

CREDIT MARKETS

# Catastrophe Bonds Are Latest Investment Tools That Bet on Risks of Weather, Natural Disasters

By Cecilia Gutierrez

**S&P Reporter of The Wall Street Journal.**  
**NEW YORK**—Companities and countries around the globe are investigating how to use one of Wall Street's newest concoctions—catastrophe bonds—to shield themselves from the ravages of unusual weather caused by the El Niño current in the Pacific or another earthquake like the one that devastated the Japanese city of Kobe two years ago.

Investment bankers for years have dreamed about bundling the risks of extreme weather and other natural disasters into asset-backed securities. But only recently have they managed to figure out how to do that—and to find investors willing to buy the resulting bonds.

Bankers pioneered the technique with East Coast hurricanes. Now they are expanding the idea abroad, pitching catastrophe bonds as a hedge against exposure to flooding and crop losses in Mozambique and Brazil and earthquakes in Japan.

This week, Tokio Marine & Fire Insurance Co. is marketing to U.S. investors a \$15 million bond with a payoff tied to whether and how fiercely an earthquake strikes the Tokyo metro area. The Japanese company has hired Goldman Sachs & Co. as underwriter.

In Japan, where the memory of the disastrous Kobe earthquake is still fresh in people's minds, there is a great deal of interest in raising money in the bond market to offset future damages, investment bankers said.

Meanwhile, some economists at New York's Columbia University are creating what they call the Catastrophe Fund to offer governments protection against the El Niño weather pattern, responsible for more than \$13 billion of damage worldwide the last time it hit in 1982-1983. The economists are seeking a patent for the bundle and working with Wall Street investment bankers to issue bonds using the index by this spring.

Reserve of cash, often invested in U.S. Treasury strips, to pay back buyers some fraction of their investment in case that happens.

Essentially, investors buying into the new offerings are placing their faith in the ability of geologists and meteorologists to forecast the weather, the movements of the earth and other potentially harmful events.

The risk associated with catastrophe deals makes them very different from traditional bond offerings, where the uncertainty usually is credit, risk, or the possibility that the issuer won't be able to repay bondholders.

Investors in the Japanese deal, for example, will bet on how high an earthquake registers on the Richter scale and how far beneath the earth's surface it is. They will take this bet for 10 years—the life of the bonds. In exchange, Tokio Marine is expected to offer them returns of four to 4.5 percentage points above the London inter-Bank Offered Rate.

"With corporate bonds, you can talk to management and see trends," said Chuck Silverstein, investment officer at Triwellent Insurance Co. "But with these things, an earthquake happens, and boom, you're done."

Added Steve Huber, manager of \$15.5 billion of fixed income at Aelius Investments: "The risk in catastrophe notes is tied to non-human elements and is more difficult to get your hands around."

The foreign deals will help investors to spread their perils around the world. It's less likely that a hurricane thrashes the East Coast of the U.S. the same year an earthquake strikes Japan.

"In order for us to build a diversified portfolio of risk, we don't want just risk in the United States," said Steven Goldstein, manager of the Cat Bond Investors fund, a joint venture between investors PX Re and Phoenix Home Life Mutual Insurance Co. "We are looking for risk worldwide in all lines of catastrophe businesses."

Brokers of the nascent market for catastrophe bonds envision one day, turning into asset-backed securities every type of risk—from the political risk of terrorism to the economic risk of a currency devaluation.

"You can imagine all sorts of things," said Isaac Efrati, an analyst at Moody's Investors Service. "Oil spills, currency crises, flooding, political unrest, there's a lot of room for growth."

Treasury Securities

Strong demand in the Treasury Department's 30-year bond auction helped lift long-term securities to close higher.

YIELD COMPARISONS

Based on Merrill Lynch Bond Index, priced as at midafternoon Eastern time.

	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
	High	Low	High	Low	High	Low	High	Low	High
Corp. Gen'l. Aaa	4.18	4.15	4.15	4.12	4.12	4.09	4.09	4.06	4.06
Corp. Gen'l. Aaa	4.27	4.24	4.24	4.21	4.21	4.18	4.18	4.15	4.15
Corp. Gen'l. Aaa	4.36	4.33	4.33	4.30	4.30	4.27	4.27	4.24	4.24
Corp. Gen'l. Aaa	4.45	4.42	4.42	4.39	4.39	4.36	4.36	4.33	4.33
Corp. Gen'l. Aaa	4.54	4.51	4.51	4.48	4.48	4.45	4.45	4.42	4.42
Corp. Gen'l. Aaa	4.63	4.60	4.60	4.57	4.57	4.54	4.54	4.51	4.51
Corp. Gen'l. Aaa	4.72	4.69	4.69	4.66	4.66	4.63	4.63	4.60	4.60
Corp. Gen'l. Aaa	4.81	4.78	4.78	4.75	4.75	4.72	4.72	4.69	4.69
Corp. Gen'l. Aaa	4.90	4.87	4.87	4.84	4.84	4.81	4.81	4.78	4.78
Corp. Gen'l. Aaa	4.99	4.96	4.96	4.93	4.93	4.90	4.90	4.87	4.87
Corp. Gen'l. Aaa	5.08	5.05	5.05	5.02	5.02	4.99	4.99	4.96	4.96
Corp. Gen'l. Aaa	5.17	5.14	5.14	5.11	5.11	5.08	5.08	5.05	5.05
Corp. Gen'l. Aaa	5.26	5.23	5.23	5.20	5.20	5.17	5.17	5.14	5.14
Corp. Gen'l. Aaa	5.35	5.32	5.32	5.29	5.29	5.26	5.26	5.23	5.23
Corp. Gen'l. Aaa	5.44	5.41	5.41	5.38	5.38	5.35	5.35	5.32	5.32
Corp. Gen'l. Aaa	5.53	5.50	5.50	5.47	5.47	5.44	5.44	5.41	5.41
Corp. Gen'l. Aaa	5.62	5.59	5.59	5.56	5.56	5.53	5.53	5.50	5.50
Corp. Gen'l. Aaa	5.71	5.68	5.68	5.65	5.65	5.62	5.62	5.59	5.59
Corp. Gen'l. Aaa	5.80	5.77	5.77	5.74	5.74	5.71	5.71	5.68	5.68
Corp. Gen'l. Aaa	5.89	5.86	5.86	5.83	5.83	5.80	5.80	5.77	5.77
Corp. Gen'l. Aaa	5.98	5.95	5.95	5.92	5.92	5.89	5.89	5.86	5.86
Corp. Gen'l. Aaa	6.07	6.04	6.04	6.01	6.01	5.98	5.98	5.95	5.95
Corp. Gen'l. Aaa	6.16	6.13	6.13	6.10	6.10	6.07	6.07	6.04	6.04
Corp. Gen'l. Aaa	6.25	6.22	6.22	6.19	6.19	6.16	6.16	6.13	6.13
Corp. Gen'l. Aaa	6.34	6.31	6.31	6.28	6.28	6.25	6.25	6.22	6.22
Corp. Gen'l. Aaa	6.43	6.40	6.40	6.37	6.37	6.34	6.34	6.31	6.31
Corp. Gen'l. Aaa	6.52	6.49	6.49	6.46	6.46	6.43	6.43	6.40	6.40
Corp. Gen'l. Aaa	6.61	6.58	6.58	6.55	6.55	6.52	6.52	6.49	6.49
Corp. Gen'l. Aaa	6.70	6.67	6.67	6.64	6.64	6.61	6.61	6.58	6.58
Corp. Gen'l. Aaa	6.79	6.76	6.76	6.73	6.73	6.70	6.70	6.67	6.67
Corp. Gen'l. Aaa	6.88	6.85	6.85	6.82	6.82	6.79	6.79	6.76	6.76
Corp. Gen'l. Aaa	6.97	6.94	6.94	6.91	6.91	6.88	6.88	6.85	6.85
Corp. Gen'l. Aaa	7.06	7.03	7.03	7.00	7.00	6.97	6.97	6.94	6.94
Corp. Gen'l. Aaa	7.15	7.12	7.12	7.09	7.09	7.06	7.06	7.03	7.03
Corp. Gen'l. Aaa	7.24	7.21	7.21	7.18	7.18	7.15	7.15	7.12	7.12
Corp. Gen'l. Aaa	7.33	7.30	7.30	7.27	7.27	7.24	7.24	7.21	7.21
Corp. Gen'l. Aaa	7.42	7.39	7.39	7.36	7.36	7.33	7.33	7.30	7.30
Corp. Gen'l. Aaa	7.51	7.48	7.48	7.45	7.45	7.42	7.42	7.39	7.39
Corp. Gen'l. Aaa	7.60	7.57	7.57	7.54	7.54	7.51	7.51	7.48	7.48
Corp. Gen'l. Aaa	7.69	7.66	7.66	7.63	7.63	7.60	7.60	7.57	7.57
Corp. Gen'l. Aaa	7.78	7.75	7.75	7.72	7.72	7.69	7.69	7.66	7.66
Corp. Gen'l. Aaa	7.87	7.84	7.84	7.81	7.81	7.78	7.78	7.75	7.75
Corp. Gen'l. Aaa	7.96	7.93	7.93	7.90	7.90	7.87	7.87	7.84	7.84
Corp. Gen'l. Aaa	8.05	8.02	8.02	7.99	7.99	7.96	7.96	7.93	7.93
Corp. Gen'l. Aaa	8.14	8.11	8.11	8.08	8.08	8.05	8.05	8.02	8.02
Corp. Gen'l. Aaa	8.23	8.20	8.20	8.17	8.17	8.14	8.14	8.11	8.11
Corp. Gen'l. Aaa	8.32	8.29	8.29	8.26	8.26	8.23	8.23	8.20	8.20
Corp. Gen'l. Aaa	8.41	8.38	8.38	8.35	8.35	8.32	8.32	8.29	8.29
Corp. Gen'l. Aaa	8.50	8.47	8.47	8.44	8.44	8.41	8.41	8.38	8.38
Corp. Gen'l. Aaa	8.59	8.56	8.56	8.53	8.53	8.50	8.50	8.47	8.47
Corp. Gen'l. Aaa	8.68	8.65	8.65	8.62	8.62	8.59	8.59	8.56	8.56
Corp. Gen'l. Aaa	8.77	8.74	8.74	8.71	8.71	8.68	8.68	8.65	8.65
Corp. Gen'l. Aaa	8.86	8.83	8.83	8.80	8.80	8.77	8.77	8.74	8.74
Corp. Gen'l. Aaa	8.95	8.92	8.92	8.89	8.89	8.86	8.86	8.83	8.83
Corp. Gen'l. Aaa	9.04	9.01	9.01	8.98	8.98	8.95	8.95	8.92	8.92
Corp. Gen'l. Aaa	9.13	9.10	9.10	9.07	9.07	9.04	9.04	9.01	9.01
Corp. Gen'l. Aaa	9.22	9.19	9.19	9.16	9.16	9.13	9.13	9.10	9.10
Corp. Gen'l. Aaa	9.31	9.28	9.28	9.25	9.25	9.22	9.22	9.19	9.19
Corp. Gen'l. Aaa	9.40	9.37	9.37	9.34	9.34	9.31	9.31	9.28	9.28
Corp. Gen'l. Aaa	9.49	9.46	9.46	9.43	9.43	9.40	9.40	9.37	9.37
Corp. Gen'l. Aaa	9.58	9.55	9.55	9.52	9.52	9.49	9.49	9.46	9.46
Corp. Gen'l. Aaa	9.67	9.64	9.64	9.61	9.61	9.58	9.58	9.55	9.55
Corp. Gen'l. Aaa	9.76	9.73	9.73	9.70	9.70	9.67	9.67	9.64	9.64
Corp. Gen'l. Aaa	9.85	9.82	9.82	9.79	9.79	9.76	9.76	9.73	9.73
Corp. Gen'l. Aaa	9.94	9.91	9.91	9.88	9.88	9.85	9.85	9.82	9.82
Corp. Gen'l. Aaa	10.03	10.00	10.00	9.97	9.97	9.94	9.94	9.91	9.91
Corp. Gen'l. Aaa	10.12	10.09	10.09	10.06	10.06	10.03	10.03	10.00	10.00
Corp. Gen'l. Aaa	10.21	10.18	10.18	10.15	10.15	10.12	10.12	10.09	10.09
Corp. Gen'l. Aaa	10.30	10.27	10.27	10.24	10.24	10.21	10.21	10.18	10.18
Corp. Gen'l. Aaa	10.39	10.36	10.36	10.33	10.33	10.30	10.30	10.27	10.27
Corp. Gen'l. Aaa	10.48	10.45	10.45	10.42	10.42	10.39	10.39	10.36	10.36
Corp. Gen'l. Aaa	10.57	10.54	10.54	10.51	10.51	10.48	10.48	10.45	10.45
Corp. Gen'l. Aaa	10.66	10.63	10.63	10.60	10.60	10.57	10.57	10.54	10.54
Corp. Gen'l. Aaa	10.75	10.72	10.72	10.69	10.69	10.66	10.66	10.63	10.63
Corp. Gen'l. Aaa	10.84	10.81	10.81	10.78	10.78	10.75	10.75	10.72	10.72
Corp. Gen'l. Aaa	10.93	10.90	10.90	10.87	10.87	10.84	10.84	10.81	10.81
Corp. Gen'l. Aaa	11.02	10.99	10.99	10.96	10.96	10.93	10.93	10.90	10.90
Corp. Gen'l. Aaa	11.11	11.08	11.08	11.05	11.05	11.02	11.02	10.99	10.99
Corp. Gen'l. Aaa	11.20	11.17	11.17	11.14	11.14	11.11	11.11	11.08	11.08
Corp. Gen'l. Aaa	11.29	11.26	11.26	11.23	11.23	11.20	11.20	11.17	11.17
Corp. Gen'l. Aaa	11.38	11.35	11.35	11.32	11.32	11.29	11.29	11.26	11.26
Corp. Gen'l. Aaa	11.47	11.44	11.44	11.41	11.41	11.38	11.38	11.35	11.35
Corp. Gen'l. Aaa	11.56	11.53	11.53	11.50	11.50	11.47	11.47	11.44	11.44
Corp. Gen'l. Aaa	11.65	11.62	11.62	11.59	11.59	11.56	11.56	11.53	11.53
Corp. Gen'l. Aaa	11.74	11.71	11.71	11.68	11.68	11.65	11.65	11.62	11.62
Corp. Gen'l. Aaa	11.83	11.80	11.80	11.77	11.77	11.74	11.74	11.71	11.71
Corp. Gen'l. Aaa	11.92	11.89	11.89	11.86	11.86	11.83	11.83	11.80	11.80
Corp. Gen'l. Aaa	12.01	11.98	11.98	11.95	11.95	11.92	11.92	11.89	11.89
Corp. Gen'l. Aaa	12.10	12.07	12.07	12.04	12.04	12.01	12.01	11.98	11.98
Corp. Gen'l. Aaa	12.19	12.16	12.16	12.13	12.13	12.10	12.10	12.07	12.07
Corp. Gen'l. Aaa	12.28	12.25	12.25	12.22	12.22	12.19	12.19	12.16	12.16
Corp. Gen'l. Aaa	12.37	12.34	12.34	12.31	12.31	12.28	12.28	12.25	12.25
Corp. Gen'l. Aaa	12.46	12.43							