Disaster Risk Transfer

The World Bank has transferred $6.5 billion of disaster risk to insurance and capital markets for clients, of which $4.7 billion was through catastrophe (cat) bonds covering hurricane, earthquake, and pandemic events.

Introduction

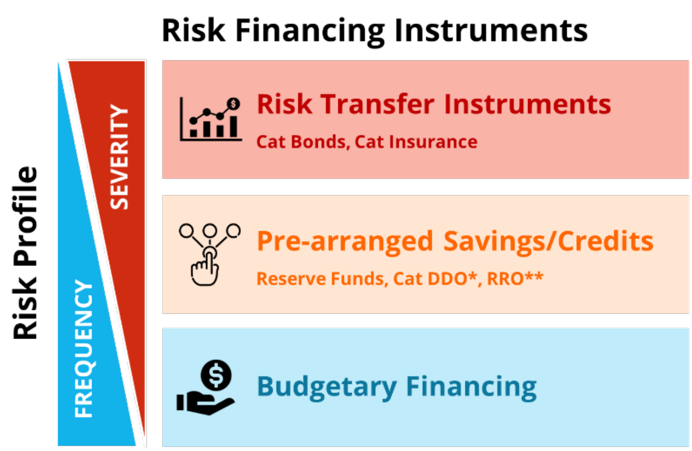
World Bank (WB) clients face disaster risks that can significantly disrupt development progress. Financial resilience can be increased using a variety of instruments tailored to the risk characteristics countries face (see Figure 1). Disaster risk transfer, through cat bonds or insurance, is typically used to protect against the financial consequences of very severe events, whereas other products (such as reserve funds and disaster contingent credit lines) can be used to respond to more frequent and less severe events.

World Bank Disaster Risk Transfer (DRT)

The WB intermediates between clients and the market, providing insurance directly to clients and simultaneously transferring that risk to international reinsurance providers (through reinsurance or swap agreements) and/or capital markets investors (through cat bonds). The client's counterparty for the insurance is the WB, a triple A-rated institution. These DRT transactions benefit from the WB's experience, expertise, market standing, and access to markets and complement other risk management products used by countries.

WB DRT transactions have all been parametric with payouts triggered by the physical parameters of an event rather than actual losses incurred. For example, the WB issued cat bonds covering earthquake events in Mexico that provide payouts to the Government if the magnitude and depth of an earthquake meet pre-agreed criteria. These parameters are available within weeks of an event occurring, allowing for quick and transparent payouts to the Government, with no requirement for a detailed loss assessment.

Figure 1. Layering Approach to Disaster Risk Financing



** Cat Deferred Drawdown Option (Cat DDO) is the WB's contingent credit product for disasters*
*** Rapid Response Option (RRO) is a WB option to access undisbursed balances for disasters*

Connecting DRT to Bank Financing

DRT transactions can be standalone (paid for directly by clients) or embedded within WB projects where clients can pay the risk transfer costs (premium plus transaction costs) using the proceeds of WB financing or by adding the costs to WB loan interest payments.

World Bank DRT History

As of September 2024, the WB has executed 55 DRTs that provided approximately $6.5 billion of coverage to countries for earthquake, hurricane, tsunami, drought, and pandemic events (see Table 1). This includes 32 cat bonds, totaling $4.7 billion.

Market Placement

The WB, together with clients and lead managers, decide on an appropriate market placement strategy - whether in the reinsurance market, cat bond market, or both - during the preparation of a transaction. The placement strategy is determined based on the risks being transferred, volume targets, and market conditions.

The cat bond market provides price transparency, and typically can provide greater capacity and coverage for longer durations than the traditional reinsurance market. However, cat bond transactions are more complex, and have greater modeling requirements and transaction costs compared to traditional reinsurance. For smaller volume targets and non-USD risk transfer, traditional reinsurance is often more appropriate.

When volume targets are large and there is significant pricing uncertainty, a dual placement strategy can be used to place risks simultaneously in reinsurance and capital markets. Although it brings greater complexity, the WB successfully followed this approach for Chile earthquake risk in 2023 and pandemic risk in 2017, which optimized both price and size for WB clients.

Table 1: World Bank DRT Transactions (as of September 2024)

Client	Peril	Transactions	Amount (USD m)	Payout (USD m)
Mexico	Earthquake & Hurricane	3-year Cat Bonds in 2009*, 2012*, 2017; 2-year in 2018; 4-year in 2020, 2024	**2,305**	**260**
Chile	Earthquake	3-year Cat Bond in 2018, 3-year Cat Bond and Swaps in 2023	**1,130**	**0**
The Philippines	Earthquake & Tropical Cyclone	1-year Cat Insurance in 2017 & 2018, 3-year Cat Bonds in 2019	**820**	**81**
Uruguay	Drought & Oil Prices	1.5-year Weather & Commodity Derivative in 2013	**450**	**0**
IDA Countries	Pandemics	3-year Cat Bonds & Swaps in 2017	**425**	**196**
Colombia	Earthquake	3-year Cat Bond in 2018	**400**	**0**
Jamaica	Tropical Cyclone	Cat Bond for 3 hurricane seasons in 2021 & 4 seasons in 2024	**335**	**0**
Pacific Cat Risk Financing Initiative	Earthquake, Tsunami & Tropical Cyclone	1-year Cat Insurance (for Pacific Island Countries) annually from 2012 to 2016	**232**	**3**
Caribbean Catastrophe Risk Insurance Facility	Earthquake & Tropical Cyclone	1-year Cat Insurance annually from 2007 to 2013 3-year Cat Bond in 2014	**204**	**0**
Peru	Earthquake	3-year Cat Bond in 2018	**200**	**60**
Malawi	Drought & Maize Prices	1-year Weather & Commodity Derivative Annually from 2008 to 2011	**19**	**0**
TOTAL			**6,520**	**600**

* The WB was arranger of the 2009 and 2012 cat bonds for Mexico.

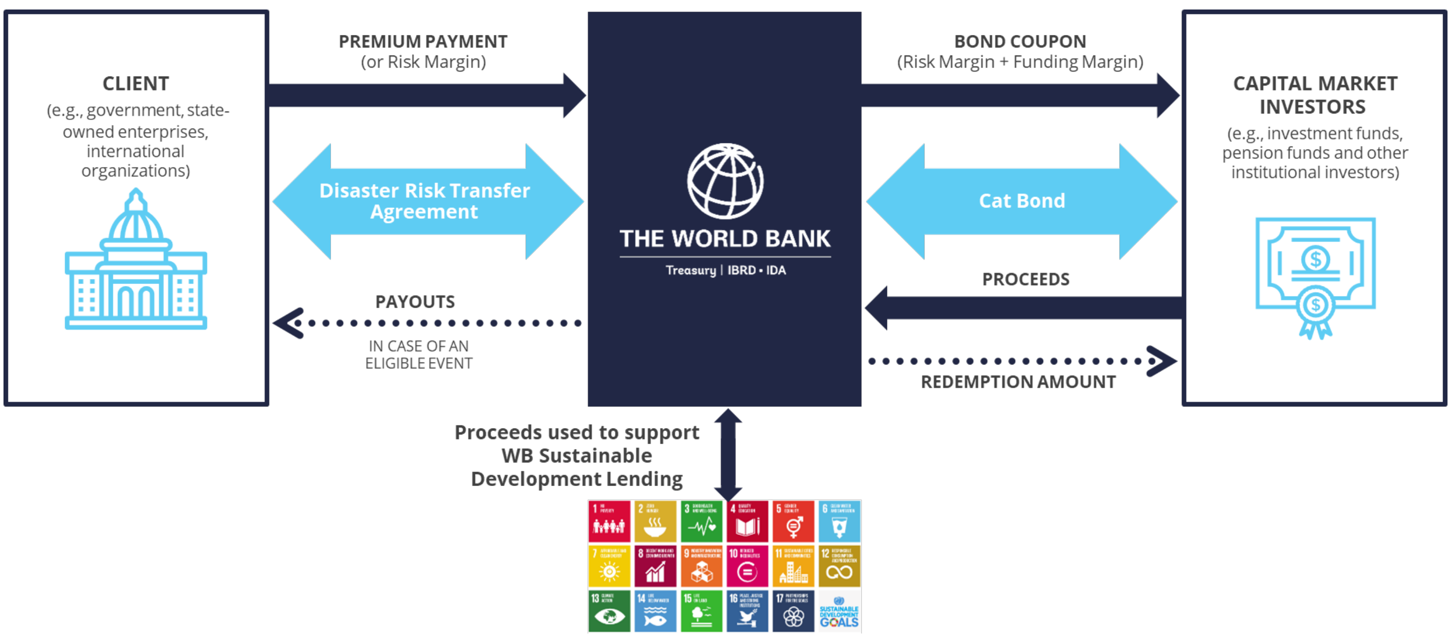
Cat Bonds

Cat bonds have been the predominant instrument for the WB to place the risk in the market. Cat bonds are structured bonds that transfer disaster risk to capital market investors. The investors risk losing some or all the capital invested if a disaster event occurs. In exchange, investors receive a coupon that reflects the insurance premium for such risk.

The WB executes cat bond transactions for clients as follows (see Figure 2):

1. Clients sign a risk transfer agreement with the WB, pay premiums to the WB periodically, and in exchange receive payouts from the WB if a disaster event occurs that meets pre-agreed criteria (e.g., magnitude of earthquake in a specified location is greater than 7.5).
2. Simultaneously, the WB issues a cat bond, transferring the client's disaster risk to investors. Investors earn a coupon that includes a risk margin (funded by the client's premium payments and determined through a competitive market process) and a funding margin (paid by the WB). This process determines the premium the client pays in the risk transfer agreement. If a triggering disaster occurs, the bond principal is reduced by an amount equivalent to the client's insurance payout. Any remaining principal is returned to bond investors at maturity.

Figure 2. World Bank Cat Bond Structure



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