Towards disaster risk-sensitive investments

The Disaster Risk-Integrated Operational Risk Model

May 2017
The impact of disasters is growing over time

Innovative approaches to combine disaster risk and operational risk are needed

• The impact of disasters is growing over time, and the need to consider disaster risk as a core element of a comprehensive and coherent business strategy is increasingly compelling.

• Nonetheless, disaster risk is often still considered as a stand-alone component of business risk, often a “tail-risk”, hard to measure and, therefore, overlooked.

• As the frequency of extreme weather events continues to increase on the back of climate change, a paradigm shift for both businesses and governments is needed.
A number of global initiatives are underway to respond to these challenges. The Sendai Framework leads the way, but SDG 11 mainstreams disaster risk reduction into the sustainable development agenda.
Mainstreaming disaster risk: the DRIOR model

The Economist Intelligence Unit developed an original model bridging operational risk and disaster risk

• The Economist Intelligence Unit was commissioned by UNISDR to build an original model to mainstream disaster risk into operational risk.

• Launched in November 2016, the Disaster Risk-Integrated Operational Risk (DRIOR) model makes an original contribution through the creation of a tool serving two communities:

  • **Private sector**: measuring risk in a holistic fashion and better planning for sustainable investments;

  • **Policymakers**: evaluating the scope of policies; helping to identify gaps and set priorities when building institutional capacity and devising programmes on disaster risk management; identifying good practices.
We ran a pilot programme testing the model in 20 countries.

We chose countries with different levels of socioeconomic development from different regions.

Countries were selected by UNISDR and the EIU to reflect geographical diversity, absolute exposure to disaster risk, and exposure to disaster risk relative to total capital stock.
The DRIOR model framework

1. Institutional framework
   1.1 DRM Institutional structure
   1.2 Operational effectiveness
   1.3 Transparency and accountability
   1.4 Political stability

2. DRR policy, preparedness, and response
   2.1 National DRR policy frameworks
   2.2 Sub-national DRR policy frameworks
   2.3 DRR and response budget allocation
   2.4 Disaster risk-informed development
   2.5 Preparedness and response

3. Economic resilience
   3.1 Economic and financial stability
   3.2 Output and export diversification
   3.3 Insurance market and emergency funds
   3.4 Income and poverty level

4. Societal resilience
   4.1 Safety and security
   4.2 Population health and quality of health systems
   4.3 Food and water security
   4.4 Social cohesion
   4.5 Women’s empowerment

5. Resilience of the physical environment
   5.1 Environmental performance
   5.2 Exposure of physical assets
   5.3 Implementation and adherence to building codes
   5.4 Quality of existing infrastructure
   5.5 Critical infrastructure resilience
Key findings

- All countries we reviewed have at least one national-level entity responsible for DRM
  - The US, Japan and South Korea have the most robust institutional frameworks for DRM.

- Political leadership is crucial to DRM strategy
  - In our model, support from political leaders for DRM is a determinant of operational effectiveness.

- Governments that make tangible investments in DRM are less vulnerable

- Strategic planning is key
  - Most countries have disaster-risk strategies, but only seven require sub-national governments to have policies.

- Budget allocations for disaster risk are rising in many countries, but dedicated budgets are not yet the norm

- A shift from disaster response to preparedness is underway
Key findings

• Industrialised countries with open and diverse economies are the most economically resilient

• The degree of access to insurance markets and economic resilience are highly correlated
  • Integrating climate and disaster risk into insurance markets in ways that make disaster-risk insurance widely available is a work in progress.

• Countries that rely on their agricultural sector are also the most economically vulnerable

• Disaster risk is highest where vulnerable societies and high exposure to hazards coincide

• Resilience of physical environment accounts for much of a country’s overall preparedness

• Countries’ progress in implementing preventive and corrective measures varies greatly
  • Adherence to building codes is crucial in improving the resilience of physical environments.
  • The government of Bangladesh acknowledges 90% of structures don’t meet building codes.
The model—and the benchmarking results

For investment planning and risk management, information is presented through data analytics functions.

4) SOCIETAL RESILIENCE

0-10; 10 best prepared
Correlation co-efficient across all indicators with overall preparedness

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The qualitative analysis

The model is supplemented by trend analysis, dedicated country assessments and deep-dives.

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A study by The Economist Intelligence Unit

Framework development

The DRR framework is built around five pillars, which provide a holistic assessment of countries' operational risk levels, with a specific focus on disaster risk:

- **Institutional framework**: This domain explores a country's institutional capacity by assessing its institutions of DRM, their operation (including staffing, access to resources, reporting structure), and a country's political economy, which influences overall institutional effectiveness.

- **Disaster risk reduction policy, preparedness and response**: This domain explores a country's disaster risk reduction strategies and policies at national and sub-national levels. Its budgetary processes in the area of disaster risk, and the extent to which disaster risk has been incorporated into national development plans and other policies. It also assesses the national government's disaster preparedness and response capabilities, in particular contingency planning for disasters, hazard monitoring, early warning systems and other steps that enable an effective disaster response.

- **Economic resilience**: This domain explores economic resilience—a crucial aspect of a country's capacity to build disaster resilience and absorb the short- and long-term economic impacts of disasters. The economic-resilience domain assesses a country's economic structure and macroeconomic stability, its degree of openness to trade, its access to insurance markets, and the state of economic development.

- **Societal resilience**: This domain explores societal resilience—a measure of how societies respond to and are able to cope with the impact of disasters. The domain assesses this resilience by looking at, amongst other indicators, areas that are crucial for a society to absorb effectively the negative impact of disasters: the ability to maintain public order, the capacity to provide public services (especially in the area of health), the provision of basic needs, and proxy indicators for social cohesion and women's empowerment.

Read more about the research [here](#).