.2Tn of assets under cover, published an edited version of our 2018 report [5.1] in their newsletter to their members, who comprise the entire domestic insurance market of Spain. The purpose was "to support their own

knowledge and evaluation of different ways of addressing the protection gap” (see Deputy Director of International Relations testimonial, 5.2), particularly in ensuring that potential future losses for those members may be mitigated by consolidating public-private approaches to risk sharing. Our research also informed and influenced the strategic thinking of the French PGE, Caisse Centrale de Reassurance (CCR), which provides cover for 90% of the French domestic insurance market. As their Deputy CEO, Mr Laurent Montador notes, he found our research so valuable for explaining “the struggles that they may face in trying to reduce the protection gap through physical resilience measures” (testimonial 5.4) that he drew upon our report for his article “Government Pools: A Way to Reduce the Protection Gap” in the leading international insurance trade journal, *Intelligent Insurer* (issue 4, 2018) [5.3]. CCR also invited Professor Jarzabkowski to give a keynote at the 10th annual CCR member workshop in order to enable members to “use her research frameworks”. Professor Jarzabkowski’s research presentation “provided answers to questions about the importance of government engagement with the private market, in order to address the growing protection gap in the face of increased risk arising from climate change” (Testimonial 5.4). These invitations, industry articles, and endorsements indicate the international credibility, value, and sectoral reach of the research.

Supporting Strategic Planning for Terror and Catastrophe Insurance Companies

PGEs such as Australian Reinsurance Pool Corporation (Australia), Flood Re (UK), Centre for Disaster Protection (UK), and Pool Re (UK) applied our frameworks for strategic planning and educating advisory groups [5.5 and 5.8]. For example, as the CEO of Pool Re (the UK’s terrorism risk pool) explains, our research has been central to their strategic thinking and explaining to their Board and government stakeholders “how and why Pool Re should evolve its remit to take new and emerging areas of terrorism risk” (see Mr Julian Enoizi’s testimonial, 5.5). Pool Re used our Strategic Response framework to evaluate strategies for these emerging protection gaps, leading to the inclusion of £10 billion of cyber terrorism and non-damage business interruption to the cover that they provide for UK insurance companies, and resulting in Professor Jarzabkowski’s appointment onto the Pool Re Advisory Council [5.5].

Influencing international government policy formation

Our research frameworks informed international policy through the following: 1) an invited presentation to the UK Treasury Insurance Team on the global implications for the UK PGEs, Flood Re (flood) and Pool Re (terrorism) (23/01/2019). Subsequently, in its July 2019 Quinquennial Review, Flood Re expanded its remit to link protection to resilience (a key recommendation of our Insurance Resilience Framework) in respect of which Flood Re’s General Counsel, Harriet Boughton, emailed us stating “thank you for all of your help with our strategic thinking to date” (9/7/2019); 2) explicitly informed the review and retention of the Australian terrorism PGE (ARPC) in the Australian Insurance Terrorism Act 2018, where our Strategic Response framework is reproduced in an appendix to the Act [5.6]; and 3) was commissioned by the Canadian Finance Ministry to help evaluate ways of managing Canadian earthquake risk. Our in-depth report (August 2019) and presentation to the Canadian Finance Ministry (12/12/2019) enabled them to “learn a lot about international best practices and key lessons from what other countries have done to manage catastrophic risks” (Phaedra Sydor, Finance Canada, 5.7). Professor Jarzabkowski has also had national policy impact as Co-Chair of the Expert Advisory Group of the UK Foreign and Commonwealth Office Centre for Disaster Protection [5.8], and international impact as Board member of the OECD High-Level Advisory Board for the Financial Management of Catastrophic Risks (see also 5.2). For example, as explained by Director, Dr Clarke, during the establishment of the Centre for Disaster Protection, Professor Jarzabkowski led the advisory group in advising on the Centre’s remit and strategic plan, culminating in their current 5-year strategy for supporting the UK development agenda through disaster risk financing [5.8].

Impact extends to wider disaster awareness: Professor Jarzabkowski led a report for the Global Commission on Adaptation on ‘Insurance for Climate Adaptation’ to inform their September 2019 Flagship Report to the UN Summit on Climate Adaptation (see 3.5 above), with a team including the UK Centre for Disaster Protection, the German development agency, InsuResilience and the Insurance Development Forum [5.8]. Their research on PGEs also

comprises the basis of key recommendations for a European Commission study and published report on public/private means for addressing nuclear liability across the European Union (see 5.9). The term PGE, coined by our 2018 research is used 58 times in the 178 page report and our report is explicitly cited as the basis for one of the optimum approaches to the problem (p.71 of 5.9), showing the extent to which our research has become part of the terminology and solutions for evaluating the insurability of, and protection from, potential disasters. Finally, our results were used by the World Bank and United Nations Disaster Risk Reduction division as part of their training and education programs for civil servants of Finance Ministries from low/middle-income countries in Asia, the Caribbean, North Africa, the Pacific and South America, where Professor Jarzabkowski taught the results in a training session on Navigating Trade-Offs in Disaster Risk Financing [5.10].

Our research, and the tools created from it, have been recognised, received, sought and used by the key audiences around the world for which they were intended. The uses have been to inform and extend strategic thinking on the part of individuals and organisations, to trigger and inform debate, to raise public awareness, and to inform organizational strategy and national policy in different countries. They have therefore had the maximum scale and scope of impact that research of this nature can be expected to have.

5. Sources to corroborate the impact (indicative maximum of 10 references)

[5.1] Protection gap entities: The landscape of government and market collaborations for catastrophe insurance. Consor Seguros, Volume 9. Autumn 2018. [See article as published in Spanish and English]

[5.2] Testimonial covering the period from 2016 to the present from Mr Francisco Espejo Gil, Deputy Director of International Relations, Consorcio de Compensacion de Seguros, Spain.

[5.3] Government pools: A way to reduce the protection gap. Laurent Montador, Intelligent Insurer, Issue 4: 2018. [provide the article, written by deputy CEO of CCR]

[5.4] Testimonial covering the period from 2016 to the present from Mr Laurent Montador, Deputy CEO, Caisse Centrale de Reassurance, France.

[5.5] Testimonial covering the period from 2016 to the present from Mr Julian Enoizi, CEO of Pool Re, UK, on the application of our research.

[5.6] Australian Insurance Terrorism Act, 2018, in which our Protection Gap Strategic Response Framework is reproduced, with a citation to our report, on page 26

[5.7] Report (August 2019), key takeaways (November 2019), and email (January 2020), commissioned by the Canadian Ministry of Finance to consider ways to address the Canadian protection gap for earthquake risk.

[5.8] Testimonial covering the period from 2016 to the present from Dr Daniel Clarke, Director of the Centre for Disaster Protection, Foreign and Commonwealth Office, UK

[5.9] Study on The Insurance, Private and Financial Markets in The Field of Nuclear Third-Party Liability. *European Commission*. Luxembourg: Publications Office of the European Union, ISBN: 978-92-76-27385-1, DOI: 10.2833/9667 15/12/2020.

[5.10] World Bank and United Nations Disaster Risk Reduction-sponsored educational program on Disaster Risk Financing, 16-20 July 2018. Prof. Jarzabkowski's topic, Session 2.4 'Navigating Trade-Offs in Disaster Risk Financing' on Tuesday 17 July 2018.