Taming the Big Cats

Has Florida found a way to avoid post-catastrophe market crashes or has it set the stage for another market meltdown?

by Rade T. Musulin

Fate was smiling on the state of Florida last September. As Hurricane Georges tore through the Caribbean, leaving billions of dollars in damage and hundreds of deaths in its wake, public officials were assuring Floridians that the insurance system was well prepared to deal with the storm. Due to an extremely fortunate roll of the meteorological dice—for the citizens of Florida, at least—these claims were not put to the test.

Georges threaded a needle by passing directly over one Caribbean island after another, weakening the storm considerably. Had its path been as little as 75 miles further north, a mere nudge in meteorological terms, it could have strengthened over the warm waters north of Hispaniola and slammed into Miami with winds as strong as Andrew.

What would have happened then? Would the insurance system have been able to pay the claims? Would the entities created by the state of Florida to back up the private insurance market have been able to provide billions of dollars in promised funds, guaranteed by their ability to slap assessments on Florida's consumers for up to 30 years? How would Florida's consumers have reacted to paying off over $10 billion in bonds through decades of surcharges? And, despite all of this public debt, would Florida have experienced a repetition of the property/catastrophe market chaos that followed Andrew?

A close look at the current situation reveals disturbing parallels between the apparently healthy Florida property

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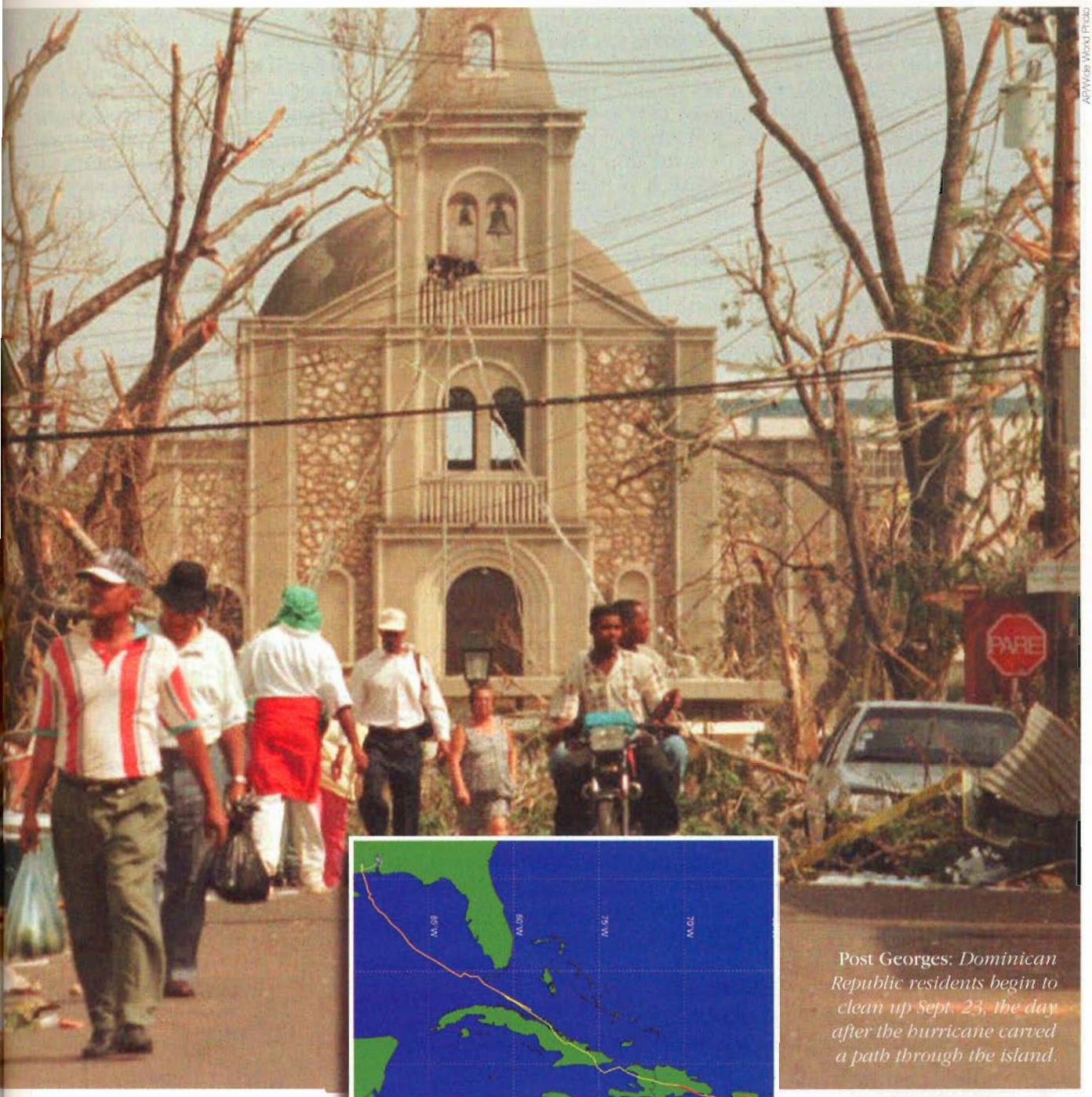
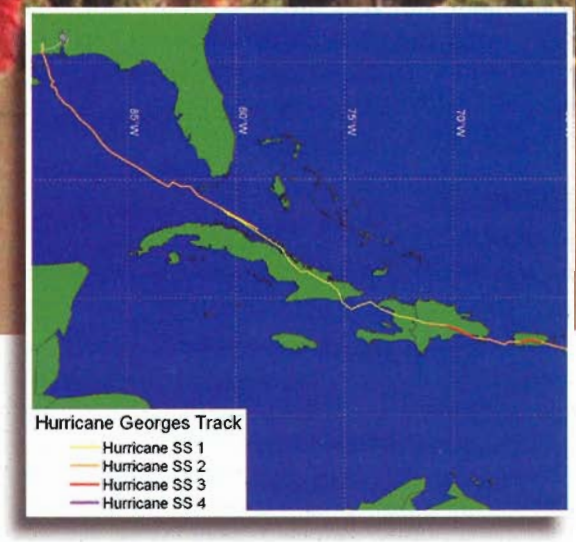


AP/Wide World Photo

Post Georges: *Dominican Republic residents begin to clean up Sept. 23, the day after the hurricane carved a path through the island.*



insurance system in July 1992 and the current one. Unless several difficult public policy issues are addressed in coming years, Florida faces another market crisis after the next storm, except that, unlike 1992, the state will start the next recovery process billions of dollars in debt.

Florida as a Model

Many states are at risk of large losses from catastrophic events and the insurance market turmoil that is likely to follow. Most have experienced some degree of market dislocation in the past decade, usually through some combination of increased prices, reductions in coverage, or restrictions in its availability. Absent a major loss event, most states have been able to muddle through the crisis through the use of market assistance plans, mandates to write or windpools.

However, severe market disruption may be only one loss event away, and most states with catastrophic exposure have to some degree considered solutions modeled on California, Florida or Hawaii. Elements of H.R. 219, the Federal Natural Disaster bill currently working its way through Congress, create incentives for states to form catastrophic funds. Thus, public policy planners throughout the country should carefully consider the lessons that can be learned from Florida's experience.

In Andrew's Wake

In the aftermath of Hurricane Andrew, Florida took a number of bold steps to bolster the property insurance system. The public policy interest was clear: A dysfunctional property insurance market threatens economic growth and the ability of citizens to rebuild their lives after hurricanes. Enormous sums of money are involved: Losses from a major hurricane hitting Miami, Fort Lauderdale or Tampa Bay could approach $100 billion. How the state chooses to finance hurricanes affects where people live, how they build their homes and whether or not Florida's economy will prosper.

To many observers, the post-Andrew reforms appear to be a resounding success. The state catastrophe fund has $11 billion of claims-paying capacity, far beyond the most optimistic projections when it was created in 1993. Insurance rates at the consumer level are dropping after years of large increases. Many new companies have entered the market, helping to reduce the population in the Florida Residential Property Casualty Joint Underwriting Association (FRPCJUA) from almost 1 million to just over 225,000. Property insurance seems to be fading from the public's radar screen as education and crime prevention dominate the news.

But can the insurance system deal with a major storm without the disruption that followed Andrew, which saw a dozen insurers become insolvent, skyrocketing prices, nonrenewals and coverage restrictions?

Florida has experienced many severe storms since 1900, including one in 1926 that would cost $60 billion or more today, according to researchers R.A. Pielke Jr. and C. W. Landsea. Why was the insurance system so poorly prepared for what should have been a clearly understood peril?

Simply put, the insurance industry was driving a car while looking out the rearview mirror. Seeing a road in the historical data, few saw the cliff through the windshield.

In the years before Andrew, most insurers relied on actuarial methods that were based on historical insured loss experience to estimate the potential losses from hurricanes. Several factors combined to render this data almost useless for projecting storm losses:

- Too little data was available, only about 30 years' worth, far too short a period to measure long-term hurricane patterns accurately.
- Storm activity was well below historical norms during the recent period where data existed.
- Populations exploded during this period, adding tremendous exposure unrecognized by analyses of historical data.
- Construction practices were often poor and very different from those used in the 1920s or 1940s, when storm activity was more normal.
- Insurance coverage was made increasingly generous, and insurance companies had little understanding of the potential cost of comprehensive coverage.

In short, when storms occurred in large numbers earlier in the century, there were few people and relatively little insurance of the type that exists today, and when large numbers of people moved into modern homes with generous insurance policies, there were few storms.

Judgment day came on Aug. 24, 1992.

Eye of the Storm

As the magnitude of Andrew losses became apparent, insurance executives realized that insurance prices were far below long-term cost and that capital reserves were insufficient to meet claim obligations in major hurricanes. The supply of capital available at pre-1992 prices was out of balance with the demand for coverage. Generally, markets react to shortages by increasing prices until supply meets demand, either by attracting new capital to the market or by reducing the demand for coverage. In the post-Andrew insurance market, this meant rate increases, nonrenewals of policies and restrictions on coverage.

Public officials responsible for regulating insurance were understandably reluctant to subject consumers to the brutal realities of an unfettered free-market solution, but they faced daunting problems in formulating alternatives. Efforts to suppress prices were sure to lead to a shortage of coverage, and it was legally difficult to force

Florida's Public Property Insurers

The **Florida Windstorm Underwriting Association** (FWUA) was created in 1971 to insure beachfront property. It issues wind-only policies. Significantly expanded after Andrew, it now has 500,000 policies and a 100-year loss of over $5.5 billion. It has approximately $50 million in cash reserves to cover storm losses. If its cash reserves and reinsurance are insufficient to pay claims, it can levy assessments on insurers (automatically passed through as surcharges to consumers) and issue bonds paid for by surcharges on all property insurance policyholders in Florida.

The **Residential Property Casualty Joint Underwriting Association** (FRPCJUA) was created in 1993 as an insurer of last resort to handle the hundreds of thousands of consumers left without coverage in the post-Andrew market crisis. It offers multi-peril property policies. Its policy count peaked at almost 1 million in 1997, but has subsequently dropped to 228,000 as the insurance market has stabilized. It has $250M of surplus to fund a 100-year loss of $2 billion. Like the FWUA, if its cash reserves and reinsurance are insufficient to pay claims, it can levy assessments on insurers (automatically passed through as surcharges to all insurance consumers) and issue bonds paid for by surcharges on all property insurance policyholders in Florida.

The **Florida Hurricane Catastrophe Fund** ("Cat Fund") was created in 1993 as a low-cost source of reinsurance to Florida's insurers. It collects about $440 million of premium and pays claims up to its cash reserves plus the amount that can be bonded from a 4% standby assessment on all property/casualty insurance policies in Florida, excluding Workers' Compensation. In 1998, it projected claims paying capacity of $11 billion.

insurers to provide solvency-threatening coverage they were unwilling to sell voluntarily.

Faced with several bad choices, the state took short-term steps to sharply limit price increases and prevent the predictable reaction through the enactment of a moratorium on nonrenewals. These bought time until more permanent steps could be taken to restore market equilibrium.

The fundamental problem that caused the post-Andrew market crisis was simple: Insurers experienced an abrupt increase in their cost of providing coverage, both due to revised estimates of long-term losses and sharply higher prices for capital and reinsurance. Demand for additional capital was enormous due to the new understanding of potential exposure and the losses suffered during Andrew. When regulators took steps to limit price increases, immense pressure built up to shed risks through nonrenewals and the market collapsed.

Top 10 Catastrophes

Year	Catastrophe	Insured Losses*	Adjusted Losses**
1992	Hurricane Andrew, tornado	$15,500,000,000	$18,007,840,342
1994	Northridge, Calif., earthquake, fire	12,500,000,000	13,748,313,090
1989	Hurricane Hugo, tornadoes	4,195,000,000	5,514,395,161
1998	Hurricane Georges, tornadoes	2,955,000,000	2,955,000,000
1995	Hurricane Opal, tornadoes, floods	2,100,000,000	2,246,062,992
1993	Wind, hail, tornadoes, freezing rain	1,750,000,000	1,974,048,443
1991	Oakland, Calif., fire	1,700,000,000	2,034,508,076
1996	Hurricane Fran, tornadoes, floods	1,600,000,000	1,662,205,226
1992	Hurricane Iniki, flooding	1,600,000,000	1,858,873,842
1998	Wind, hail, tornadoes, in Minn. and Iowa	1,345,000,000	1,345,000,000

* Unadjusted dollar amounts from ISO's Property Claims Services Unit
** Adjusted for inflation to 1998 Dollars

Source: Insurance Services Office Inc.

Closing the Gap

Many states subsidize rates in some market segments, such as coastal property, through assessment mechanisms that spread the cost to all consumers. Usually, there is adequate market capitalization and overall rate adequacy, so the system can absorb the subsidies without disruption.

In 1992, Florida's overall premium revenue was inadequate, and specific market segments, such as Southeast Florida, required large subsidies. Further, the gap between available capital and that required to cover probable maximum loss was large. Overcoming these problems required finding a way to create a large pool of new capital at a much lower cost than was possible through traditional mechanisms.

Florida chose to amortize losses over time through bonding in a way that would not require insurers to reflect future debt service as a liability on their balance sheets.

Unlike insurance companies, which for solvency reasons must build capital reserves sufficient to pay for possible losses before they occur, state-created entities can keep scant capital reserves before an event and issue post-event bonds to pay claims, secured by their ability to compel citizens to pay assessments. Since capital reserves cost money, either in the form of premiums to reinsurers or returns to stockholders, private insurance will generally cost more in the short run than government-provided coverage, but private insurers pay claims without the need for post-event assessments.

This type of bonding can save consumers money in several ways:

- **Risk transfer.** Transferring risk costs money. By accepting the risk that costs to consumers may turn out to be higher if storm losses are above average, current consumer cost can be lowered. However, most consumers are not aware that they may be subject to significant costs in future years in exchange for low premiums today.
- **Tax-exempt accumulation.** The Cat Fund was granted tax-exempt status by the federal government, allowing it to accumulate funds much faster than taxable private entities can.
- **Low cost of capital.** The state's cost of capital, due to its ability to issue tax-exempt debt for only the amount of money needed to pay known claims, is significantly below that required by the private sector to pre-fund the possible amount of claims.

For these reasons, the state can reduce the cost of insurance to consumers today by deferring part of the cost to tomorrow.

Price of Consumer Protection

The joint underwriting association for residential property, the Florida Windstorm Underwriting Association and the Cat Fund succeeded in protecting consumers from the shocks of a dysfunctional private-insurance market; however, their success in protecting consumers from market reality has come at a price.

First, the public policy decision to fund losses with assessments and bonding has the effect of transferring costs from high-risk policyholders to unwitting policyholders elsewhere, diluting incentives to mitigate losses in high-risk areas. For example, placing a surcharge on an automobile policy in Jacksonville to pay for hurricane

Florida's Post-Andrew Reforms

- Expanded the FWUA; created Cat Fund and FRPCJUA.
- Passed emergency legislation to fund the Guaranty Fund through assessments on all property insurance consumers, allowing for payment of thousands of Hurricane Andrew claims on insolvent insurers.
- Reformed residual market assessment process, changed from insurer liability to policyholder surcharge. Allowed the residual markets to issue bonds to cover deficits.
- Reformed residual market rating, mandating JUA rates be set at the top of the voluntary market and that FWUA rates be "reflective" of the voluntary market.
- Provided incentives to depopulate residual markets.
- Allowed coverage changes, higher deductibles.
- Strengthened building codes and provided mitigation incentives.
- Provided for arbitration of rate filing disputes.
- Established a commission to review computer models used in ratemaking.

losses in Miami will reduce the financial incentive for the Miami resident to mitigate, while doing little to motivate the Jacksonville resident to hurricane-proof his car.

Second, the reliance on bonding to fund losses threatens to leave Florida heavily in debt after the next storm.

Third, protecting consumers from the economic consequences of their decisions to live in catastrophe-prone areas is likely to fuel continued coastal development. Thus, low insurance prices today could lead to higher losses in the future.

The growth of the Cat Fund has created a window of opportunity to address the serious structural problems in the system without significant shocks to consumers.

Many citizens might say that the risk of having to borrow funds to pay storm claims is worth the benefits of continued development and growth, particularly if debt will protect them from another market crisis after the next storm.

Post-event Hangover

Is Florida still driving by looking in the rearview mirror? While the problem of paying claims from another Andrew with a minimum of pre-event pain has been solved, does anyone see the next cliff, which could be the post-event hangover of paying off more than $10 billion in bonds while at the same time dealing with a repetition of market chaos?

Post-event market chaos is likely because the linchpin of the system, the Cat Fund, lacks the ability to provide a stable layer of coverage. Its capacity ebbs and flows over time, leaving the insurers that rely on it subject to abrupt changes in their ability to fund hurricane losses and/or their cost of doing so.

The Cat Fund charges a premium based on long-term expected losses without regard to its claim-paying capacity. It pays losses based on the amount of accumulated surplus of premiums over loss payments, plus the amount which can be bonded on revenue from a standby assessment of 4% of all property/casualty premiums, except workers' compensation. Unlike private reinsurance, the Cat Fund's coverage is not subject to a specific limit.

Insurers can collect reimbursement for covered losses up to the fund's claims paying capacity in a given year. If aggregate covered losses exceed this capacity, claims are prorated. In 1998, the fund collected about $440 million and provided $11 billion of coverage, $2.5 billion from accumulated cash and $8.5 billion from bonding. This year coverage will grow to about $11.5 billion for the same $440 million of premium. Each storm-free year, the Cat Fund will grow and its cost per dollar of coverage will drop.

While it is difficult to compare specific private sector reinsurance rates to the Cat Fund, it is generally acknowledged that the Cat Fund rates are currently well below the market average. Each year, the fund's growth will increase this gap as its price per dollar of coverage drops.

Over time, Florida's insurers will become more dependent on the fund because Florida law compels insurers to replace private-sector reinsurance with the Cat Fund capacity as the fund grows. Florida Statute 627.062 (5) reads: "With respect to a rate filing involving coverage of the type for which the insurer is required to pay a reimbursement premium to the Florida Hurricane Catastrophe Fund, the insurer may ... not recoup reinsurance costs that duplicate coverage provided by the Florida Hurricane Catastrophe Fund." This language will effectively force insurers to drop private sector reinsurance coverage as the FHCF grows.

Someday, there is sure to be a large loss. When it occurs, the Cat Fund will disperse some or all of its capacity. Assuming the entire $11.5 billion were spent this year, the fund would still charge insurers $440 million in 2000, but would only provide $440 million of coverage. When the fund is depleted, where will the money come from to fill the vacuum? In order to renew existing policies, insurers will have to replace the capacity no longer provided by the Cat Fund at two or three times the price, while continuing to pay the full Cat Fund premium. To make matters worse, at the same moment consumers will be hit with a host of assessments from the windstorm pool, the residential joint underwriting association and the Cat Fund, creating additional pressure on regulators to suppress private sector rate increases to keep insurance "affordable."

Overnight, costs to the system will explode, just as they did in 1992. Insurers will find it difficult to raise billions of dollars of new capital and/or reinsurance capacity overnight, just as they did in 1992. Will future regulators react any differently than in 1992? Will they try to limit cost increases to consumers despite sharply higher costs to insurers? If so, supply and demand will fall out of balance, just as they did in 1992. The market will collapse again. This time, however, Florida will start the recovery process heavily in debt.

A Hypothetical Example

To illustrate the problem insurers will face after a storm, consider a hypothetical insurance company called Sturdy Property, which writes insurance throughout Florida. The figures used in this example are strictly illustrative and do not exactly match current Cat Fund or private-sector rates. Use of different figures would not alter the conclusions that can be drawn from the example.

Assume that the company has a probable maximum loss (PML) of $100 million, which it funds through a combination of its own capital, private reinsurance and the Cat Fund.

In 1995, the company filed rates based on a blend of $10 million of its own capital, $62.1 million of private reinsurance, and $27.9 million of coverage from the Cat Fund. In its rate filing, it showed costs of $1.5 million for retained losses, $2.5 million for the FHCF premium, and $6.2 million for private reinsurance. In this example, the cost of the FHCF per unit of coverage is approximately half that of private reinsurance.

By 1999, the company's Cat Fund coverage increases to $65.3 million as the fund grows without major losses, yet the fund's premium remains unchanged. Based on additional Cat Fund

capacity, the company reduces its private reinsurance to $24.7 million, lowering this cost to $2.5 million. The company makes a rate filing and lowers rates to consumers in line with its costs, from $10.2 million in 1995 to $6.5 million in 1999.

In September 1999, Hurricane Cindy causes $17 billion in residential losses. The Cat Fund pays its claims promptly, but is only able to offer coverage for the year 2000 from premium income.

In 2000, Sturdy Property will receive $2.5 million of Cat Fund coverage for its $2.5 million of premium. Hurricane Cindy depleted $5 million of its capital reserves, and it is only able to renew the $24.7 million of private reinsurance coverage it bought in 1999.

The company now has a problem. It has $32.2 million of capital and reinsurance to cover its $100 million PML. Management is faced with a terrible choice: It can cancel two-thirds of its policies or try to find an additional $67.8 million of reinsurance at exactly the same time every other company is plunging into the market. If it could even buy the coverage at the price it paid per million in 1999, its costs would increase to $12.8 million, requiring it to file for a hurricane premium rate increase of almost 100%. In fact, the required increase would likely be even higher due to post-event rate increases in the private reinsurance market.

This scenario will be repeated at hundreds of companies doing business in the state. Simultaneously, the deferred bill from the Cat Fund and residual markets will come due. Consumers will face the triple shock of nonrenewals, rate increases and assessments from the Cat Fund, windstorm pool, and joint underwriting association for residential property.

Cat Fund Flaws

The current structure of Florida's Cat Fund is flawed because its capacity is maximized at the wrong time: after several storm-free years, just when the private market is likely to have capacity to offer. It will be depleted at the time when it is needed most: in the year after the storm, when private insurers are reeling from losses. Thus, it will serve to exacerbate, rather than mitigate, natural market cycles, exposing

Figure 1

The Cat Fund Grows, Replacing Private Reinsurance

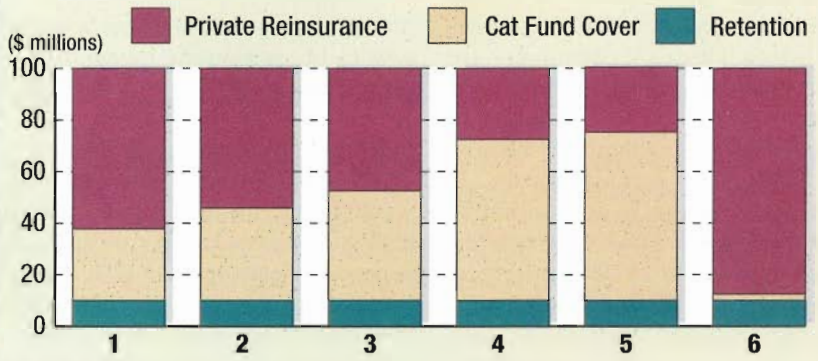


Figure 2

The Cat Fund Is Cheap, Until There Is a Loss

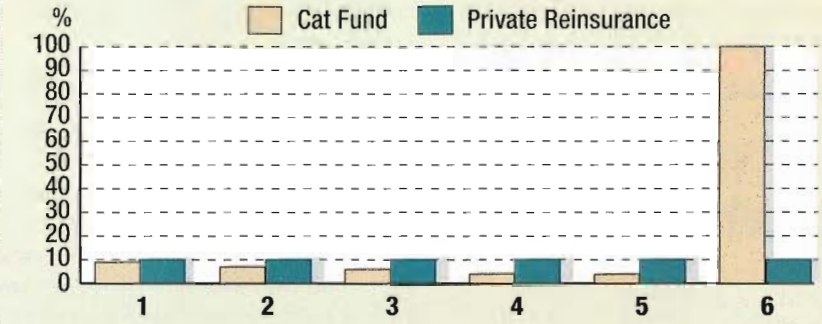
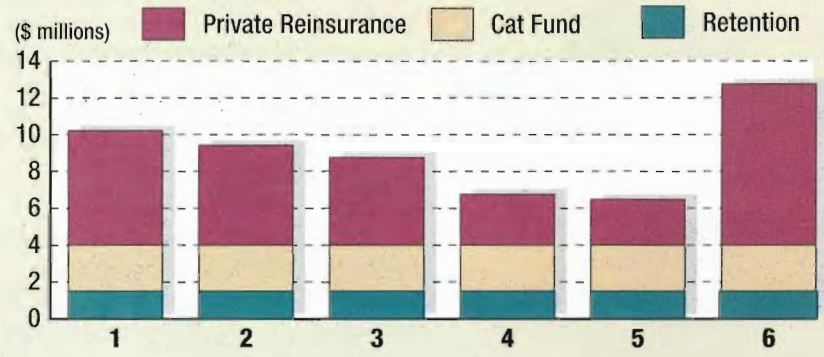


Figure 3

Insurer Costs Drop, Then Explode After a Storm



Sturdy Property is a hypothetical insurance company.

Figure 1 shows the proportion of Sturdy's $100 million probable maximum loss covered by surplus, the Cat Fund, and private reinsurance over time, assuming Sturdy reduces private reinsurance coverage as the Cat Fund grows.

Figure 2 shows the relative cost of Cat Fund and private reinsurance coverage over time. After an event, the cost for Cat Fund coverage jumps dramatically, as its premium is constant but amount of coverage drops.

Figure 3 shows the total cost Sturdy faces for its hurricane exposure (exclusive of expenses). The variable item is the expense for private reinsurance, which drops before the storm as private coverage is reduced, but explodes afterward as Cat Fund coverage must be replaced.

consumers to a rate and availability roller coaster.

Ideally, the Cat Fund would spring into action only at times when private-market capacity is depleted. If private-market capacity is available at affordable prices, Florida's consumers are better off transferring the risk of hurricanes to the world financial markets, so losses are paid for without the need to issue bonds and collect assessments.

This discussion is not meant to imply that the Cat Fund is detrimental to Florida consumers. It is a tremendous asset, offering tax-free accumulation of reserves and very low-cost capital. Properly structured, it could lower the cost of insurance and smooth market cycles.

The problem is that the Cat Fund's structure still reflects the crisis conditions which existed at the time of its creation, when finding a way to pay claims was the paramount problem. While claims-paying ability is still critically important, the easing of the post-Andrew crisis should allow a second goal to be introduced: long-term market stability.

In Search of Stability

Given the choice, most consumers would prefer stability in their economic lives. However, just as consumers are exposed to economic trouble from oil price shocks created by Middle East wars or to stock market turmoil due to the "Asian Flu," the unpredictable nature of catastrophic hurricane losses makes it difficult, if not impossible, to assure consumers that property insurance in catastrophe-prone areas will be simultaneously stable, available and affordable.

Florida's public-policy planners have succeeded in resuscitating the property insurance market after its near-death experience in 1992. Clearly, Florida is far better prepared to deal with a storm today than it was then. The mechanisms in place provide reasonable assurance that claims will be paid promptly after the next event, a huge accomplishment considering the state of the market after Andrew. However, now that Florida has figured out how to pay the claims, the next step is to find a way to deal with the financial hangover the morning after the next storm.

Despite the complexity of the issues involved, the fundamental questions are clear:

- Who pays? How much of the cost of living on the beach should be borne by those who actually live there, and how much should be spread throughout the state?
- When should they pay? Insurance has been kept "affordable" by deferring much of the cost to the future. How much should Florida rely on debt? Should the state pay now or pay later? Should debt be used routinely, or only as a last resort?
- How should the benefits of having no major storms since 1992 be used? Florida has been fortunate since 1992. Should growth in the Cat Fund be used to lower rates to consumers now or to reduce exposure to bonding in the future?
- What is more important, low short-term cost or long-term stability? Avoiding future instability will require some short-term sacrifice. Does the public care?

Changes Required

There are no easy answers to these simple questions. The key to limiting market disruption after an event involves minimizing abrupt changes in market capacity or its cost. The Cat Fund is a key to accomplishing this, but changes in its current structure will be required, such as:

- Limiting its commitment to the first event, which will force insurers to provide more first-event coverage from private resources than would otherwise be the case. This could stop downward pressure on current rates resulting from Cat Fund growth, but lead to fewer assessments and less market disruption in the future.
- Providing additional assessment authority if the fund is depleted, risking higher consumer assessments at some point in the future.
- Adjusting Cat Fund rates to reflect the amount of coverage provided, rather than long-term expected loss, which will reduce the price gap between private-sector reinsurance and the Cat Fund, but will result in higher Cat Fund premiums in periods when its capacity is high.
- Reducing Cat Fund coverage in periods when private-sector capacity is high and increasing coverage when private-sector capacity is low, using the Cat Fund to cushion swings in insurance markets.

The growth of the Cat Fund has created a window of opportunity to address the serious structural problems in the system without significant shocks to consumers. The committees responsible for insurance issues in the Florida Legislature are studying this issue. Unfortunately, while several public officials recognize the danger, the odds are against tackling the problem before the next crash. By most outward signs, the market is healthy and rates are falling. It will be difficult for public officials to support arresting the decline in rates or creating additional assessment authority for the Cat Fund in order to avoid a market crisis that may or may not occur on their watch.

It will probably take another Andrew to motivate people to deal with the problem, and by that point it will be too late. Indeed, Florida is living on borrowed time—and money. BR