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'Disaster risk financing: the role of insurance in new public-private partnerships'

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The accelerating change in the Earth's climate has increased the frequency and intensity of river and coastal floods, landslides, droughts and forest fires worldwide. Europe, in particular, is warming quite fast; according to Copernicus (the European satellite monitoring system), the average temperature for European land in August 2024 was more than 1.5°C above the 1991-2020 average for the same month. In addition to climate-related events, other natural disasters such as earthquakes, tidal waves, volcanic eruptions and bradyseism can have a dramatic impact on the economy and society.

The issue of natural disasters and, more generally, catastrophe risks, once confined to scholars of the 'hard' sciences, such as physicists and biologists, has become an area of concern for economists, sociologists and lawyers as well. As a consequence, one sees among other things more and more attempts at measuring the economic impact of natural events in a reliable way. The 2023 European State of the Climate Report estimates the direct damage to property generated in 2023 by floods, inundations and fires (disregarding, that is, indirect effects) at more than €13 billion, and the human toll at 151 deaths¹. Over the past few years, there has also been a growing attention in international fora² to natural disasters as a potential source of systemic financial stability risk.

The literature on disaster relief suggests that a purely ex-post approach to damage repair and loss compensation is likely to be sub-optimal. Compensation can be very

¹ See the European Centre for Medium-Range Weather Forecasts - ECMWF - 2023 European State of the Climate.

² See Radu D., '[Approaching Disaster Risk Financing in a Structured Way](#)', European Commission, DG-ECFIN, May 2024; 'Policy options to reduce the climate insurance protection gap', ECB-EIOPA Staff Paper, April 2023; and '[Enhancing the insurance sector's contribution to climate adaptation](#)', OECD, Policy Paper, March 2023.

costly for the public finances when an event occurs. It is also difficult for the private insurance market to provide adequate cover for rare but catastrophic events. Ex-ante risk mitigation and damage prevention and limitation are therefore desirable. Moreover, the nature of catastrophe risk appears to require an appropriate interaction between public relief intervention and private insurance schemes.

Certain valuable principles for policy-makers have recently been summarised in a 'decatalogue' for natural-disaster management,³ drawn up by the OECD and the IAIS, the International Association of Insurance Supervisors, under the auspices of the Italian G7 Presidency. Ivass has actively contributed to this document with technical input. The OECD-IAIS framework states that an effective mechanism for protection against natural catastrophes requires the cooperation of many stakeholders, both public and private.

On this point, last year I mentioned the pros and cons of two ways of sharing the costs of a catastrophic event: public intervention and private insurance. I also claimed that an adequate diffusion of insurance cover is not just a question of individual choice, but has elements of a collective issue.

Allow me to recapitulate very briefly the main points I made. Public intervention will always be necessary to some extent, because not all risks are effectively insurable and because, in the case of truly catastrophic events, some form of coordination of the reconstruction and its financing is indispensable. Its drawbacks are, first, that when an event occurs, there is uncertainty about whether compensation will be provided and to what extent, who will be eligible and under what conditions; second, that experience tells us that the implementation of relief measures often comes very late after the event; third, that the distribution of the tax burden being naturally based on pure, discretionary ex-post mutualisation, it can hardly be designed in a way to create the right incentives for ex-ante risk prevention or mitigation.

Private insurance contracts exploit the opportunities of diversification between uncorrelated risks, and can rely on risk transfer and pooling techniques, with benefits ultimately shared between the insurer and the insured. If well designed and implemented, it is certain, prompt and directly commensurate with the damage individually suffered; it can provide powerful incentives for prevention. However, if there are no provisions for mandatory coverage, it is subject to adverse selection. Moreover, it cannot achieve the redistribution goals that public intervention may instead wish to pursue.

³ ['High-Level Principles for PPIPs against Natural Hazards'](#), presented at the end of May in Stresa at the meeting of G7 finance ministers and central bank governors.

A recent study made by the Bank of Italy together with the University of Florence⁴ looks at hydrogeological events that took place in Italy between 2010 and 2018 and their effect on firms survival and performance. In the three years following the event, the affected companies are significantly more likely than others to exit the market; even if they survive, their profitability declines and staff numbers decrease. Insurance can mitigate those effects at the individual level. In addition, the existence of externalities makes underinsurance of such risks also as a matter of public interest. The destruction caused by a natural disaster has consequences that go beyond those directly affected, through the dense network of interdependencies that characterises economies. The swifter availability and granularity of insurance relief compared with that provided by discretionary ex-post public interventions should contribute to reducing these consequences.

It is not only insurance that can provide incentives to make businesses and households less fragile and more resilient to disasters. Supervisors, for instance, have been insisting for some time that banks should take physical and other nature-related risk into account when screening the financial merits of projects. Risk mitigation measures should be a factor in setting conditions for loans and other forms of financing.

As is well known, Italy is particularly exposed to seismic and hydrogeological risk, including landslides and river floods. It also has a 9,000-km coastline, of which 3,400 km, especially in the upper Adriatic Sea, can suffer coastal floods. Yet according to analyses by various research centres and EIOPA⁵, Italy, along with Greece, shows in Europe the highest protection gap, i.e. the gap between natural-catastrophe (Nat-Cat) risk exposure and insurance protection from such risks. From 1980 to 2022, about 97 per cent of the losses incurred from earthquakes and floods were uninsured, the highest underinsurance level (thus measured) for this type of risk in the European context⁶.

The protection gap arises from both the demand and the supply side of the insurance market. Several aspects can explain the public's wariness in demanding protection: low awareness of risk and/or of the availability of insurance products; difficulties in understanding complex policies (with regard e.g. to guarantees, benefits, exclusions); high prices. An expectation that public sources will compensate some losses may also indirectly play a role. On the supply side, insuring against catastrophe risks can entail, if and when rare but high-impact events occur, heavy and concentrated losses for insurers. Modelling such tail risk is difficult, especially as climate change is likely to shift the probability distribution of climate-related catastrophic events in ways that are hard to predict. This makes provision of insurance technically challenging and may induce insurance companies to raise the price of cover significantly. Much the same

⁴ Clò S. et al. 'The impact of hydrogeological events on firms: evidence from Italy', Banca d'Italia, Temi di Discussione (Working papers) no. 1451, April 2024.

⁵ The EIOPA survey considers five risks - earthquakes, floods, coastal floods, wildfires and windstorms.

⁶ https://www.eiopa.europa.eu/tools-and-data/dashboard-insurance-protection-gap-natural-catastrophes_en (updated to November 2023).

issues arise for reinsurance: in fact, as the effects of climate change become apparent, insurance companies are finding it increasingly difficult to reinsure themselves in the market.

These special features of catastrophe risk appear to call for carefully designed measures to improve the framework for Nat-Cat insurance and provide some form of public co-insurance, while leaving the market to perform its allocative tasks as efficiently as it can. We therefore welcomed the introduction of a mandatory Nat-Cat insurance scheme for businesses, together with a set of policy support tools, by the 2024 Budget law. The law will bring Italy closer to other European countries (including France and Spain) and non-European ones (including the United States and Japan) that have already provided for either mandatory or semi-mandatory models of insurance against natural disasters.

The technical details need to be defined by a decree to be issued by the Minister of Economy and Finance and the Minister of Enterprises and Made in Italy.

Several points are crucial for a successful implementation. The scheme must be technically sustainable on the insurers' side and affordable for the insured, so that universal coverage is smoothly achieved. It is also essential that reimbursements are, and are perceived to be, quick and predictable. The extent of the cover offered (and demanded) needs to be adequate. The implementing decree will specify a number of important details, including the events to be covered and the criteria for exclusion. Such elements will largely shape contractual practices concerning e.g. the amounts insured, indemnity limits, deductibles and excesses. The success of the scheme hinges on a careful definition of them. All the main actors concerned should have a voice in discussing the technical details. It is also important to ensure the consistency of the new provision with the existing prudential and supervisory rules for insurance. We are ready to provide any technical assistance that may be required.

The experience gathered from the implementation of the business insurance scheme will also be useful in case an extension of catastrophe risk coverage to households is envisaged. Legislative initiatives in this direction are being considered⁷

Let me conclude by saying that, in general, there are two further key ingredients for reducing Italy's insurance protection gap: greater awareness of risk (and of the risk-protection tools available) on the public's side; constantly improving clarity and transparency on the industry side. Citizens and businesses that are well informed on risk will likely be prepared to seek more protection, and to adopt mitigating measures that reduce the risk of loss and at the same time improve the conditions at which insurance can be provided.⁸ Insurers, for their part, should constantly strive to improve

⁷ See initiatives on the draft framework law on post-disaster reconstruction.

⁸ See Guiso L. and Jappelli T., 'Are People Willing to Pay to Prevent Natural Disasters?' CSEF, working paper no. 723, June 2024.

the structure and language of contracts, as well as all aspects of the distribution of policies. Ensuring that contracts are as clear, simple and readable as possible, and that potential customers are in the best position to understand the price and extent of coverage and other conditions, is important not only in the name of fairness, but also in order to guarantee that market competition functions effectively. Insurance education and transparency: at Ivass, we are committed to contributing to both these aims, within our mandate, as best we can.⁹

⁹ On the domestic front, Ivass participate in the work of the Sustainable Finance Table at the MEF, of which CONSOB, COVIP, MIMIT and MASE are also members. There, among other things, the Bank has promoted the establishment of a Working Group on the Insurance Protection Gap (IPG) to enhance the role of insurance companies as providers of protection for businesses and households against physical risks arising from natural disasters and climate change. At the international level, Ivass is working on the European Commission's project called 'Technical Support Instrument 2023 - Flagship ESG Risk Management Framework for the Financial Sector'. As part of this project, in-depth studies will be conducted on the causes of low insurance coverage against natural disasters in Italy, and possible prevention measures and policy recommendations will be identified to close our protection gap. Finally, Ivass contributes to the debate on the Insurance Protection Gap taking place in the international insurance and non-insurance cooperation fora of which it is a member: the IAIS, the Network for Greening the Financial System (NGFS), the Sustainable Insurance Forum (SIF) and the Forum for Insurance Transition to Net Zero (FIT).

