

MANDATORY CLIMATE INSURANCE

We first recommended mandatory climate insurance 4 years ago. Italy is now trying it. But is it a good idea and how can we make it work?



DISCLAIMER (*PLEASE READ, IT'S ACTUALLY IMPORTANT!*)

This note is part of “MAKE OR BREAK”, a briefing series from Theia Finance Labs exploring novel perspectives about key initiatives in the sustainable finance space and how to improve them. Previous reports in this series have focused on [GFANZ](#), [NGFS scenarios](#), [temperature assessments](#), [the “tripling renewable energy” goal](#), and [reducing EU disclosure costs](#).

Make or Break series notes are opinion pieces, authored by Theia Finance Lab staff members. They are not technical research reports, even where they cite research, and do not go through the same editorial or peer review as other Theia Finance Lab research products. The goal of these notes is to surface key issues, discuss their ramifications, and outline potential resolutions. The ideas and recommendations presented here are attempts at inputs to discussion and debate. We hope this sometimes changes other people’s minds and sometimes spurs responses that change ours.

Where the documents focus on specific initiatives, we ensure that they are shared and discussed with the relevant initiatives prior to publication. However, for the avoidance of doubt, the research presented here is not affiliated with the initiatives discussed, nor subject to their editorial control, nor in any way implicitly or explicitly endorsed by them. The research is not affiliated with 2° Investing Initiative France.



About Theia Finance Labs

Theia Finance Labs (formerly 2° Investing Initiative Germany) is an independent, non-profit think tank incubating research solutions for the financial sector that help solve the climate crisis. The Theia Finance Labs name is inspired by the Greek goddess of sight, the light of the blue sky, and the value of gold, Theia, and by the Greek word Aletheia, which means “disclosure” or “truth”, literally “the state of not being hidden”. The brand mirrors our goal to develop evidence-based research and tools that shed light on the intersection of finance, climate change, and long-term risks. Theia operates as a 100% non-profit organization.

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Introducing ‘mandatory climate insurance’

In the era of ‘exponential risks’ (Moody’s), companies are increasingly exposed to events that are ‘existential’ for their business (e.g. climate impacts, pandemics, social disruption).

Unless governments want to permanently socialize these risks through bailouts, or risk mass bankruptcies for what are otherwise in many cases viable and prospering businesses, policymakers need to introduce measures to create private sector supported ‘corporate rainy day funds’ that allow businesses to weather these storms and ultimately end or at the very least dramatically reduce the need for taxpayer funded private sector bailout.

In 2020, Theia Finance Labs published a report outlining policy options for a “[Corporate Rainy Day Fund](#)” that responds to the growing risks of business interruption in the face of rising climate and climate-related risks (e.g. social, nature) and reduces the need for government bailouts, through et al. proposing ‘mandatory climate insurance’. In 2024, the Italian government introduced a new policy requiring business to implement mandatory ‘climate insurance’ in the face of growing climate risk exposures across Italy (Bloomberg 2024), including floods and storms, consistent with the recommendations we outlined in December 2020.

The policy is set to go into effect from January 1st, although key issues and concerns remain. Commentators have discussed the extent to which such risks can be insured, the extent to which the planned €5 billion state-backed reinsurance fund will be sufficient, and challenges around ‘adverse selection’, as seen in other countries (e.g. USA) (Bloomberg 2024).

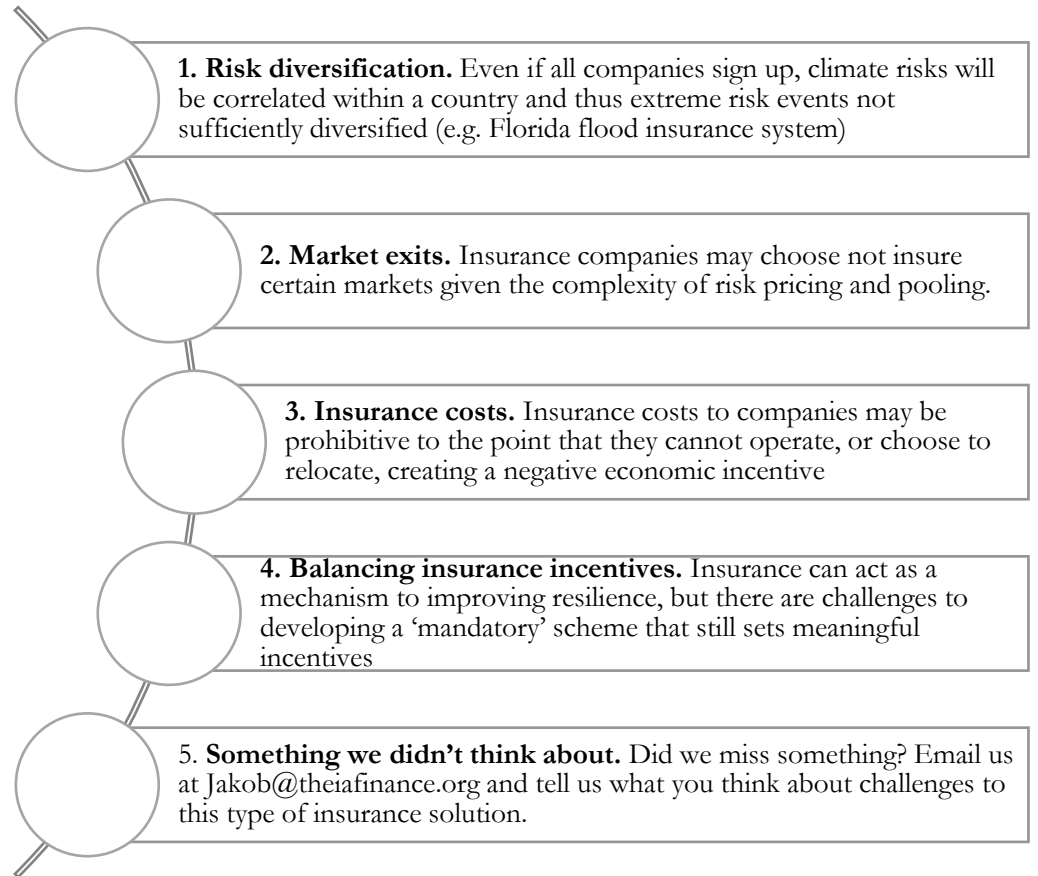
As a matter of transparency, we are not aware of whether our recommendations were considered or otherwise influenced the policy process and we did not engage in proactive lobbying, consistent with our non-profit status not to engage in active policy advocacy.

We do not seek to take specific credit for this policy measure. However, given that our research was among the first, if not the first, to lay out the case for mandatory corporate rainy day funds and insurance in the face of growing climate risks, we are excited to see the opportunity for policy entrepreneurship.

We also increasingly see the importance of considering insurance in our physical and transition climate risk modelling work developed as part of the LIFE STRESS project under the 1in1000 umbrella. Understanding insurance is key to understanding how future climate risks will be distributed.

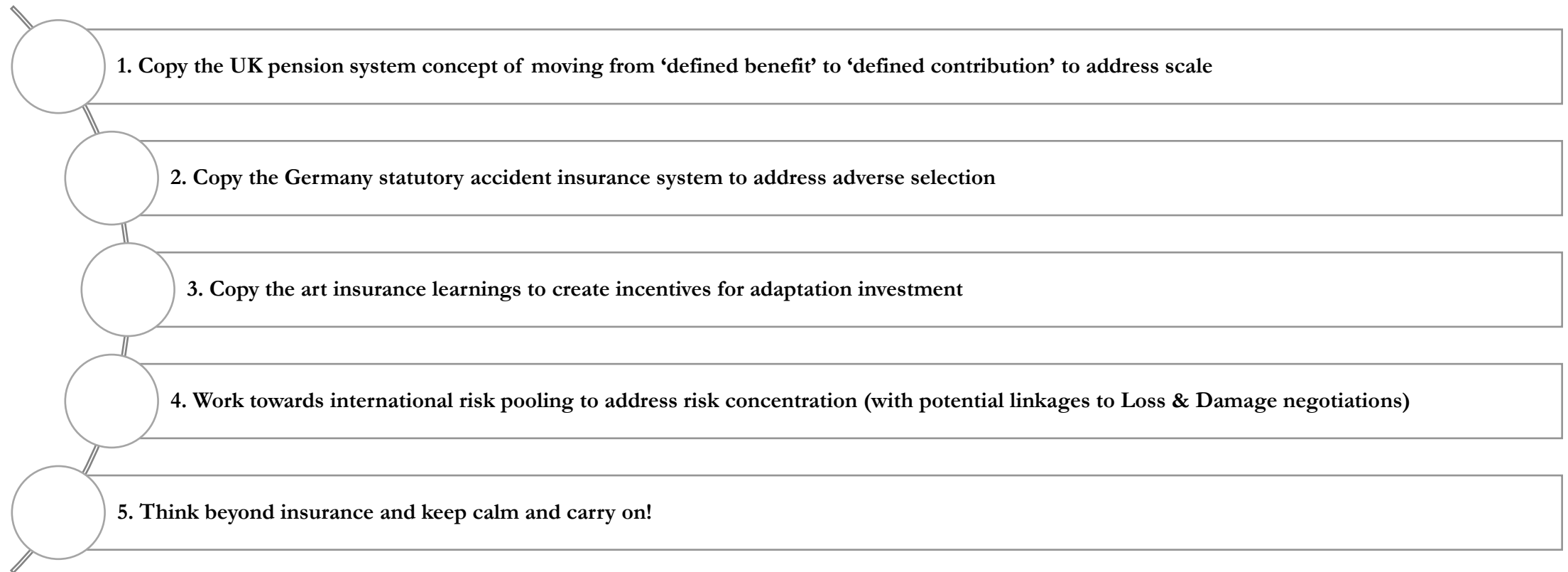
While we see the potential of mandatory insurance, engaging regulators, insurance companies, and industry experts on the idea over the past four years has surfaced a number of challenges, reflected in the industry commentary around Italy’s policy experiment. Key challenges are summarized on the Fig. on the right.

FIG 1: CHALLENGES TO MANDATORY CLIMATE INSURANCE SCHEMES (SOURCE: AUTHORS)



Given the policy challenges, Theia Finance Labs in the spirit of the “Make or Break” research series is suggesting 5 high-level policy recommendations building on past experience in other markets to make mandatory climate insurance work

FIG 2: FIVE RECOMMENDATIONS FOR MAKING MANDATORY CLIMATE INSURANCE WORK (SOURCE: AUTHORS)



#1: Copy the UK pension system concept of moving from ‘defined benefit’ to ‘defined contribution’ to address pricing in the short-term

As outlined by Petra Hielkema, the chair of the European Insurance and Occupational Pensions Authority (EIOPA), one key concern for the insurance industry when considering climate insurance is “How much am I up for and how do I price this?”.

The challenge with climate underwriting, as outlined in a recent report by Howden, is the fundamental uncertainty of forward-looking risk and price curves. It isn’t just a question of whether the insurance premiums are too high, but how to set them in the first place. This is true in particular in the context of introducing mandatory climate insurance, a new field for. During the pandemic, the American Property Casualty Insurance Association (APCIA) concluded that “pandemic outbreaks are uninsured because they are uninsurable.

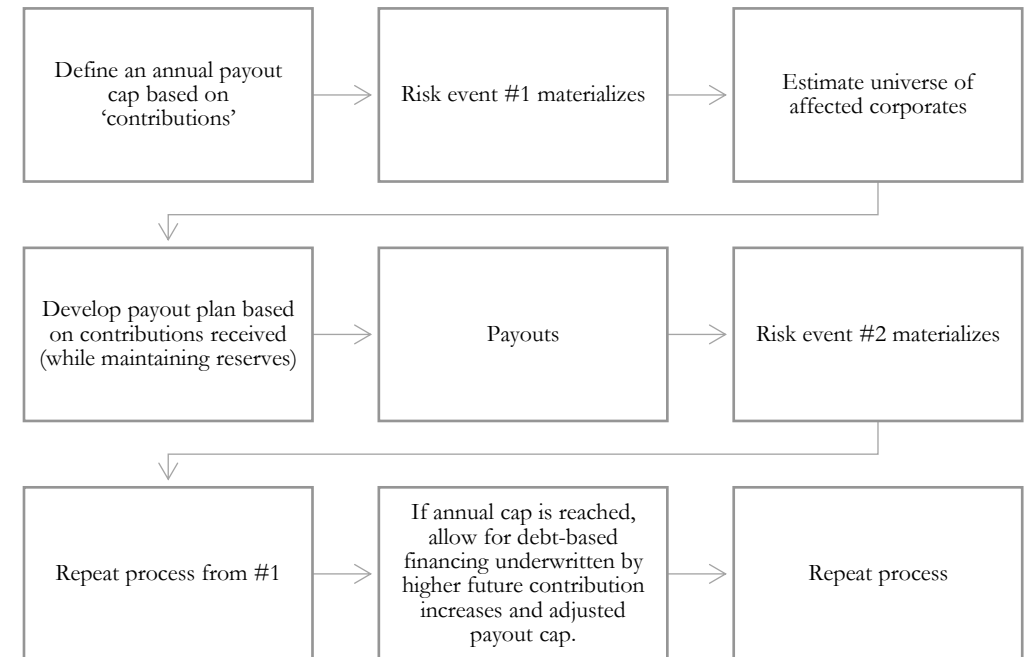
One way to help grow the market is to break a fundamental principle of insurance: “defined benefit”, the same way that principle was broken in the UK and US pension system.

Under a defined benefit scheme, a large insurance event will potentially break funds set aside for payout, requiring either a government backstop increase or leading to risks to insurance companies. While this increases business viability and certainty, the nature of the insurance event may be variable. How long could a business cope without insurance? What is the actual scale of the damage vs what is needed to maintain ‘business viability’, all questions that will be different from insurance to insurance event.

Developing a defined contribution scheme could ensure that insurance companies basically have capped annual payments to businesses based on rolling 12-month averages.

While there are obviously a number of technical challenges to such an approach, notably around defining event categories, it could help build understanding of risk profiles and premia. What is more, if the ‘defined contribution’ is not enough in light of the climate event, while this would potentially require a government backstop, this can be politically calibrated to be most efficient, rather than a more complicated system via insurance companies facing insolvency risks.

FIG. 3: AN APPROACH TO ‘DEFINED CONTRIBUTION’ INSURANCE SYSTEM (SOURCE: AUTHORS)



#2: Copy the Germany statutory accident insurance system to address adverse selection

Germany first introduced its mandatory statutory accident insurance system in 1884 under Otto von Bismarck, in order to address the issue of workplace accidents for employees.

The system largely looks like it does today, with the onus of payment on employers, indemnification, and the categorization of businesses based on their 'risk level'. The system since then has continuously expanded, notably to the inclusion of all companies in 1942. What is more, the insurance system also introduces notions of 'accident prevention' through workplace standards and regulations that companies must comply with, a key aspect relevant in the context of setting incentives for adaptation investment as well. These measures have contributed to the fact that the German program has enjoyed low premiums for decades.

A core benefit of the system is that its universal nature prevents adverse selection – the benefit of a universal, mandatory climate insurance system.

All companies must contribute, whether they work with dangerous chemicals, or are non-profit think tanks populated by employees working at their desks or on a couch.* The system thus prevents adverse selection while creating positive standards for reducing pooled risks. The insurance system also uniquely calculates premiums ex-post as a function of the past 12 months claims, an option also potentially relevant as an alternative to the defined contribution system outlined in Recommendation #1. The link to the hazard group can be transposed to the climate case with differential contributions based on adaptation status.

Crucially, the system can still be privately operated.

While the German system has a clear public function and is integrated into public registration platforms in order to ensure all companies contribute, just as with health insurance, the actual insurance system itself can be private in principle, with some market differentiation within the confines of minimum standards and taking into account the requirement to prevent adverse selection.

*A.k.a. Theia Finance Labs

FIG. 4: A PAINTING OF “A WOUNDED WORKER” BY ERIK HENNINGSON



#3: Copy the art insurance learnings to create incentives for adaptation investment

Art insurance is just one example where insurance companies play a powerful role in setting incentives for ‘best practice’.

A significant part of the insurance industry obviously relies on ‘codes’ (e.g. building codes) and classification systems (e.g. risk levels for companies in the case of the German statutory accident insurance system). These must be a crucial component for future climate insurance programs incentivizing adaptation investment and thus reducing the risk pool.

However, there is also the ‘qualitative’ component of insurance, something that is a critical challenge for art insurance where insured items are idiosyncratic, as are the theft and loss prevention measures (how is the art hung? What security systems are in place? Where is the art located? How exposed is the individual? How many people can see / access the art? Etc. etc.).

While climate risk at surface level do not lend themselves to qualitative assessments, the modelling uncertainty does require heuristics, as does a consideration of the optimal idiosyncratic adaptation response. Some of this can feature in premia, although obvious questions arise here again about insurability and adverse selection and moral hazard as insurance companies compete in the expectation for government bailouts in case they mispriced the premia. But some of this can play to the broader role of insurance companies to drive good behaviour.

One notable example in this regard is providing visibility across medium- to long-term insurance premium scenarios that are now part of many insurance companies internal scenario exercises (including those linked to the TCFD recommendations), but are not shared with clients.

FIG. 4: SAME FIGURE AS ON PREVIOUS PAGE SINCE IT ALSO FITS HERE



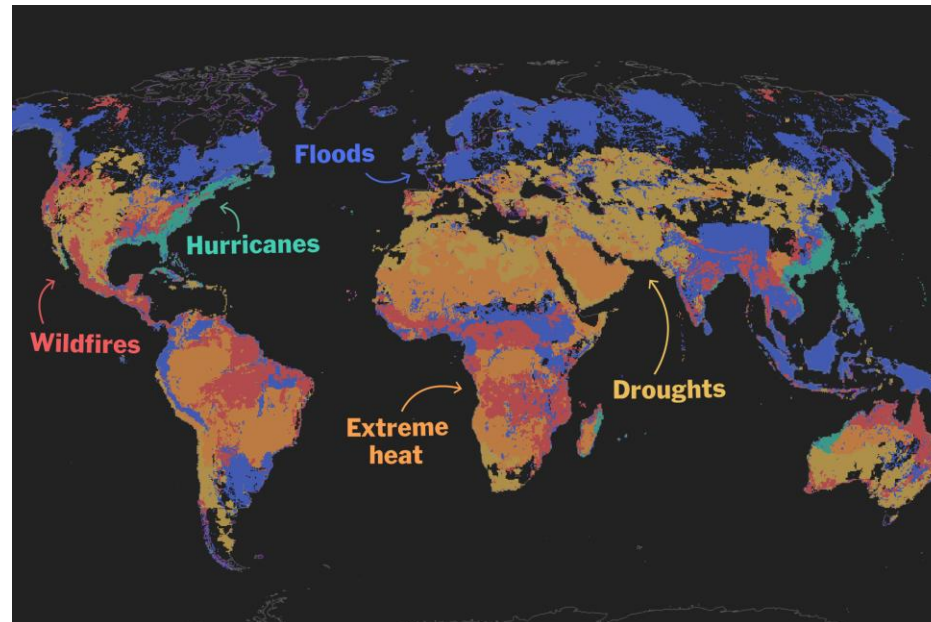
#4: Work towards international risk pooling to address risk concentration (with potential linkages to Loss & Damage negotiations)

Risk pooling at country level may not suffice to address the systemic scale of climate change.

While there may be many climate events around the world in one year, as can be seen over the last couple of years already, global or regional risk pooling can help stabilize the climate insurance market. Where governments introduce mandatory insurance schemes, coordinating and pooling the risk of these regimes will be in a mutual interest.

There are obviously political barriers to risk pooling, as it may be considered similar to the risk pooling of government debt, already controversial just within the context of the EU. What is more, there are obviously differences in the risk profiles of different countries, and so risk pooling would inevitably benefit some countries more than others. At the same time, if linked to the Loss & Damage negotiations at COP, the risk pooling exercise could ultimately reduce the overall costs. Higher costs of course also are linked to more overall insurance market stability, which benefits all countries. There could also be 'partial risk pooling' which could already contribute to lower risks without necessarily creating open-ended liabilities and limit risk transfer across countries.

FIG. 5: A GLOBAL MAP OF CLIMATE RISKS (SOURCE: NY Times 2021)



#5: Think beyond insurance and keep calm and carry on!

As this note outlines, many of the issues related to mandatory climate insurance are not intractable problems. In fact, they have appeared in one form or another throughout the history of insurance.

While there are clearly challenges and implementation question marks, insurance will remain critical to the climate crisis and learning from history a key tool to moving forward. At the same time, we should remember that corporate rainy day funds may not consist just of insurance as a solution and the underlying goal of moving to a world with no or almost no bailouts (at least in response to climate and related risks) requires a broader application of the policy toolbox. In other words, insurance cannot solve the problem by itself and to be effective must benefit from other tools in the toolbox. As outlined in 2020 report, this includes rules around corporate liquidity and shareholder buybacks, access to finance, the governance of contractual exit clauses, and ensuring an efficient system that allows companies to weather the storm. To use the example of force majeure clauses, these clauses will become increasingly important, but the definition of what constitutes force majeure generally, the exact wording of the clause in contracts remains a wild west that risks tying up courts for years at which point it will often be too late for businesses.

In this context, thinking beyond insurance while continuing on the pathway of mandatory climate (and related risks!) insurance is the right way forward for policy design.

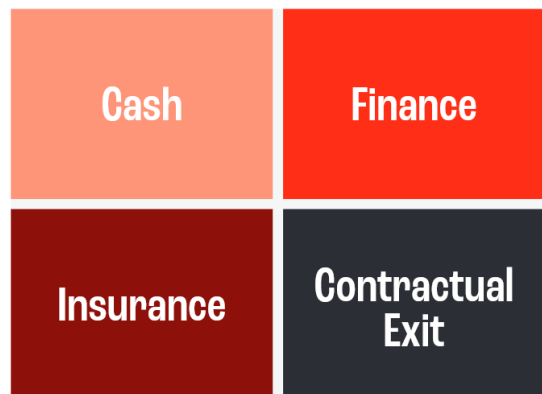
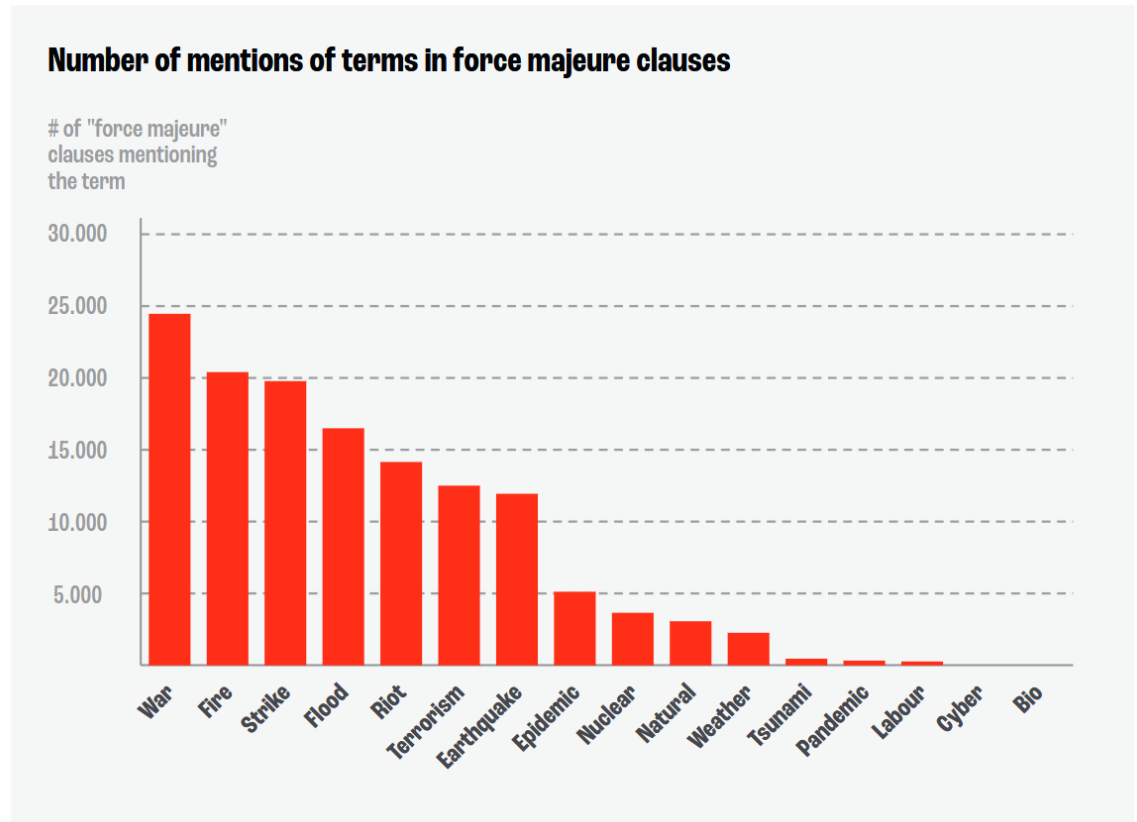


FIG. 6: NUMBER OF MENTIONS OF TERMS IN FORCE MAJEURE CLAUSES (SOURCE: THEIA FINANCE LABS 2020)



About Theia Finance Labs

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