



FINANCING DISASTER RECOVERY

International Recovery Platform

Based on: Financial protection of the State against Natural Disasters – Francis Ghesquiere and Olivier Mahul

The Different Dimensions of a Financial Protection Framework

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THE DIFFERENT DIMENSIONS OF A FINANCIAL PROTECTION FRAMEWORK



Sources of Financing Post-Disaster

Governments generally have access to various sources of financing following a disaster. These sources can be categorized as ex-post and ex-ante financing instruments.

Ex-post instruments are sources that do not require advance planning. This includes budget reallocation, domestic credit, external credit, tax increase, and donor assistance.

Ex-ante risk financing instruments require pro-active advance planning and include reserves or calamity funds, budget contingencies, contingent debt facility and risk transfer mechanisms.

Risk transfer instruments are instruments through which risk is ceded to a third party, such as traditional insurance and reinsurance, parametric insurance (where insurance payouts are triggered by pre-defined parameters such as the wind-speed of a hurricane) and Alternative Risk Transfer (ART) instruments such as catastrophe (CAT) bonds.

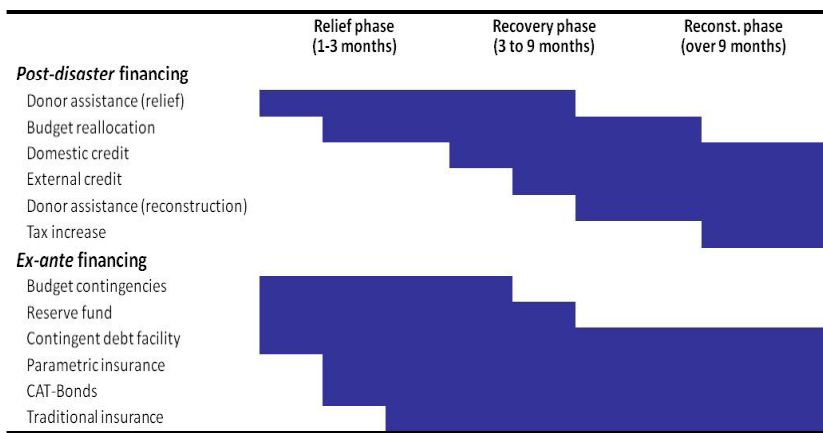
Figure: Source of post-disaster financing

The figure lists the instruments that can be used by governments to mobilize funding after a disaster.

It also provides an assessment of the time necessary to mobilize funds through these instruments. The main advantage of ex-ante instruments is that they are secured before a disaster and thus allow for quick disbursement post disaster. On the contrary, ex-post instruments can take some time to mobilize.



Figure: Source of post-disaster financing



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The Cost of Financial Instrument

Obviously, **grant financing** from donors will always be the **cheapest source** of financing post disaster. Many donors have well-established humanitarian programs and can be quick to respond, particularly to support relief operations. Unfortunately, donor financing is plagued with **limitations**.

1. It is often **driven by media coverage**, making donor assistance difficult to predict. For example, the catastrophic floods in Guyana in 2005 occurred just a few weeks after the major earthquake in Pakistan in October 2005, and had very limited media coverage resulting in limited international assistance.
2. Mobilizing such funds and making the necessary arrangements to program and disburse them is a **complex process that can take months** to complete.
3. Donor funding after an event sometimes comes at the **expense of pre-established program** and thus implies an **opportunity cost**.
4. With limited resources, donors are rarely able to support **larger reconstruction programs**.

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The cost of financial instrument

Governments' own reserves, budget contingencies, budget reallocations and emergency loans are the most common sources of post-disaster financing. Unfortunately, all also have limitations.

1. **Budget contingencies** usually represent about **2 to 5 percent** of government expenditures (such as in Vietnam, Indonesia or Colombia) and are not earmarked only for natural disasters. Vietnam, for example, has experienced several cases where a major cyclone hit the country in November, when the contingency budget had already been fully exhausted.
2. Systematic use of **budget reallocations endangers development programs** that have often required years of preparation.
3. **Emergency loans** may take a **long time to negotiate** and do not allow for immediate resource mobilization.

Finally, governments have recently taken a closer look at instruments available in the financial markets such as traditional insurance, parametric insurance and ART mechanisms (CAT-Bonds in particular). **Traditional insurance** is already in use in many countries to **insure public and private assets**. When properly designed, governments in many parts of the world have been able to **reduce the impact of disasters on their budget**.

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Box 1. Reducing the moral Hazard of post-disaster assistance

Nevertheless, the use of insurance and ART remains a relatively **expensive proposition** for governments.

- The Development Policy Loan (DPL) with **Catastrophe Risk Deferred Drawdown Option**, DPL with **CAT DDO**, is a financial instrument that offers IBRD-eligible countries **immediate liquidity** of up to **USD\$500 million or 0.25 percent of GDP** (whichever is less) in case of a natural disaster. The instrument was designed by the World Bank to provide affected countries with **bridge financing** while other sources of funding are being mobilized.
- The CAT DDO was created to **encourage investment in risk reduction**. Indeed, to have access to this contingent credit, **countries must show that they have engaged in a comprehensive disaster management program**.
- As such, the DPL with CAT DDO is the first financial instrument offered by the donor community that aims at addressing the problem of moral hazard in donor funding for disaster recovery.

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The Administrative and Legal Dimension

There is no point in mobilizing resources after a disaster if no **mechanisms** exist **to execute** these resources in an emergency. In too many cases, efforts to make resources available quickly are rendered fruitless by the multiple steps required to appropriate and to execute these resources.

For example, in some countries **emergency appropriation** can only be done with the parliament's approval, a procedure that is often **cumbersome and plagued with delays**.

An exercise rarely done by governments but extremely useful is to **conduct a disaster simulation** with the various parties involved in post-disaster financing and assistance, including the budget office. Such simulation invariably helps **identify bottlenecks and weaknesses** in existing budget processes, emergency procurement, contract monitoring, and payment systems, among other aspects.

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BRINGING IT ALL TOGETHER

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Combining Financial Instruments

How does it all come together and how can we **combine the various instruments** in an efficient and effective financial protection strategy for governments?

Catastrophe risk layering can be used to design a **risk financing strategy** (see Figure). Budget contingencies together with reserves are the **cheapest source of ex-ante** risk financing and will generally be used to cover the recurrent losses. Other sources of financing such as contingent credit, emergency loans and possibly insurance should **enter into play only once reserves and budget contingencies** are exhausted or cannot be accessed fast enough.

A **"bottom-up" approach** is recommended: the government first secures funds for recurrent disaster events and then increases its post-disaster financial capacity to finance less frequent but more severe events.

The sequence is:

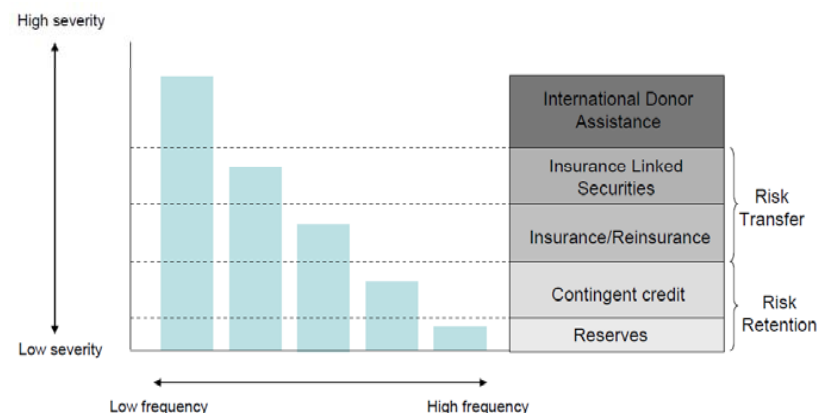
1. The **need for immediate liquidity** to ensure that relief and recovery are not delayed.
2. The need to mobilize sufficient **resources for reconstruction**.

Amounts needed for reconstruction generally dwarf liquidity needs but are not bound by the same **time constraints**.

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Figure: Catastrophe risk layering



Source: Authors.

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Emergency Risk Financing: Covering Immediate Liquidity Needs

BRINGING IT ALL TOGETHER

Risk transfer remains an **expensive proposition** for governments that otherwise have access to sovereign financing.

Nevertheless, the **swiftness** at which risk transfer instruments can sometimes **provide liquidity** without requiring access to credit makes them attractive to some governments.

This is particularly the case for small states that do not generally have sufficient capacity to build reserves and are restricted in their access to credit due to already high debt ratios.

The **Caribbean Catastrophe Risk Insurance Facility (CCRIF)** provides an example where small island states acted together to create a **regional reserve mechanism** to secure access to **immediate liquidity** in case of a major disaster.

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Box: Reducing the moral Hazard of post-disaster assistance

BRINGING IT ALL TOGETHER

The World Bank assisted CARICOM in establishing the Caribbean Catastrophe Risk Insurance Facility (CCRIF), a joint reserve facility that offers liquidity coverage, akin to insurance, to **16 Caribbean Countries** exposed to earthquakes and hurricanes.

The CCRIF was **capitalized with support from participating countries and donor partners**. It combines the benefits of pooled reserves with the capacity of the international financial markets. To do so, it retains the first loss through its own reserves while transferring the excess risk to the international capital markets.

The Facility became operational on June 1, 2007, and can count on its own **reserves** of over **US\$90 million** and **reinsurance of US\$110 million**. This provides the Facility with **US\$200 million of risk capital**.

Drawing on the lessons of the CCRIF, the Pacific island states are exploring the creation of the **Pacific Disaster Reserve Fund**.

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Box: Catastrophe bonds

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CAT bonds are a class of assets known as **event-linked bonds, which trigger payments on the occurrence of a specified event**. Most event-linked bonds issued to date have been linked to catastrophes such as hurricanes and earthquakes, although bonds also have been issued that respond to mortality events.

Capital raised by issuing the bond is invested in safe securities such as **Treasury bonds**, which are held by a special purpose vehicle (SPV). The bond issuer holds a call option on the principal in the SPV with triggers spelled out in a bond contract. Those can be expressed in terms of the **issuer's losses from a predefined catastrophic event**, by hazard event characteristics, or by hazard event location. **If the defined catastrophic event occurs, the bond issuer can withdraw funds from the SPV to pay claims**, and part or all of interest and principal payments are forgiven. If the defined catastrophic event does not occur, the **investors receive their principal plus interest**. The typical **maturity** of CAT bonds is **1–5 years**, with an average maturity of 3 years.

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Financing Recovery and Reconstruction

BRINGING IT ALL TOGETHER

The resources required for larger reconstruction programs are rarely required in the immediate aftermath of a disaster. **Reconstruction planning takes time**, engineers need to design new infrastructure, projects have to be tendered and contractors have to mobilize. It is not rare that actual reconstruction operations start six months or more after a disaster.

This **delay gives time** for governments to **reallocate** planned capital expenditures in their future budget and access additional credit on the domestic or international markets. Programs that made sense before a disaster are sometimes rendered irrelevant by the disaster itself. **Resources from less urgent projects** can often be redirected to the affected area. With sufficient time, Ministries of Finance can also prepare **bond issuances** and negotiate **emergency loans** with multilateral and other **financial institutions**.

Finally, governments will sometimes establish **special taxes** to support reconstruction. This was the case in **Colombia**, where the government established a special tax to support FOREC, a fiduciary entity established to finance the reconstruction of the coffee region after it was devastated by an earthquake in 1998.

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RECENT EXPERIENCE USING TRADITIONAL PROPERTY CATASTROPHE INSURANCE

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Combining Financial Instruments

The establishment of the **Turkish Catastrophe Insurance Pool (TCIP)** helped the Government of Turkey **reduce its contingent liability** by **promoting domestic property catastrophe insurance for private dwellings**.

Making it possible for homeowners to purchase insurance, the Government of Turkey has **increased the number of citizens who would be compensated by the private sector** in case of an earthquake.

In addition, by **making insurance compulsory** for middle- and high-income urban households, the Government of Turkey has significantly reduced the number of homeowners likely to require financial assistance after a disaster.

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The Turkish Catastrophe Insurance Program

The Turkish Catastrophe Insurance Pool, TCIP, was established in the aftermath of the Marmara earthquake in 2000, with assistance from the World Bank. Traditionally, Turkey's private insurance market was unable to provide adequate capacity for catastrophe property insurance against earthquake risk, and the **Government of Turkey faced major financial exposure in the post-disaster reconstruction of private property**. Consequently, the Government of Turkey's objectives for TCIP were to:

- **Ensure that all property tax-paying dwellings have earthquake insurance cover;**
- **Reduce government fiscal exposure** to the impact of earthquakes;
- **Transfer catastrophe risk** to the international reinsurance market;
- **Encourage physical risk mitigation** through insurance.

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The Turkish Catastrophe Insurance Program

TCIP was established in 2000 as a **public sector insurance company**, managed on sound technical and commercial insurance principles. The company's initial capital was supplemented by a World Bank contingent loan. TCIP purchases commercial reinsurance and the Government of Turkey acts as a catastrophe reinsurer of last resort for claims arising out of an earthquake with a return period of greater than 300 years.

The TCIP Policy was designed as a stand-alone property earthquake policy with a **maximum sum insured per policy** of US\$65,000 and an **average yearly premium** of US\$46. **Premium rates** are based on the **construction type** (two types are possible) and **property location** (**five earthquake risk zones** were identified) and vary from less than 0.05% for a concrete reinforced house in a low risk zone to 0.60% for a house located in the highest risk zone.

The policy is distributed by about thirty existing Turkish insurance companies, which receive a commission. The government invested heavily in **insurance awareness campaigns** and made earthquake insurance **compulsory** for home-owners in urban areas.

Cover is **voluntary for homeowners in rural areas**.

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