

GAO

Testimony

Before the Subcommittee on Oversight and
Investigations, Committee on Financial Services,
House of Representatives

For Release on Delivery
Expected at 2:00 p.m., EDT,
on Tuesday, October 8, 2002

CATASTROPHE INSURANCE RISKS

The Role of Risk-Linked Securities

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CATASTROPHE INSURANCE RISKS

The Role of Risk-Linked Securities

Highlights of [GAO-03-195T](#), a testimony for the Subcommittee on Oversight and Investigations, House Committee on Financial Services

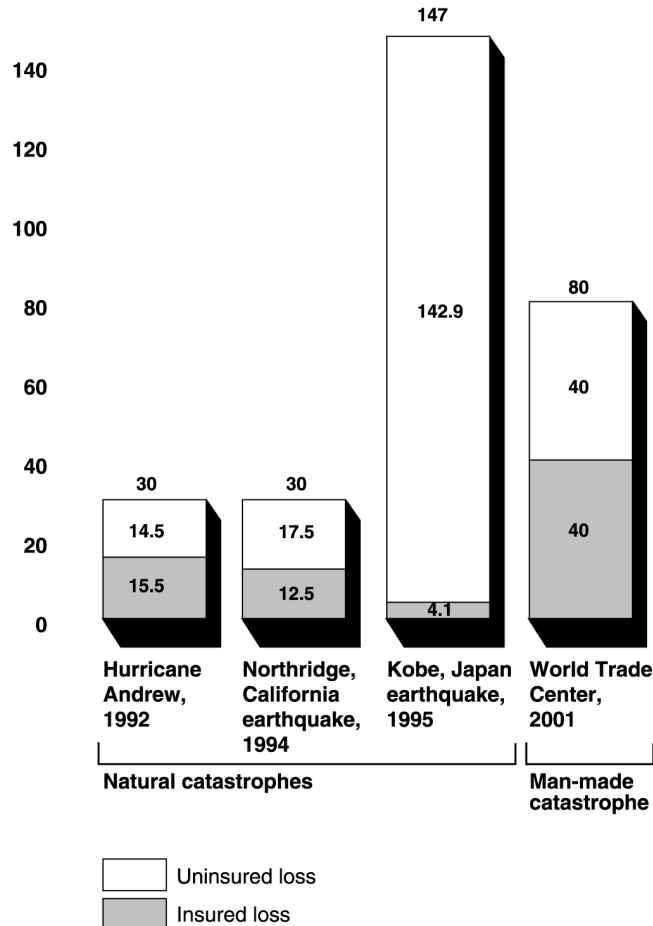
Why GAO Did This Study

Because of population growth, resulting real estate development, and rising real estate values in hazard-prone areas, our nation is increasingly exposed to higher property casualty losses—both insured and uninsured—from natural catastrophes than in the past. In the 1990s, a series of natural disasters, including Hurricane Andrew and the Northridge earthquake, raised questions about the adequacy of the insurance industry’s financial capacity to cover large catastrophes without limiting coverage or raising premiums. Recognizing this greater exposure and responding to concerns about insurance market capacity, participants in the insurance industry and capital markets have developed new capital market instruments as an alternative to traditional property-casualty reinsurance, or insurance for insurers. GAO’s objectives were to (1) describe catastrophe risk and how the insurance and capital markets provide coverage against such risks; (2) describe how risk-linked securities, particularly catastrophe bonds, are structured; and (3) analyze how key regulatory, accounting, tax, and investor issues might affect the use of risk-linked securities.

What GAO Found

Natural catastrophes are infrequent events that cause severe losses. More than 68 million Americans live in hurricane-vulnerable coastal areas, and 80 percent of Californians live near active earthquake faults. Insurance companies who write property-casualty policies in these high-risk areas try to spread the risks, traditionally through reinsurance. When reinsurance prices or availability became problematic in the 1990s, insurers turned to risk-linked securities as an alternative means to spread catastrophe risk. Most risk-linked securities are catastrophe bonds, which (1) have complicated structures, (2) are created offshore through special purpose entities, and (3) generally receive noninvestment-grade ratings. Key regulatory, accounting, tax, and investor issues pose challenges to expanding the use of risk-linked securities, and GAO discusses the advantages and disadvantages of potential changes.

Estimated Losses from Recent Large Catastrophes
160 Dollars in billions



Sources: Insurance Information Institute and other insurance industry sources.

Madame Chairwoman and Members of the Subcommittee:

I am pleased to be here today to discuss the results of our work on the potential for risk-linked securities to address catastrophic risks arising from natural events such as hurricanes and earthquakes. Population growth, real estate development, and rising real estate values in hazard-prone areas increasingly expose our nation to higher losses—both insured and uninsured—from natural catastrophes than in the past. This exposure increases pressure on businesses; individuals; and federal, state, and local governments to assume ever-larger liabilities for losses associated with natural catastrophes. A series of natural disasters in the 1990s, including Hurricane Andrew and the Northridge earthquake, raised questions about the financial capacity of the insurance industry to cover large catastrophes without limiting coverage or substantially raising premiums, and called attention to ways of raising additional sources of capital to help cover catastrophe risk. Participants in the insurance industry and capital markets developed new capital market instruments, risk-linked securities, which both expand insurance and reinsurance capacity and provide an alternative to traditional property-casualty reinsurance. We were asked to analyze the role of risk-linked securities in the coverage of catastrophe risk and factors affecting their use.

Today I will talk about (1) what catastrophe risk is and how the insurance and capital markets provide coverage for such risks; (2) how risk-linked securities, particularly catastrophe bonds, are structured; and (3) how key regulatory, accounting, tax, and investor issues might affect the use of these securities. Our overall objective is to provide the Committee with information and perspectives to consider as it moves forward in this important and complex area. For a fuller discussion of these points, I refer you to our report entitled *Catastrophe Insurance Risks: The Role of Risk-Linked Securities and Factors Affecting Their Use* ([GAO-02-941](#)), which was released today at this hearing.

Even though we did not have statutory audit or access-to-records authority with respect to the involved private-sector entities, we obtained extensive documentary and testimonial evidence from various groups, including insurance and reinsurance companies, investment banks, investors, rating agencies, firms that develop models to analyze catastrophic risks, regulators, and academic experts. However, we were not able to verify the accuracy of data provided by these groups.

Our statement covers a number of issues affecting risk-linked securities, but we make no recommendations. While we have identified factors that

industry and capital markets experts believe might cause the use of risk-linked securities to expand or contract, it is difficult to predict the future use of these securities—either under current accounting, regulatory, and tax policies or under changed policies. We do not take a position on whether the increased use of risk-linked securities is beneficial or detrimental.

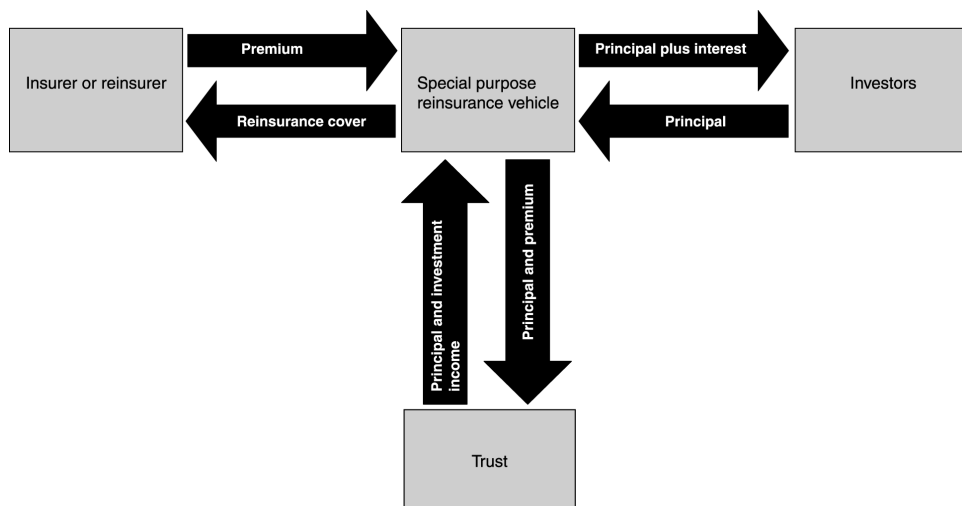
In summary:

Catastrophe risk is a global phenomenon and insurance and reinsurance companies with global operations often provide coverage. We focused on catastrophe risk in the United States. The map before you shows the geographic distribution of catastrophe risk in the United States and highlights areas that are the most likely to experience certain types of natural catastrophes. The characteristics of natural disasters prompt most insurers to limit the amount and type of catastrophe risk they hold. For example, property-casualty insurers with too many policies concentrated in California and Florida—states that are more subject to natural catastrophes—need ways to diversify and transfer that risk. One key way to transfer risk is through reinsurance. Traditional reinsurance provides indemnity-based coverage, which compensates part or all of an insurer's losses as they are incurred, and depends on well-developed business relationships between insurers and reinsurers, which facilitate relatively low transaction costs. However, in a situation involving extremely large or multiple catastrophic events, insurers might not have purchased sufficient reinsurance or reinsurers might not have sufficient capital to meet their existing obligations. Further, reinsurance capital is diminished after a catastrophic loss, and reinsurers might raise prices or limit the availability of future coverage. In the 1990s, the combination of two extremely costly disasters—Andrew and Northridge—and conditions in the reinsurance market helped spur the development of risk-linked securities and other alternatives to traditional reinsurance. The securities provided new access to national and international capital markets. Yet to date, risk-linked securities represent a small share—less than 0.5 percent—of worldwide catastrophe insurance, according to the Swiss Reinsurance Company.

We focused on catastrophe bonds because they currently comprise the largest share of risk-linked securities, which also include other

instruments such as options.¹ To develop a catastrophe bond, a sponsor, usually an insurance or reinsurance company, creates a special purpose reinsurance vehicle (SPRV) to provide reinsurance to the sponsor and to issue bonds to the securities market. SPRVs are similar in purpose to the special purpose entities that banks and others have used to securitize their loans. These special purpose entities “pass through” principal and interest from borrowers to investors. In contrast, SPRVs, which are typically located offshore for tax, regulatory, and legal advantages, receive payments in three forms (insurance premiums, interest, and principal), invest in Treasury securities and other highly rated securities, and pay investors in another form (interest). Figure 1 illustrates cash flows among the participants in a catastrophe bond.

Figure 1: Cash Flows for a Special Purpose Reinsurance Vehicle



Source: GAO.

The sponsoring insurance company enters into a reinsurance contract and pays reinsurance premiums to the SPRV to cover specified claims. The SPRV issues bonds or debt securities for purchase by investors. The catastrophe bond offering defines a catastrophe that would trigger a loss

¹Catastrophe options were offered by the Chicago Board of Trade in 1995 and were delisted in 2000 due to lower-than-expected demand. The purchaser of a catastrophe option paid the seller a premium, and the seller provided the purchaser with a cash payment if an index measuring insurance industry catastrophe losses exceeded a certain level. If the catastrophe loss index remained below a specified level for the prescribed time period, the option expired worthless, and the seller kept the premium.

of investor principal and, if triggered, a formula to specify the compensation level from the investor to the SPRV. The SPRV is to hold the funds raised from the catastrophe bond offering in a trust in the form of Treasury securities and other highly rated assets. The SPRV deposits the payment from the investor as well as the premium from the company into the trust account. The premium paid by the SPRV sponsor and the investment income on the trust account provide the funding for the interest payments to investors and the costs of running the SPRV. If a predefined catastrophe occurs, principal that otherwise would be returned to the investors is used to fund the SPRV's payments to the insurer or sponsor. The investor's reward for taking this risk is a relatively high interest rate paid by the bonds.

Recently issued catastrophe bonds have been nonindemnity-based—that is, structured to make payments to the sponsor upon the verified occurrence of specified catastrophic events. Indemnity-based reinsurance coverage compensates insurers for part or all of their losses from insured claims.² Although insurers prefer indemnity-based coverage because reinsurance payments are directly linked to claims actually incurred, reinsurers face the risk of paying more if the insurer underwrites or selects risks poorly, or has poor claims-settlement practices. With an indemnity-based catastrophe bond, investors would have greater exposure to risks from poor underwriting and claims settlement practices because investors might not be able to monitor the insurer's behavior. As a result, investors prefer nonindemnity-based bonds because they are tied to an objective index or measure that is unrelated to the insurance company's management.

In addition to looking at the characteristics and coverage of catastrophe risk and the structure of risk-linked securities, we identified and analyzed regulatory, accounting, tax, and investor issues that might affect the use of risk-linked securities:

²Indemnity coverage specifies a simple relationship that is based on the insurer's actual incurred claims. For example, an insurer could contract with a reinsurer to cover half of all claims—up to \$100 million in claims—from a hurricane over a specified time period in a certain geographic area. If a hurricane occurs where the insurer incurs \$100 million or more in claims, the reinsurer would pay the insurer \$50 million. In contrast, nonindemnity coverage specifies a specific event that triggers payment and payment formulas that are not directly related to the insurer's actual incurred claims.

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- First, accounting treatment for risk transfers occurring through nonindemnity-based, risk-linked securities is a challenge for regulators. In traditional reinsurance—that is, indemnity-based—transactions, where an insurer is compensated for part or all of its losses from insured claims, the insurer gets credit on its balance sheet in the form of a deduction from liability for the risk transferred to the reinsurer and can reduce the amount of regulatory risk-based capital required. Credit for reinsurance is designed to ensure that a true transfer of risk has occurred and that the reinsurance company will be able to pay any claims. In nonindemnity transactions using catastrophe bonds, payments may be triggered by an index or independently measurable value, such as wind speed, and are not directly related to incurred claims. When a catastrophic event triggers a catastrophe bond, payment formulas determine the reduction of the investors' principal that will compensate the insurance company sponsor. As a result, it is difficult to value the true amount of risk transferred to determine credit for reinsurance. The National Association of Insurance Commissioners and interested insurance industry parties are considering revisions in the regulatory accounting treatment of risk transfer obtained through nonindemnity-based coverage. If insurance accounting standards were changed so that the value of the risk transfer could be accurately calculated and recognized as an offset to potential insurance losses, the insurer could get credit for reinsurance for risk transfers occurring through nonindemnity-based catastrophe bonds. Such changes, if adopted, could facilitate the use of risk-linked securities. However, it is important that credit for nonindemnity-based reinsurance accurately reflect the true risk transferred so that insurance company reporting on both risk evaluation and capital treatment properly reflects the risks retained.
 - Second, the Financial Accounting Standards Board is proposing a new interpretation addressing consolidation of certain special purpose entities on a sponsor's balance sheet. Under current guidance, a sponsor could avoid consolidating an SPRV as a liability on its balance sheet if the SPRV has at least 3 percent independent equity capital investment. The proposal may increase the independent capital investment required for a sponsor to treat an SPRV as independent to 10 percent of total assets. The proposal also contemplates other tests for consolidation of certain special purpose entities. While the proposed guidance is intended to improve financial transparency in capital markets and stem potential abuses of special purpose entities, it could also increase the cost of issuing catastrophe bonds. If the proposed interpretation requires consolidation, sponsors might turn to risk-linked securities, such as catastrophe options, that do not require an SPRV.

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- Third, insurance industry representatives are considering a legislative proposal to help expand the use of domestically issued, or onshore, catastrophe bonds. SPRVs are typically located offshore, in part, to avoid U.S. taxes. By allowing special “pass-through” tax treatment, the proposal would eliminate U.S. taxation at the SPRV level. The pass-through treatment would be similar to that already provided to Real Estate Mortgage Investment Conduits and Financial Asset Securitization Investment Trusts. To the extent that domestic SPRVs gained business at the expense of taxable entities, including reinsurance companies, the federal government could experience tax revenue losses. Expanded use of catastrophe bonds might occur with favorable implementing requirements, but such legislative actions might also create pressure from other industry sectors for similar tax treatment. Some elements of the insurance industry believe that any consideration of changes to the tax treatment of domestic SPRVs would have to take into account the taxation of domestic reinsurance companies. Specifically, the Reinsurance Association of America argues that if special tax treatment is provided to domestic SPRVs, they would operate under tax advantages not afforded to existing U.S. licensed and taxed reinsurance companies.
 - Fourth, unlike other bonds, catastrophe bonds, most of which are noninvestment-grade instruments, have not been sold to a wide range of investors beyond institutional investors. Investment fund managers who included catastrophe bonds in their portfolios told us that catastrophe bonds comprised 3 percent or less of those portfolios. On the one hand, the managers appreciate the diversification aspects of catastrophe bonds because the risks are generally uncorrelated with the credit risks of other parts of the bond portfolio. On the other hand, the risks are difficult to assess and investors are concerned about the limited liquidity and track record of the bonds.

Madame Chairwoman, Members of the Subcommittee, that concludes my prepared statement. I would be happy to answer any questions at this time.