A Study of Private Capital Investment Options and Capital Formation Impacting Florida's Residential Insurance Market

State Board of Administration of Florida

September 19, 2006

SBA FLORIDA

INVESTING FOR FLORIDA'S FUTURE

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Executive Summary

On August 30, 2006, the Executive Director of the State Board of Administration (SBA)[1] was asked by Governor Bush to conduct a study of viable sources of private capital and how to increase the flow of private capital into Florida's residential property insurance market.

Florida's residential property insurance market has a heavy reliance on reinsurance markets (i.e., both Florida Hurricane Catastrophe Fund (FHCF) and private sector reinsurance coverage). Pricing at the beginning of 2006 for private sector Florida hurricane risk reinsurance increased 50-70% from the prior year and increased another 50-100% on July 1.[2] Increases resulted from:

1. Reinsurers' absorbed about $40 billion in losses from the 2005 hurricane season. About $27 billion of private capital flowed into the reinsurance sector in 2005 and 2006 from private equity and hedge fund investors in response to capacity shortages and higher prices, but this was materially less than actual losses.
2. Major hurricane loss modeling firms introduced new methodologies to recognize an increased level of hurricane activity and severity of losses. Annualized loss projections in the Gulf Coast and Florida rose by 40% to 100% (i.e., probable maximum loss or PML).
3. Insurance company rating agencies A.M. Best and Standard & Poor's (S&P) are requiring reinsurers to avoid catastrophe risk and/or increase the level of capital coverage for given levels of catastrophe risk.
4. Reinsurers traditionally utilized "retrocessional markets" (i.e., reinsurance for reinsurers). However, capacity in that market has been scarce post-Katrina and related coverage has tripled in cost.

Because of these disruptions in the traditional reinsurance market, capital market solutions, such as Industry Loss Warranties, catastrophe bonds, and sidecars, are becoming increasingly important as a source of reinsurance capacity. This year will be the most active on record with $10 to $15 billion of new investments into these alternatives to traditional reinsurance. There has also been renewed interest in developing contracts to trade hurricane catastrophe risk on an exchange platform, although prior attempts to trade such contracts on established exchanges have failed.

To complete the assignment, the Executive Director assembled a team that consisted of five SBA senior investment professionals, the Senior FHFC Officer and FHCF Financial Advisor. The SBA reviewed background research and conducted several days of face-to-face interviews with private equity investors and other capital market participants experienced and active in the reinsurance and Florida insurance markets. Appendix I lists the participants.

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[1] The SBA, a constitutional entity of Florida state government, brings to the task a long history of utilizing prudent and diversified investment strategies in domestic equities, foreign and global equities, fixed income, private equity and real estate. In addition to managing the fourth largest pool of public pension fund assets in the country, the SBA is also responsible for management of the Florida Hurricane Catastrophe Fund (the "FHCF").

[2] Credit Suisse (Equity Research Report: Reinsurance, August 21, 2006). Reinsurance brokers report similar pricing increases (see analysis below).

Key issues that were either consensus observations or were strongly held by interviewees include:[3]

1. Florida has done many things right. Unlike other catastrophe prone jurisdictions, Florida citizens have almost universal coverage against catastrophic risk.
2. Investors in insurance companies, reinsurance companies, and related capital market products will only invest if they can expect to earn a reasonable level of profit to reward them for the risk they are taking. Florida's regulation of primary residential property insurance rates, past moratoriums on non-renewals and elevated catastrophe risk negatively impact the direct and indirect flow of private capital supply to Florida.
3. The State should consider a market-based primary rate setting structure. A suggested approach would be to focus on regulating primary underwriters' overall risk-adjusted rates of return on equity, recognizing the risk of catastrophe in Florida. Should the State move to a more deregulated primary insurance market, it should give consideration to targeted insurance rebates/discounts for seniors or low income citizens (i.e., a means-tested circuit breaker program).
4. The insurance market has fundamentally re-assessed the risk/loss equation for Florida catastrophic risk and it is unlikely that reinsurance rates will return to pre-2004 levels. Another season of large losses in the next several years may even seriously threaten the willingness of reinsurers' to underwrite Florida hurricane risk at any price.
5. Capital markets are unlikely to rapidly resolve the pricing/capacity crunch facing Florida insurance markets in the short-term. However, capital flows into alternative insurance-related products are likely to remain strong for industry loss warranties, catastrophe bonds and sidecars. Florida insurance rates could benefit from wider use of these products, but the outlook for exchange-traded catastrophe risk contracts is less clear.
6. The State should consider the following changes in the FHCF:
    a. Moving the FHCF premiums over time to approximate market-based pricing.
    b. Resetting the FHCF's exposure to cover truly catastrophic events (i.e., in excess of 1 in 40 year events).
    c. Utilizing reinsurance or new capital market products within the FHCF (or on top of its existing coverage) to diversify/export risks outside of Florida and lessen its reliance on post-event financing (e.g., bonding).
7. The Insurance Capital Build-Up Incentive Program created under SB 1980 could be improved by relaxing the requirement that insurers maintain a 2:1 ratio of net premiums to surplus. This requirement is more aggressive than market standards and may increase the risk of primary company failure in the event of catastrophes.
8. The State should consider incentives to alternative business forms to facilitate Florida insurance companies building capital. The start-up and growth of reciprocal insurers, mutual insurers, and self-insurance/captive mechanisms should be encouraged.
9. Florida should not create disincentives to insurance company capital retention and balance sheet growth. There is a risk that limited apportionment companies will remain small and undercapitalized, exposing the residual market to further growth.

[3] The SBA has not independently verified the accuracy and consistency of these views, nor does it necessarily agree with them.

The State faces a number of important policy questions that go far beyond the SBA's assignment and core competency. Many of these policy issues are embedded in the comments from the private investors summarized above. In the SBA's judgment, the capital markets offer no silver bullet that will resolve the State's insurance issues in the near-term. However, the following ideas merit further study.

1. Relaxing the requirement that insurers maintain a 2:1 ratio of net premiums to surplus to participate in the Insurance Capital Build-Up Incentive Program.
2. Identifying ways to encourage formation of reciprocal insurers, mutual insurers, and self-insurance/captive mechanisms in order to build additional private pools of capital/capacity.
3. The private investor's suggestions regarding the FHCF bear further study, recognizing certain basic principles:
    a. The FHCF should only be expanded when private market alternatives are not available or have failed.
    b. Any expansion of coverage to the FHCF should be fair and available to all participating insurers. Providing the expanded coverage to selected groups of insurers will dilute benefits for the remaining participants.
    c. If the FHCF is expanded to respond to a market crisis and the expanded coverage is made available to all participating insurers, the additional coverage should be priced at "near" market pricing levels.
    d. If coverage is available in the private reinsurance market, incentives should not be provided to motivate insurers to purchase expanded FHCF coverage.
    e. Any expansion of the FHCF should be a temporary solution and should only be for 1 to 3 years. At the end of this time, the expanded coverage should not be available unless re-enacted by the Legislature for another temporary time period.
    f. When the State has the authority to assess its citizens to pay for debt to fund insurance losses, the State is substituting capital of its own citizens for insurance company capital. The FHCF's reliance on debt financing should receive careful consideration.
4. Using industry loss warranties and catastrophe bonds as part of any expansion of the FHCF to transfer the additional risk that comes with that expansion outside the State of Florida.
5. Positioning the State as an investor or sponsor of a sidecar as a means to provide additional risk capacity to the market.
6. Dialoguing with some of the leading exchanges trading other risk transfer products (i.e. the Chicago Mercantile Exchange) in an attempt to see if a Florida hurricane risk contract can be structured that will eventually overcome the problems that plagued these efforts in the past.

Purpose

On August 30, 2006, the Executive Director of the State Board of Administration (SBA) was asked by Governor Bush to conduct a study of viable sources of private capital and how to increase the flow of private capital into Florida's residential property insurance market.

The SBA, a constitutional entity of Florida state government, manages 27 investment funds with over $150 billion in assets under management as of June 30, 2006. The SBA manages the fourth largest pool of public pension fund assets in the country and ninth largest in the world. The SBA has a long history of utilizing prudent and diversified investment strategies in domestic equities, foreign and global equities, fixed income, private equity and real estate.

The SBA's Board of Trustees are:

- Jeb Bush, Governor, as Chairman
- Tom Gallagher, Chief Financial Officer, as Treasurer
- Charlie Crist, Attorney General, as Secretary

Mission Statement
The State Board of Administration is committed to providing superior investment and trust services while adhering to the highest ethical, fiduciary and professional standards.

The SBA is also responsible for management of the Florida Hurricane Catastrophe Fund (the "FHCF"). The FHCF was created in 1993 in response to Florida's property insurance crisis resulting from Hurricane Andrew. The FHCF provides a stable and ongoing source of reimbursement to insurers for a portion of their catastrophic hurricane losses in order to provide additional insurance capacity in the state and stabilize insurance rates.

The balance of this white paper summarizes the SBA's research, including findings obtained through several days of face-to-face interviews with investors and other market participants experienced and active in the reinsurance and Florida property insurance markets. The investors interviewed have a long history of providing capital and advice to the Florida residential insurance industry as reinsurers, financial advisors, underwriters, brokers, private equity general partners and hedge fund managers. Appendix I lists the participants.

Background and Overview

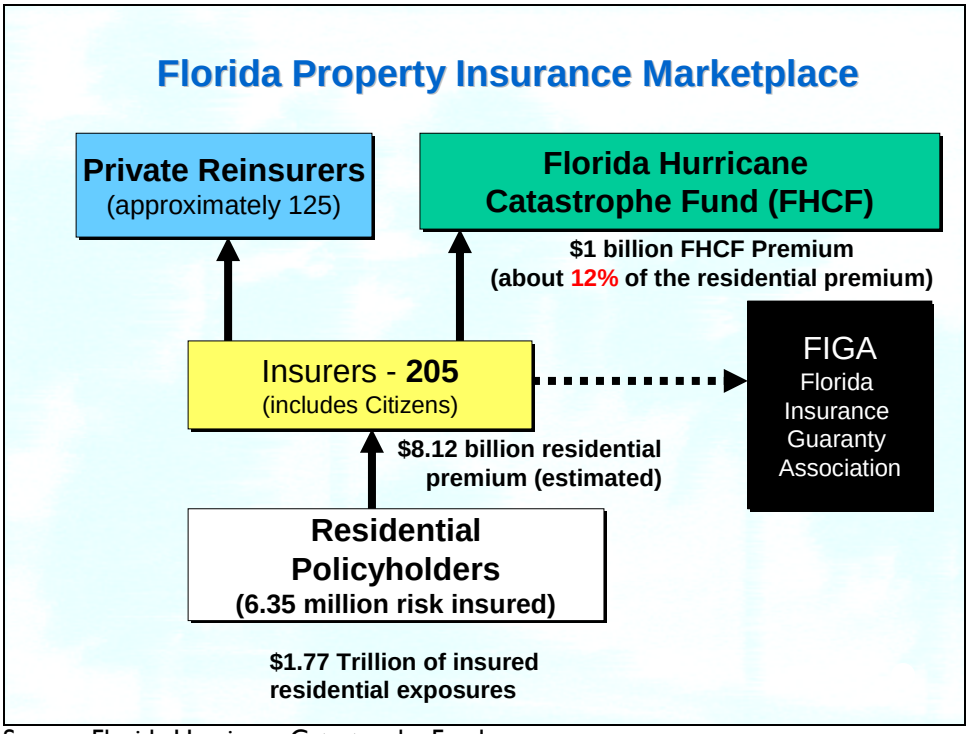
For Florida, the 2004 and 2005 hurricane seasons were both unprecedented in scope and surprising in nature. They were unprecedented in the sense that the total amount of insured damages in the State – over $35 billion -- exceeded that of any previous comparable time period. They were surprising in nature because of the number and type of storms producing the damage – eight storms occurring in a 15-month period (i.e., back-to-back seasons). For the United States as a whole, these storms represented seven of the 10 most costly (in terms of insured damages) hurricanes ever recorded, and six of the 10 most costly catastrophic disasters of any type.

Despite the damages caused by these storms, Florida emerged without significant economic disruption. This is largely due to several factors.

1. **Efficient Emergency Response Infrastructure.** The State's comprehensive and tested emergency response mechanisms enabled it to respond quickly after each storm and thereby avoid sustained disruption to the daily lives and well-being of those in the affected areas;
2. **Effective State-sponsored Insurance Mechanisms.** The three State-sponsored property insurance mechanisms – the FHCF, Citizens Property Insurance Corporation ("Citizens"), and the Florida Insurance Guaranty Association ("FIGA") -- all performed essentially as designed and provided an important financial backstop. In total, these entities will pay out over $13 billion for claims from 2004 and 2005 damages.
3. **Strong State Economic Resources.** The State was able to use its strong budgetary/economic position to commit additional resources to the recovery efforts. One example is the $715 million appropriated by the Legislature in 2006 to help reduce Citizens' financial deficit and thereby reduce assessments.
4. **Building Codes.** The State enacted updated building codes after Hurricane Andrew in 1992. The evidence is clear that these codes helped reduce the damages caused by the 2004-2005 storms, although further enhancements in this area are required.

The FHCF has played a critical role in providing a permanent and very inexpensive layer of reinsurance for the private market. Capital markets have been instrumental in helping the FHCF fulfill its mission by providing contingent capital to finance any shortfall and provide liquidity for future events. The FHCF issued post-event bonds of $1.35 billion to pay the estimated shortfall caused by 2005 losses and issued pre-event bonds of $2.8 billion to provide liquidity to pay future covered events.

Chart 1



Source: Florida Hurricane Catastrophe Fund

Table 1: FHCF 2004 and 2005 Losses (Billions)

	CY 2004	CY2005
Losses	$3.950	$4.500
Paid	$3.636	$3.169
Reported	$3.900	$4.235
Ultimate FHCF Loss	$3.950	$4.500
Total Industry Residential Loss	$16.040	$10.001

Source: Florida Hurricane Catastrophe Fund

The role of the FHCF is not to supplant the private market, but to augment private market mechanisms in providing insurance. Ensuring that the private insurance markets continue functioning is important to the State's long-term growth. Accordingly, the State has demonstrated a commitment to formulating and implementing appropriate solutions for the insurance problems in Florida. For example, the State responded in the 2006 legislative session (i.e., Senate Bill 1980) and demonstrated a willingness to step in where private markets are disrupted or under stress by authorizing:

1. $715 million for Citizens.
2. A rapid cash build-up for FHCF and additional reinsurance coverage for smaller companies.
3. An Insurance Capital Build-up Incentive program to attract additional private capital into the insurance market.
4. $250 million for hurricane loss mitigation to encourage retro-fitting homes.
5. Regulatory rate relief for insurers.
6. By Executive Order, the Property and Casualty Insurance Reform Committee to study and make recommendations regarding ways to enhance the insurance market in Florida.

Despite the overall success of the State's financial and physical hurricane preparedness and response efforts in 2004, 2005 and 2006, these storms have left the State's insurance market in a weakened state. The skyrocketing cost and decreased availability of private reinsurance and new loss probability estimates (explored in more detail in the next section) have put tremendous pressure on rates in the primary insurance sector. These factors have led to an escalating affordability/availability problem in Florida that has become an important public policy issue due to its potential impact on the State's long-term growth prospects.

Looking long-term, Florida may have structural vulnerability to persistent affordability/availability issues in its property insurance markets. Given its geographic location and concentration of population on its coasts, Florida will always face an elevated risk of natural catastrophe. Rapid population growth and escalating property values along Florida's coast will require an increasing amount of insurance capital in the State. Additionally, roughly one-half of the Florida primary insurance market is populated by thinly capitalized or residual market carriers (e.g., Citizens and limited apportionment companies). Notably, Citizens policy count grew sharply from 700,000 at the beginning of 2006 to 1,200,000 at September 1, 2006. The growth was due to two primary factors:

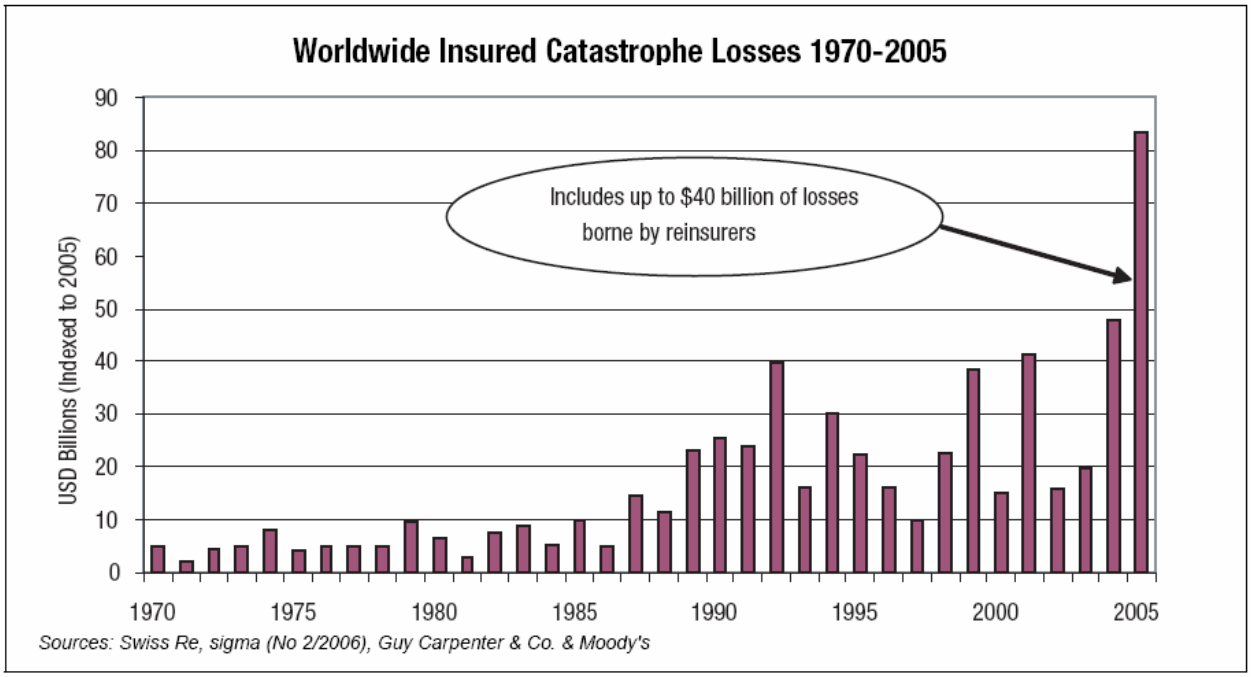
1. Hurricane losses and inability to achieve their targeted rates caused some primary insurers to drop/nonrenew policies.
2. Losses forced the largest Florida-only insurer (i.e., Poe Companies) into insolvency, forcing almost 300,000 policies into Citizens.

Reinsurance Markets

The Florida property insurance market has an atypically heavy reliance on reinsurance markets (i.e., a combination of FHCF and private reinsurance coverage). In Florida, approximately 50% of primary residential insurance premiums are typically ceded to reinsurers. Nationally, excluding Florida, it is estimated that closer to one third of losses are typically ceded to reinsurers (Guy Carpenter, "The World Catastrophe Reinsurance Market", September 2006).

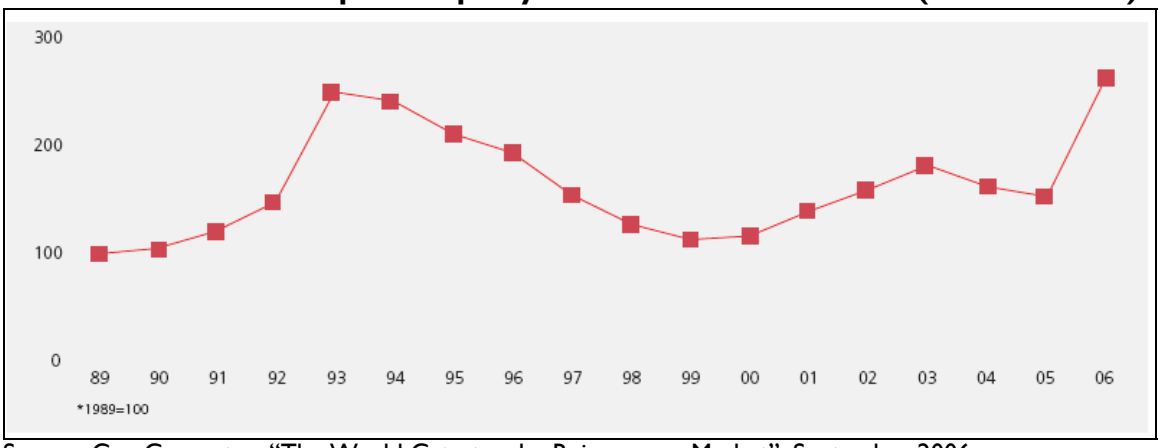
The 2004 and 2005 storms created material dislocations in reinsurance markets that were evident in reinsurance capacity shortages and price increases. Chart 1 illustrates historical worldwide catastrophe losses indexed to 2005 dollars. Chart 2 further illustrates the sharp rise in US catastrophe property reinsurance rates since the 2005 storms. However, Florida-based insurers faced even tighter markets (or "hard markets" in insurance parlance).

Chart 2



Source: Global Reinsurance Industry Outlook – 2006, Moody's Investors Service, September 2006.

Chart 3: U.S. Catastrophe Property Reinsurance Price Index (Rate On Line)*



Source: Guy Carpenter, "The World Catastrophe Reinsurance Market", September 2006

During the first half of 2006, reinsurance broker Benfield reports: "Capacity and price were key issues as the market sought, and in some instances struggled, to provide cover for the US, and in particular Florida, mid-year renewals." Benfield summarized the first half market as reported by Bermuda reinsurers:

1. PartnerRe estimated that demand for US Wind cover exceeded supply by some 15-20%.
2. Montpelier Re reported average Florida rates on line (ROL) up 100% with layers attaching in excess of the state catastrophe fund up 200%.
3. IPC reported higher attachment points, lower aggregates and enhanced pricing. IPC also said that many Florida-specific and some national programmes in the USA could not be completed. [Benfield Bermuda Quarterly 1H 2006 – Making Hay, September 2006].

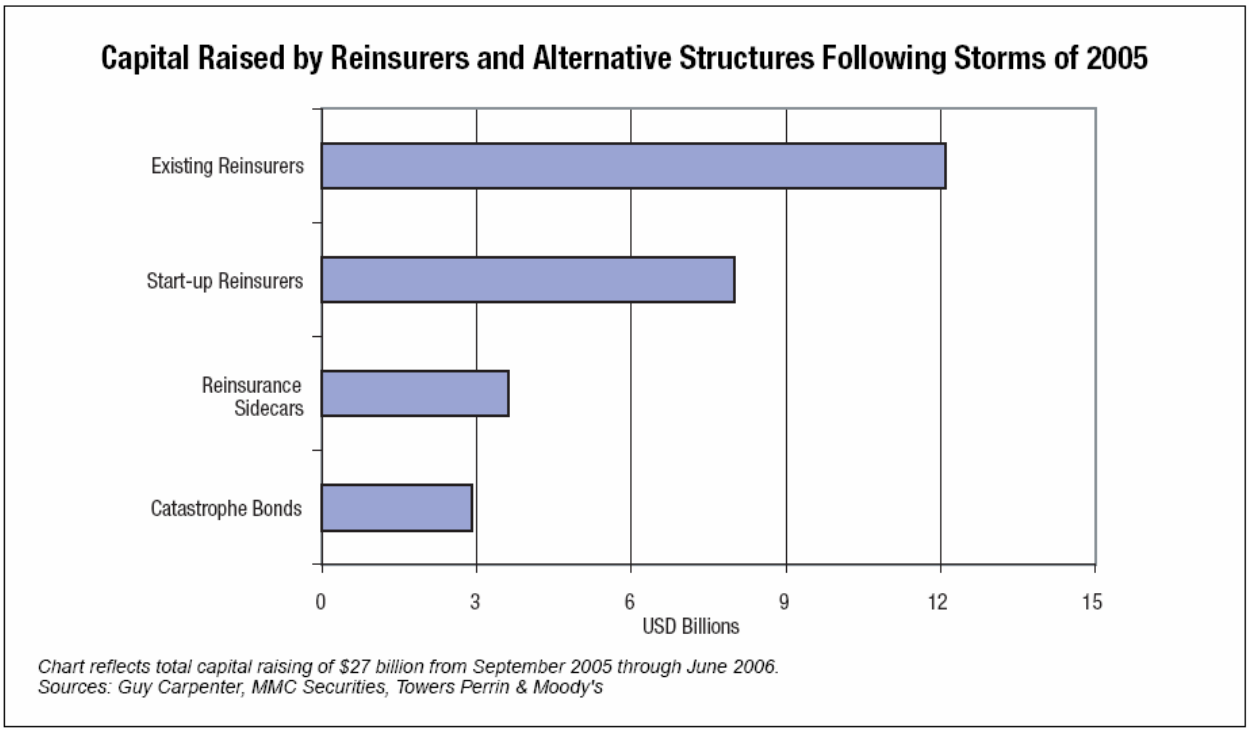
Chart 4 illustrates the disproportionate effect of the hard reinsurance market on Florida. Florida-only companies experienced the sharpest increases in catastrophe reinsurance premiums (about 150%). The final frame of Chart 4 (i.e., exhaustion and attachment) shows Florida-only companies also were unable to find capacity or chose not to buy at elevated prices; hence they are exposed to more risk in 2006.

Chart 4: Comparison of U.S. National, Regional and Florida-only Companies' Reinsurance Renewed for 2006

Source: Guy Carpenter, "The World Catastrophe Reinsurance Market", September 2006

Further, there is no clear consensus that reinsurance rates will materially decline from their recent levels, particularly for Florida-specific wind coverage. Substantial amounts of private capital flowed into the reinsurance sector in 2005 and 2006 from private equity and hedge fund investors in response to capacity shortages and higher prices. Moody's Investor's Service estimates that $27 billion of capital flowed into the reinsurance market to existing or start-up companies between Katrina and the end of June 2006 (Chart 5). However, this inflow is materially less than reinsurers' actual losses from the 2005 hurricane season.

Chart 5



Source: Global Reinsurance Industry Outlook – 2006, Moody's Investors Service, September 2006.

Moreover, Guy Carpenter[4] and other market analysts and investors, ascribe capacity limitations and pricing pressure for Florida-specific reinsurance to several additional key changes in the market environment:

1. A widely held expectation that the U.S. is entering a multi-year cycle of elevated hurricane activity in the Atlantic Ocean, Caribbean Sea, and Gulf of Mexico. Based on long-term warming and cooling cycles in the Atlantic, the National Oceanic and Atmospheric Administration, National Weather Service Climate Prediction Center is forecasting elevated Atlantic hurricane activity for the next 10 to 20 years (Chart 6).[5]

[4] Large portions of the following list are based on analysis in Guy Carpenter, "The World Catastrophe Reinsurance Market" September 2006.

[5] The Climate Prediction Center reports: "Although the record 2005 activity resulted from a combination of factors, the underlying active Atlantic phase of the multi-decadal signal continued to be very pronounced through the season. Because the mean conditions in the MDR exhibit such strong multi-decadal variability, it is reasonable to expect generally high levels of Atlantic hurricane activity for the next 10 to 20 years or perhaps longer (Goldenberg et al. 2001)." [The 2005 North Atlantic Hurricane Season, A Climate Perspective, NOAA].

Additionally, some scientists and market participants believe the risk of systemic global warming should be factored into hurricane predictions.

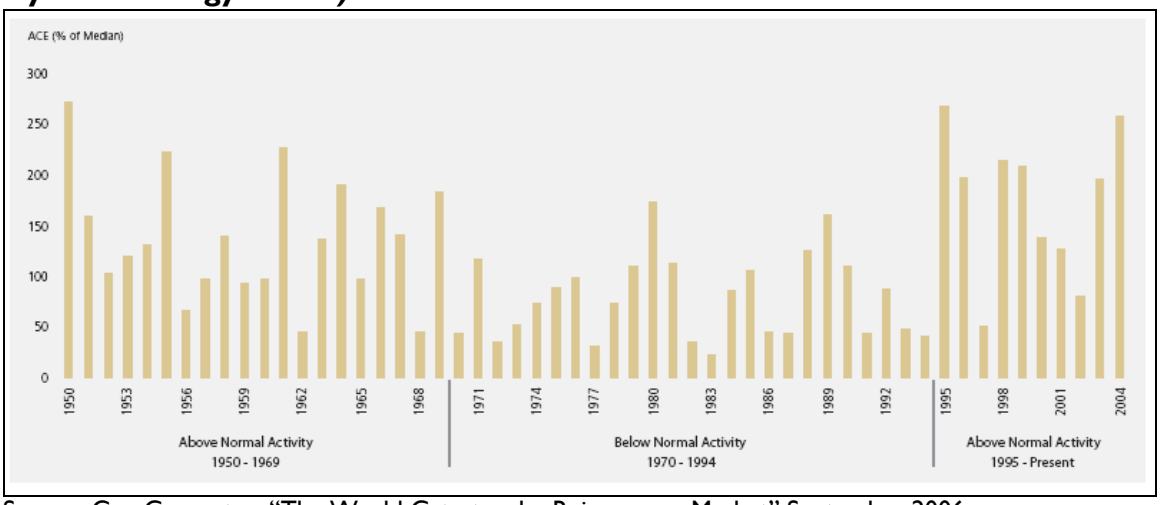
2. Two of the three major hurricane loss modeling firms (i.e., RMS and EQECAT) introduced new methodologies to recognize an increased level of hurricane activity and severity of losses. The models have been adjusted to better reflect post-event demand surges boosting replacement costs, mold remediation, and additional living expense claims. These and other recent model changes increased the annualized loss projections in the Gulf Coast and Florida by 40% to 100% (i.e., probable maximum loss or PML).[6]
3. Insurance company rating agencies A.M. Best and Standard & Poor's (S&P) are pressuring insurers and reinsurers to keep less cat risk on balance sheets and/or increase the level of capital coverage for given levels of cat risk. A.M. Best introduced a new stress test that examines insurers and reinsurers ability to withstand a second annual catastrophe event of 1 in 100 year wind event. Similarly, S&P has begun to apply a new capital charge against primary insurers that reflects the expected annual aggregate property losses for all perils for a 1 in 250 year event. S&P's change will have full impact in 2007 and analysts believe this will increase the level of capital needed by primary insurers by 15% to 30%.
4. Barriers to entry in reinsurance markets have historically been relatively low, except that market participants report that rating agencies are now expecting start-up reinsurers to have two to three times the capital coverage as needed by existing companies.
5. Insurers and reinsurers are responding to the rating agency changes by increasingly looking to mitigate risk at extreme attachment points (i.e., losses) consistent with 1 in 100 and 1 in 250 year events by avoiding coverage or buying reinsurance. By way of comparison, the FHCF coverage extends to a roughly 1 in 40 year event.
6. Reinsurers traditionally utilized so-called "retrocessional markets" (i.e., reinsurance for reinsurers) to layoff some of their catastrophe risk. However, after the 2004 and 2005 hurricane seasons, capacity in the retrocessional markets has been particularly scarce. Rating agencies have taken a negative view of the use of some retrocessional firms because of the worry that such firms will not meet their credit obligations in the event of a catastrophe. Pricing for retrocessional coverage (as indicated by industry loss warranties) has increased by roughly a factor of three since the pre-Katrina period.
7. There is market sentiment that growth in population and values across the United States, particularly in catastrophe-prone coastal areas, may not be accurately captured in models and projected losses. Additionally, some market analysts note that the proclivity for claims-filing (i.e., policyholder aggression) has increased in the last several decades. Thus, they are judgmentally factoring in greater losses than the revised models predict.

Even for those who do not subscribe to the "paradigm shift" argument outlined above, most expect that reinsurance offered to Florida will remain capacity constrained and price challenged into 2007.[7]

[6] FHCF premiums may potentially be affected by these model changes in future years.

[7] Credit Suisse (Equity Research Report: Reinsurance, August 21, 2006) identifies arguments for and against hard reinsurance rates in 2006-07, but says the following regarding Florida: "We understand that catastrophe pricing in peak zones (e.g. Florida) on 1/1/05 was already pretty good due to the 2004 hurricanes. Pricing on 1/1/06 increased approximately 50-70% from the prior year. In addition, pricing on July 1 increased 50-100% over that of

Chart 6: Decadal North Atlantic Hurricane Activity (ACE is NOAA's Accumulated Cyclone Energy index.)



Source: Guy Carpenter, "The World Catastrophe Reinsurance Market" September 2006

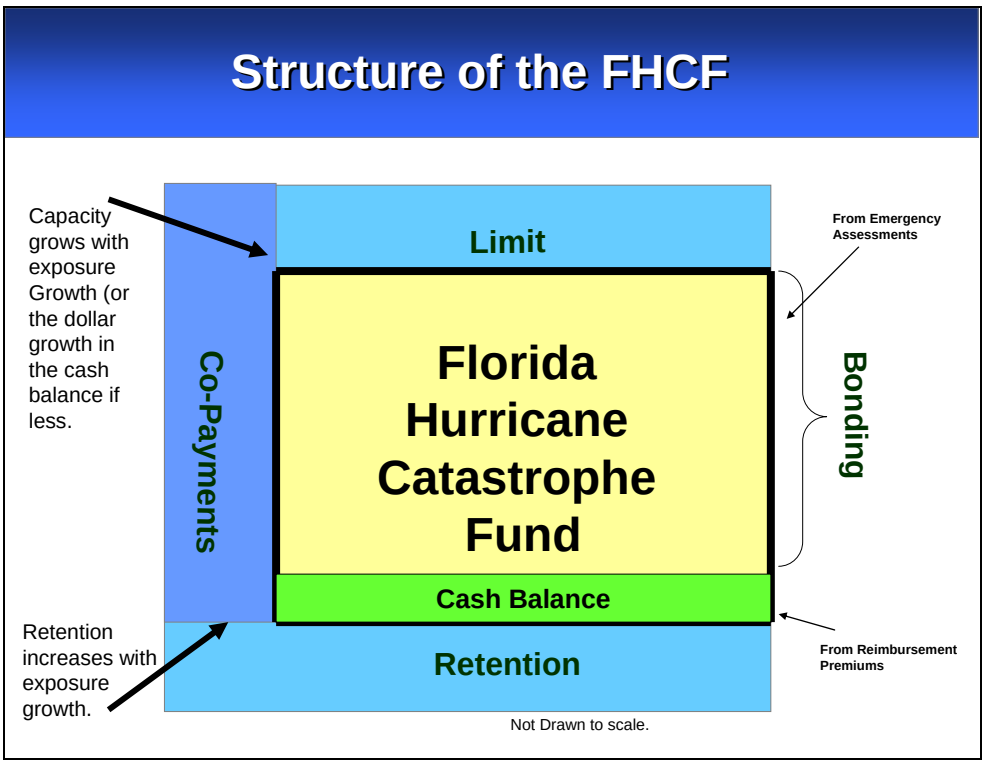
Florida Hurricane Catastrophe Fund

A discussion of reinsurance markets available to Florida primary insurance companies would be incomplete without discussing the role and status of the Florida Hurricane Catastrophe Fund (FHCF). The FHCF provides a permanent layer of reinsurance for primary companies writing residential property insurance in Florida. At a high level, it has the following characteristics:

1. Tax-exempt State trust fund created during special session post-Andrew in 1993.
2. Provides $15 billion of low-cost reinsurance coverage for the residential market. FHCF liability is the lesser of this number or its actual bonding capacity post-event.
3. Intended to stabilize and maintain the residential insurance markets.
4. Increasingly important source of reinsurance. Historically, the FHCF has provided more residential reinsurance coverage in Florida than all private reinsurers combined.
5. Primary ongoing revenue source is reimbursement premiums received from participating insurers (about 205 companies – all but the smallest insurers must participate in the FHCF). Estimated 2006 premiums are $1 billion.
6. Contingent revenue source is emergency assessments levied on all property and casualty insurance premiums in the State (excluding worker's compensation, accident and health, medical malpractice). This base is currently over $33 billion, and the FHCF can levy cumulative annual total assessments of up to 10%. The first-ever FHCF assessment was ordered by State of Florida Office of Insurance Regulation (OIR) in June 2006 – 1% for five years, to pay off bonds issued to fund a projected cash shortfall due to 2005 storms. The assessments start January 1, 2007 as policies renew.

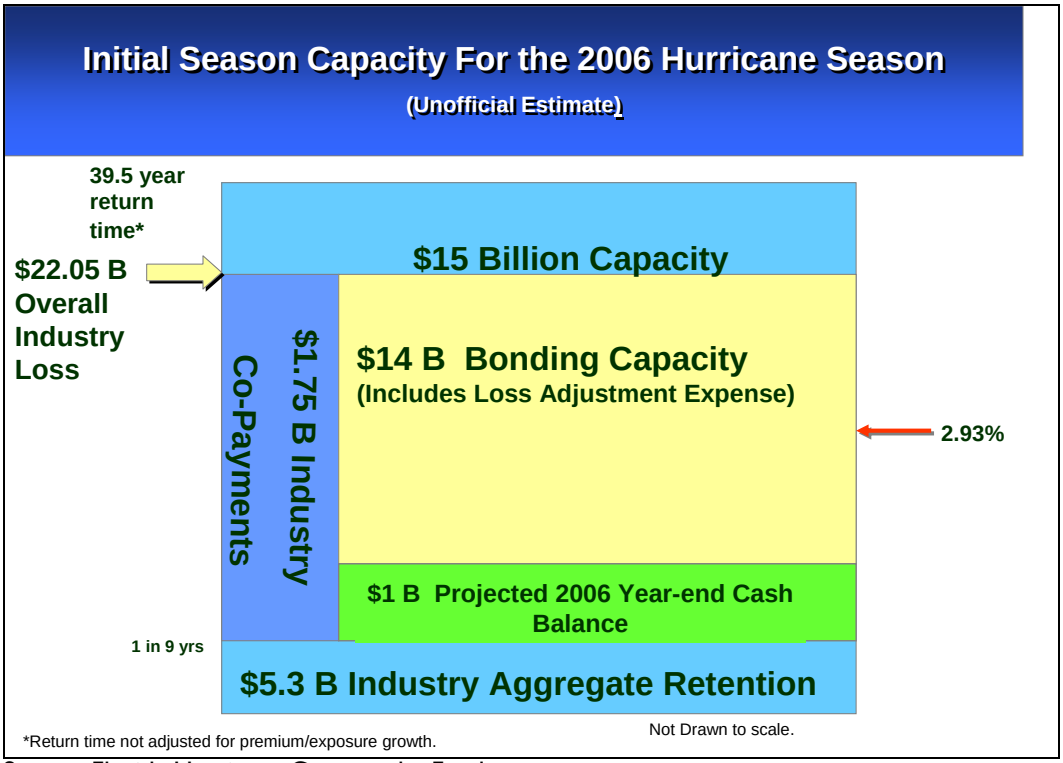
1/1/06. Accordingly, even if pricing falls 40% from July 1, 2007 levels, it would remain at levels as of 1/1/06, which are pretty healthy."

Chart 7



Source: Florida Hurricane Catastrophe Fund

Chart 8



Source: Florida Hurricane Catastrophe Fund

As a result of the State's losses during the 2004 and 2005 hurricane seasons (approximately $35 billion in insured losses statewide), the FHCF estimates it will pay a total of over $8.45 billion to over 100 separate insurance companies to reimburse them for their covered losses. Approximately $6.8 billion has already been paid. These payments have all been made in a timely manner – three to seven business days after the reimbursement request is received. Still, the losses have put a strain on the liquid resources of the FHCF. The FHCF executed two financings in response – one to meet a projected (not yet realized) cash shortfall caused by the 2005 storm losses, and one to inject liquidity into the FHCF in preparation for the 2006 (and beyond) hurricane season(s). Both financings were well-received by the markets and the rating agencies; the FHCF enjoys long-term bond ratings in the AA category from all three major rating agencies. See Appendix 2 for a description of the financings.

While the pre-event debt of both the FHCF and Citizens is significant in size, it does not immediately add to the debt burden of those entities. That is because the proceeds have not been spent, and will not be spent until there is a hurricane that causes sufficient losses to trigger draws on those proceeds. Until that time, the cash proceeds almost exactly offset the par amount of the debt, so the net debt position of the entities is unaffected by the issuance of the bonds. They are simply liquidity programs – given the structures available, the pre-event bonding was the most cost-effective way to achieve this liquidity. Nonetheless, use of the proceeds after an event would lead to assessments (see discussion of contingent capital below).

Role of the Capital Markets

Given that traditional sources of insurance capital have become both scarce and expensive, it has been suggested that alternative sources of private insurance capital for Florida should be reviewed. Capital markets both provide funding to insurance companies and more directly assume catastrophe risks from insurance companies through various structures and products. While these latter nontraditional markets and products have grown rapidly in recent years, capital supporting catastrophe protection mechanisms is believed to split roughly 85% to traditional reinsurance and 15% to other mechanisms.

Additionally, there are important differences between traditional reinsurance and pure capital market solutions. The subject matter of a reinsurance contract is the insurance liability the reinsured (i.e., primary policy writer) has assumed under insurance issued to its own policyholders. A reinsurance contract is an indemnity contract. Capital market solutions more generally provide payoffs or risk mitigation based on aggregate single event losses as calculated by a recognized index loss provider (e.g., PCS). Therefore, there is "basis risk" which is the mismatch between the insuring company's actual losses and the index to which the Cat bond or Industry Loss Warranty transaction is linked (see discussion of 2nd trigger for ILWs below).

Importantly, insurers get "credit" on their balance sheet for indemnity-based reinsurance in the form of a reduction in the amount of risk-based capital they have to set aside; i.e., the reinsurer will pay for losses covered by reinsurance. Industry regulators do not generally give credit for reinsurance that is not indemnity-based, such as Cat bonds.

Table 2: Catastrophe Protection Market Overview

Catastrophe Risk	Protection Mechanisms	Sources of Capital
Homeowners Insurers **Commercial Insurers** **State Entities**	Traditional Reinsurance	o U.S., Bermuda and European reinsurers
	Industry Loss Warranty (ILW)	o U.S., Bermuda and European reinsurers o Hedge Funds
	Catastrophe Bond	o Hedge Funds o Mutual Funds
	Sidecar	o Hedge Funds o Private Equity o Banks o Pension Funds
	Contingent Capital	o Mutual Funds o Life Insurers o Pension Funds

Source: Goldman Sachs and SBA

Table 3: Catastrophe Protection Market Sectors, Advantages and Disadvantages

Market Sector	Benefits	Disadvantages
Traditional Reinsurance	o No basis risk o Ease of execution o Large market o Numerous competitors	o Annual renewal o Slow settlement o Capacity constrained o Protection not collateralized/Credit risk
Industry Loss Warranties	o Contractual clarity o Ease of execution o Numerous competitors o Flexibility	o Basis risk o Limited but growing market o Small transaction size
Catastrophe Bonds	o Contractual clarity for index / parametric bonds o Multi-year protection o Collateralized protection	o Basis risk o Limited but growing market o Complex execution
Sidecars	o No basis risk o Multi-year protection o Collateralized protection	o Requires relatively high returns on underlying business o Limited but growing market o Equity investor base limited o Complex execution
Contingent Capital	o Lower cost o Ease of execution o Broad investor base	o No risk transfer – any claims are repaid o Potential rating agency impacts on State credit o Can grow too big to execute
Exchange-traded Futures and Options	o Potential liquidity o Potential deep and broad investor base	o Multiple attempts by established or de novo exchanges have failed

Source: Goldman Sachs and SBA

Industry Loss Warranties (ILWs)

ILWs are index-based reinsurance contracts that pay off when a specified trigger or triggers are met. ILWs are functionally equivalent to traditional excess-of-loss reinsurance for companies seeking to transfer risk, but they may have certain advantages. Usually there are two triggers – one (the indemnity trigger) says a minimum threshold of firm losses must occur before any payout is received under the contract; the second (the index trigger) says that a certain level of industry losses must also occur before any payout under the contract can take place. The second trigger is the focus of the contracts, and the one from which they derive their name. The first trigger is generally included so that the contracts qualify as reinsurance.

ILWs first came into existence in the airline industry in the mid-1980s during a time of reinsurance shortage. They have in recent years been adapted to the property and casualty insurance industry as one more reaction to the growing realization that large-scale catastrophe risk must be spread over a base that is larger than the available capital in the traditional reinsurance sector. ILWs are attractive to nontraditional market participants (hedge funds, etc.) because they are an indexed product with relatively low transaction costs that can provide noncorrelated risk to a diversified investment portfolio. They are attractive to insurers and reinsurers because they are a relatively inexpensive way to transfer catastrophic risk, though basis risk is retained, since a company's losses may not reflect industry losses.

Examples of ILWs may include terms that require payment if the following types of events occur:

1. A hurricane with industry-wide insured loss in Florida in excess of $15 billion but less than $25 billion.
2. A winter freeze with industry-wide insured loss in North America in excess of $20 billion.
3. An earthquake with industry-wide insured property loss in excess of $35 billion anywhere in the world.
4. Second wind loss with industry-wide insured loss in excess of $10 billion anywhere in the US and territories.

Various sources estimate the amount of coverage provided by existing ILWs at between $5 billion and $7 billion. There is little doubt that the market is growing rapidly, with issuance in the last 12 months over $4 billion. As the market grows, additional secondary market trading has begun in the product, although ILWs are not considered as a liquid instrument. This may not be a critical drawback, since most ILWs are short-term in nature, thereby reducing the value of liquidity. Some observers have noted that this instrument may have a very high potential for growth akin to the explosion in credit default swaps over the past decade.

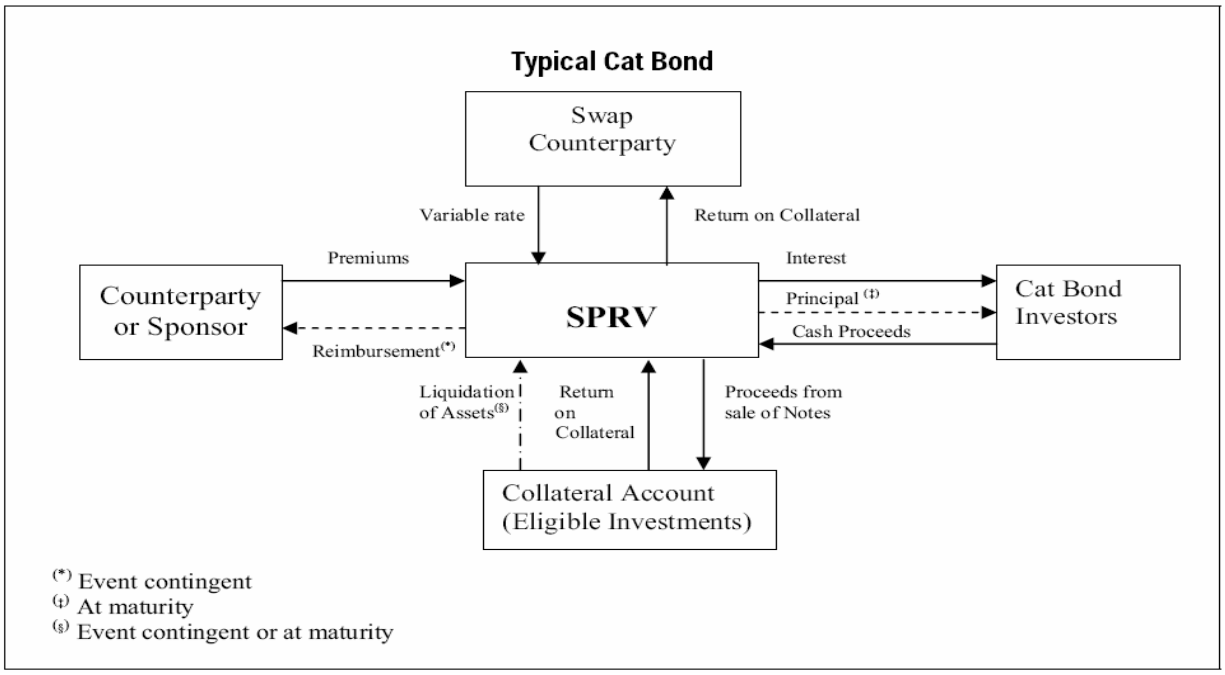
Catastrophe Bonds (Cat Bonds)

Cat Bonds have been in the market for about 10 years. They are issued (usually by reinsurers or insurers) in the form of debt with relatively high coupons. However, if catastrophe losses of the specified type occur above a predetermined amount, the issuer is relieved of its obligation to repay principal and/or interest. Cat Bonds are essentially a form of excess-of-loss reinsurance that provides more permanence than a typical reinsurance policy: e.g., three to five years versus one year for a typical reinsurance policy. The total amount of Cat bonds outstanding is about $10 billion. However, year-to-date 2006 issuance of almost $3 billion is already the largest year ever and market observers believe that full year issuance may exceed $5 billion.

Cat bonds are the most well-established of the capital markets catastrophe risk transfer mechanisms, and some market observers believe they are poised for rapid growth in the near future. At this time, however, Cat bond issue size has rarely exceeded $200 million and there is very limited liquidity in the secondary market.

A typical Cat bond structure is shown below. The undeniable complexity of the instrument (SPRV=Special Purpose Reinsurance Vehicle) has been a drawback to its growth; however, investors have become comfortable with the general features and investment thesis of Cat bonds, and structuring improvements have contributed to both enhanced transparency and greater sophistication (especially in the calculation of the index triggers) of the instrument.

Chart 9

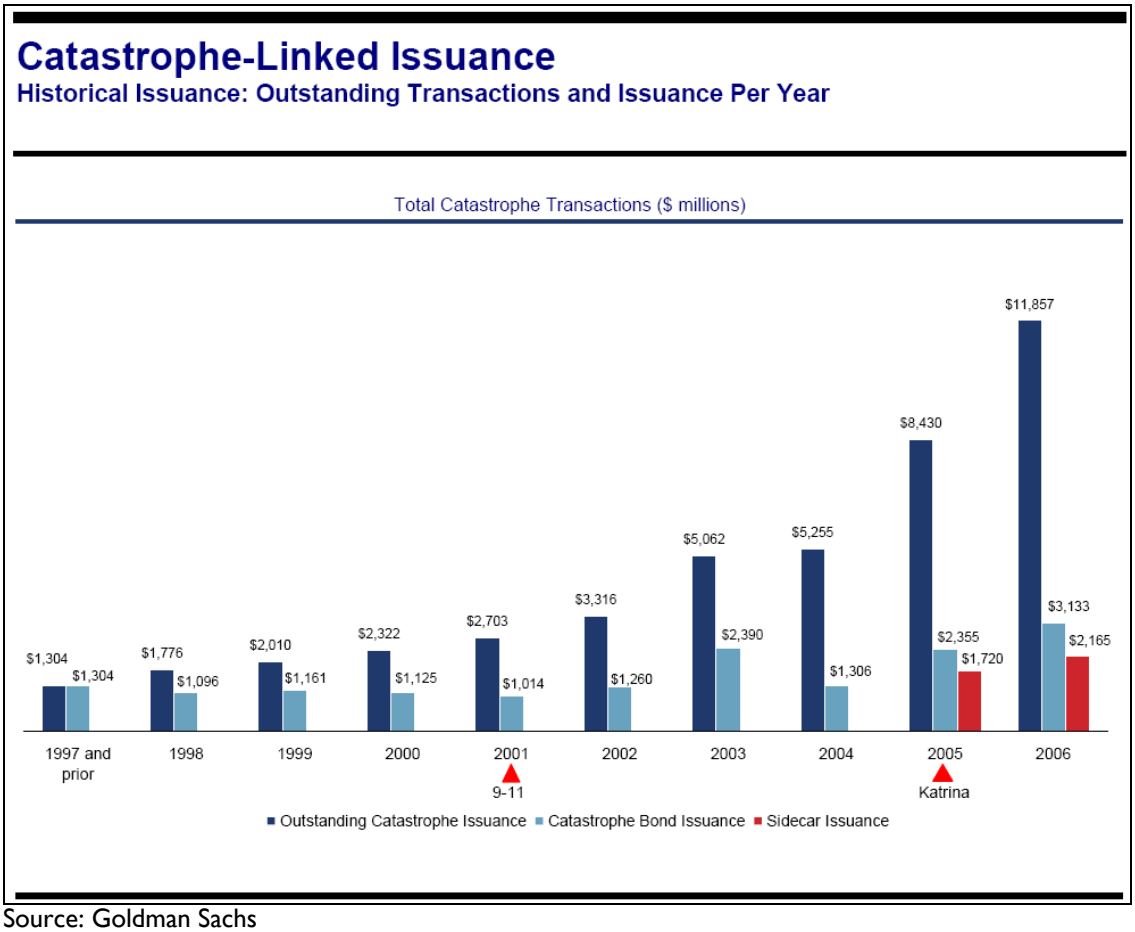


Source: Moody's Approach to Rating CAT Bonds, Moody's Investors Service, September 2006.

Sidecars

Sidecars are a relatively new phenomenon in the property and casualty insurance arena, appearing first in 2005. They can be thought of as "an insurance company within an insurance company." In other words, a sidecar is a reinsurance company that reinsures only one other company: the sponsoring insurer. It generally provides this reinsurance on a fully collateralized basis. Unlike Cat bonds and ILWs, which functionally provide excess-of-loss coverage, sidecars provide quota-share like coverage (i.e., they share in the premiums and losses of the ceding company proportionally). Participants in sidecars include the sponsoring insurer and outside investors, both of whom contribute capital to the endeavor under specified terms and for a relatively short period (usually two years or less). Sidecars are popular with sponsoring insurers because they provide a means to transfer risk and provide significant amounts of additional capacity. For investors (primarily hedge funds and private equity), sidecars provide high expected returns (higher than Cat bonds), a pure play on a specified catastrophe risk (free from any concerns about legacy balance sheet defects), and easy exit strategies for capital. However, sidecars typically require a significantly larger investment than Cat bonds – as much as $200 million, compared to $10 million for Cat bonds. Like Cat bonds, sidecars are complex transactions that can be costly both in terms of time and money to organize.

Chart 10



Source: Goldman Sachs

Contingent Capital

Contingent capital refers to "post-event" sources of capital that insurance companies can access after a catastrophic event. Private-sector insurance companies have access to a number of methods to raise contingent capital[8]:

1. Contingent Surplus Note (CNS): Similar to the Cat bond mechanism, an issuing insurance company sells notes and invests the proceeds in the Treasury securities. When a catastrophe occurs, the insurance can substitute its own corporate bonds for the Treasury securities. Investors receive the interest plus the premium for selling the issuer the option to substitute its own debt.
2. Issuance of equity: If an insurance company suffers large enough losses, it will be unable to operate. A simple post-loss solution is to issue new equity at a discounted price (relative to market prices) in order to raise capital to absorb the losses. Post-loss equity financing provides a method for releasing non-liquid assets such as franchise value.
3. Cat Equity Put Option (CE puts): This is another method of raising post-loss equity. It involves purchasing a put option on the insurance company's own stock at a predefined price. It gives the insurer the option to sell shares to the investor at a given price after a defined loss. An innovation in the CE puts is the exercise window determining that catastrophe losses must lie between a lower and upper bound. As these securities are related to individual insurance losses, the basis risk is small.

However, the more economically relevant use of contingent capital for Florida is the ability of State-sponsored entities to make non-voluntary assessments on other companies or non-policyholder individuals after storms. Beginning with the establishment of the Florida Windstorm Underwriting Association in 1972, the FHCF and the Florida Residential Property & Casualty Joint Underwriting Association in 1993, and finally Citizens in 2002, the State has used quasi-public companies that rely on their ability to assess non-policyholders in Florida as a primary means to pay hurricane claims. These companies have had frequent recourse to such assessments. The FWUA, FRPCJUA, and Citizens have levied a total of 11 different assessments over the years, while the FHCF levied its first-ever assessment in 2006.

Only the FHCF has leveraged this assessment to secure post-event debt financing. This was done with the $1.35 billion Series 2006A Post-Event Financing, which was issued to enable FHCF to make payments to participating insurers for losses resulting from 2005 hurricanes. In this case, third party investors provided debt capital to the FHCF to pay insurance claims in exchange for repayment of principal plus interest from the assessments described above.

Contingent capital can be a very powerful and inexpensive source of hurricane claims funding. Years can go by where no "capital call" is made if hurricane activity is light (e.g., the FHCF went more than 12 years after its creation before issuing its first post-event bonds). Since the companies or people subject to these assessments are not being paid (at least directly) for this contingent commitment of their capital, the provision of insurance or reinsurance by these

[8] Impact of Uncertainty in Catastrophe Losses on Insurance Derivatives, Carol Hayek, Member, ASCE, and Roger Ghanem, Member, ASCE. 15th ASCE Engineering Mechanics Conference, June 2002.

State-sponsored entities can be done much less expensively than by the private sector. If a capital call is needed, the base of companies and people on which these companies can draw is so large that the burden on any one company or individual may be relatively small. However, the drawbacks to the use of contingent capital are:

1. It distorts market forces by providing a subsidy to insurers and/or policyholders that may encourage risky underwriting or building practices. It has been estimated that the FHCF currently subsidizes the insurance industry (and ultimately policyholders) in Florida by about $3 billion per year.
2. It may put the people of the State at risk for cumulatively large payments (the combined potential assessments of Citizens and the FHCF in a 1 in 100 year event exceed $25 billion).
3. It provides no risk transfer mechanism away from the State – all debt issued must be repaid by assessments on Florida companies or taxpayers.

Contingent capital in the form of FHCF or Citizens currently provides a significant amount of "coverage" for the overall probable maximum loss (PML) in the State. Citizens (depending on how it is measured) accounts for 20-30% of the primary insurance market, while the FHCF accounts for approximately 50% of the reinsurance market.

Exchange-Traded Futures and Options

With catastrophe damage reaching record levels in recent years, insurance companies are facing increasing pressure to diversify their risk portfolio or transfer the risk. ILWs, Cat bonds, and sidecars are manifestations of this trend. Another mechanism that has been tried several times is the use of contracts to trade hurricane catastrophe risk on an exchange platform (using standardized futures or options contracts). Exchange-traded catastrophe futures or options give the holder a right to receive payment if an index of catastrophe-related losses exceeds a specified amount. Catastrophe options are similar to the excess-of-loss reinsurance contracts that were proposed for sale through the Natural Disaster Protection and Insurance Act of 1997. Appendix 3 includes details on past and current attempts to establish viable exchanges.

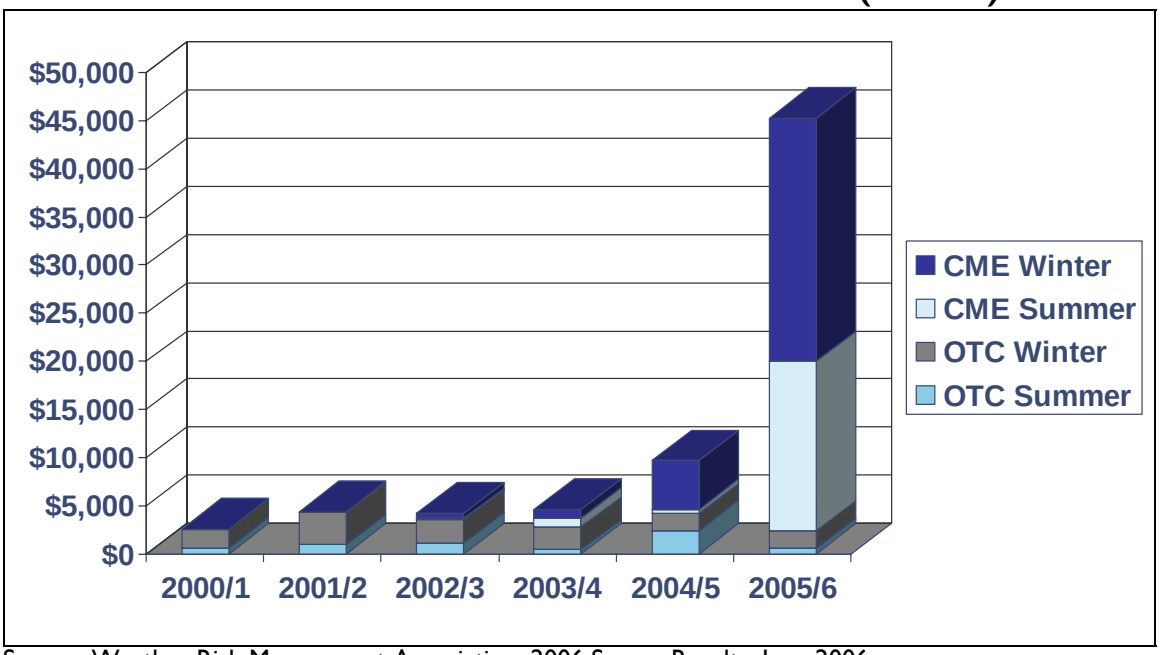
Previous attempts to add hurricane-related futures or options at established exchanges have failed due to insufficient interest and volume. Notably, these attempts proved unsuccessful despite wide recognition of the conceptual appeal and backing by leading industry players and exchanges, including the Chicago Board of Trade and Bermuda Commodities Exchange.

1. The Chicago Board of Trade traded hurricane loss options for eight years (1992 to 2000). After making changes to address investor concerns, the Board of Trade withdrew the contracts in response to low volume.
2. The Bermuda Cat Exchange traded hurricane futures based on the Guy Carpenter Index for two years (1997 to 1999). Trading was shut down due to low volume.

Recently, private sector parties have attempted to establish Internet-based exchanges. Since their roll-out, trading in these new contracts remains very light. Still, advocates point to growth in weather derivatives trading as hope that hurricane derivatives may gain market acceptance.

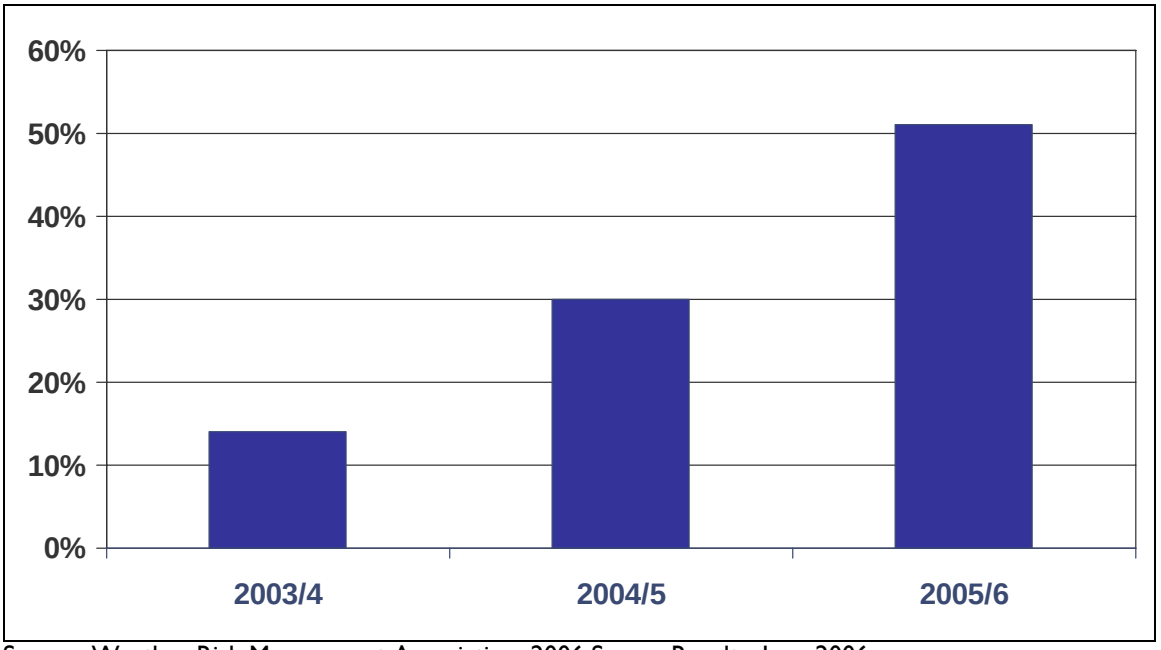
After several years of slow trading, the Weather Risk Management Association reported increases in weather derivatives trading to $45.2 billion in 2005/6.

Chart 11: Total Notional Value of weather risk contracts (millions)



Source: Weather Risk Management Association, 2006 Survey Results, June 2006

Chart 12: CME Seasonal Contracts as a Share of Total CME Contracts



Source: Weather Risk Management Association, 2006 Survey Results, June 2006

Proponents also indicate that several other flaws with earlier versions of exchange-traded contracts could be addressed:[9]

1. Previous attempts used cat modeling or actual claims data to ultimately value each catastrophe contract. Loss development time can be lengthy which requires an extended duration of the investment (collateral) supporting the Cat contract. With more general acceptance of catastrophe modeling (AIR, RMS, EQECAT, others), modeled losses can form the basis of the contract trigger, similar to some Cat bonds.
2. Advances in modeling may also help mitigate the basis risk inherent in using standardized contracts (versus indemnity contracts). Theoretically, it may be possible to model zip code level losses. Zip code level loss contracts were the purported advancement in the Bermuda Catastrophe Exchange, but the system proved too complex for index triggers.

[9] Source: Brian S. Murphy, Royal Palm Ins. Co.

Investor and Market Participant Observations

The SBA spent several days in face-to-face interviews with investors experienced and active in the reinsurance and Florida property insurance markets. The investors interviewed have a long history of providing capital and advice to the Florida residential insurance industry as reinsurers, financial advisors, bond underwriters, brokers, private equity general partners and hedge fund managers. Appendix 1 lists the participants. A number of their observations have been interwoven into the narrative above. However, this section summarizes key issues that were either consensus observations or were strongly held. **The SBA has not independently verified the accuracy and consistency of the following views, nor does it necessarily agree with them.**

General Views

Florida has done many things right. Unlike other catastrophe prone jurisdictions (e.g., California), Florida citizens have almost universal coverage against catastrophic risk. Florida is relying on contingent capital to support the FHCF which has an advantage of smoothing catastrophe costs over time once a low probability event occurs. Further, the aggregate cost of the recent FHCF bonding has probably benefited from the State's strong credit rating. The State has been able to handle its catastrophe risk without needing a Federal government bailout. The system in Florida works and the economy is strong. Following the massive hurricane-related losses in 2004 and 2005, the economy in Florida continues to grow and the real estate market remains strong. Some hardship is inevitable, but that is the nature of having eight land falling hurricanes in 15 months.

Florida's Insurance Regulatory Environment

Private capital supply is extremely sensitive to expected returns and risk (i.e., market and non-market risks) versus alternative uses of that capital. Expectations of reasonable profits are the only way to attract and retain private capital over the long-term. Investors in insurance companies, reinsurance companies, and related capital market products will only invest if they can earn an appropriate level of profit to reward them for the risk they are taking. Importantly, the probability of a catastrophe and the associated economic losses are intrinsically subject to elevated uncertainty and demand a high "risk premium." Florida's regulation of primary residential property and casualty (P&C) rates and past moratoriums on non-renewals are market distortions that negatively impact the direct and indirect flow of private capital supply to Florida.

Primary residential P&C rates have been held materially below market rates by the regulatory approval process. Some observers believed the degree of under-pricing, considering risk, may be as much as 67%. Artificially low primary rates limit the ability of primary companies to purchase reinsurance and build reserves. All else equal, as primary companies are forced to bear higher levels of risk or are not allowed to appropriately price risk they will constrain their

supply of primary P&C coverage. Therefore, artificially low rates are an important factor in driving the rapid growth in property insurance coverage by the residual market. Citizens is now the largest insurer in the state.

Restrictions on the withdrawal of capital increase the risk that invested capital will earn an insufficient rate of return. Therefore, investors will be less likely to supply capital unless they have a reasonable opportunity to earn higher expected returns (i.e., a risk premium for the lock-up or lack of liquidity must be expected). Florida's past moratorium on non-renewals and threats of reinstatement of the moratorium or rate freezes discourage capital investments in existing or start-up Florida primary insurers.

Insurer rate filings in Florida need to provide for speedier implementation of new rates. The natural process of renewing an insurer's book of business takes a year to accomplish since policies have to run off prior to being renewed at a new rate. Delays of three to six months or longer can discourage investment and new capacity. Regulations may need to be changed to allow quicker implementation of rates. Signals need to be sent quickly to the financial markets that investment in Florida can be profitable.

The way rates are set in Florida needs to be changed to eliminate cross subsidization: under the current system, people inland can subsidize people who live on the coast and in South Florida. Conversely, do not allow territory rate capping to achieve overall state rate adequacy. This approach leads to inadequate rates within territories with the natural result that such policies are not renewed and find their way to the residual market.

The State should consider transitioning to a market-based rate setting structure. One approach suggested would principally focus on regulating primary underwriters' overall risk-adjusted rates of return on equity, particularly recognizing the higher risk of catastrophe in Florida. Should the State decide to move to a more deregulated primary insurance market, it should also give consideration to targeted insurance rebates/discounts for seniors and others reliant on fixed or low income (i.e., a means-tested circuit breaker program).

In a less tightly regulated environment, if rates become excessive, and there are limited barriers to entry and exit in Florida, competition will eliminate any excess profits and the "fair" price (i.e., rate) will prevail.

Potential for New Capital Market Products to Create Capacity

The very large increases in reinsurance rates since 2005 for Florida hurricane risk resulted from real economic issues, including scarcity of capital after reinsurers paid 2004 and 2005 losses, rating agencies' more stringent requirements and changes to hurricane loss modeling methodologies (see reinsurance section). While reinsurance rates may have modestly overshot long-term fundamentals, the insurance market has fundamentally re-assessed the risk/loss equation for Florida catastrophic risks and it is unlikely that reinsurance rates will return to pre-2004 levels. Further, more re-assessment may lie ahead due to persistent growth along the Florida coasts and increasing propensity of policyholders to file claims for relatively small

amounts. Another season of large losses in the next several years may seriously threaten the willingness of reinsurers' to underwrite Florida hurricane risk at any price.

Because traditional reinsurance accounts for 85% of catastrophe risk protection, the capital markets are unlikely to rapidly resolve the pricing/capacity crunch facing Florida insurance markets in the short-term. Nonetheless, investors responded quickly to the scarcity of capital in 2005 and helped to keep reinsurance rates from rising even more. It is also likely that if capacity remains in short supply, insurance-related capital market products will become more widely utilized. However, new capital market products typically take time to catch on, in part due to the time needed for investors to learn how the new products work, for product designs to be fine-tuned and as fiduciaries wait for the products to weather a market cycle.

It is widely recognized that increasing adoption of insurance-related capital market products have great potential to transfer catastrophe risk to "non traditional" investors (who see catastrophe risk as a portfolio diversifier) and free up balance sheet capacity for reinsurers and insurance companies to write more policies. The products most likely to be viable include (in order of viability): industry loss warranties, catastrophe bonds, sidecars and catastrophe risk exchange-traded contracts.

To date, catastrophe risk exchange-traded contracts have been attempted several times and have not proved viable (see discussion above and Appendix 3). While the concept has theoretical appeal, it is difficult to predict when implementation might prove successful given the practical problems that caused earlier attempts to fail. Further, it was observed that existing exchanges have large incentives to devise new workable contracts (see discussion above of weather derivative trading at the Chicago Mercantile Exchange) and existing infrastructure, education programs and client relationships to support launches of new contracts. The concept of a start-up exchange specific to Florida was not viewed as the most effective method to promote trading of hurricane catastrophe contracts.

None of the new capital market products in isolation is likely to have a significant short-term impact on the insurance situation in Florida, but they could all be part of a long-term plan to put the State on stronger footing. It was suggested that the State evaluate utilizing such products in conjunction with the administration of the FHCF (see below). Also, it was suggested that State insurance regulators should revaluate giving credit for reinsurance that is not indemnity-based, such as Cat bonds; although it was recognized that this may be a national issue (i.e., National Association of Insurance Commissioners).

Florida Hurricane Catastrophe Fund (FHCF)

The FHCF provides coverage for Florida primary insurers at below market rates and is increasingly providing coverage at non-catastrophic risk levels. While the FHCF's low reinsurance rates help offset primary rate increases in the short run, they may inhibit the long-term provision of private reinsurance capital to Florida, marginally encourage population density in coastal areas and under-price catastrophic risk exposure. Concentrating catastrophe risk within Florida's borders is inefficient because pooling of catastrophe risks is most efficient if

conducted globally across numerous catastrophe risks. The FHCF's reliance on post-loss funding also has several disadvantages. Debt financing creates intergenerational transfer issues. Severe back-to-back hurricane seasons could again deplete FHCF reserves and produce funding needs that strain the capacity of debt markets and prevent the FHCF from raising sufficient monies to meet its obligations.

Chart 13 portrays one interviewee's perspective on the potential changing role of the FHCF given the events in the reinsurance markets since 2005. As indicated in the exhibit, Fermat Capital believes that the FHCF accounts for an increasingly smaller share of the reinsurance utilized by Florida primary residential insurance companies. This trend results from three primary factors:

1. The impact of changes implemented by rating agencies and hurricane modelers is causing primary insurers to seek reinsurance for more extreme events: e.g., 1 in 100 year events. The FHCF's coverage approximates a 1 in 40 year event.
2. Large insurers (e.g., USAA) are increasingly accessing the capital markets through catastrophe bonds to obtain reinsurance (see capital market discussion).
3. Florida's rapid growth in population and property values may be outdistancing the statutory growth in the FHCF's upper attachment point. This trend may have been exacerbated by Legislative decisions in past years to reset the FHCF's aggregate retention for participating companies to $4.5 billion. Lowering the FHCF's aggregate retention or not allowing it to grow with exposure growth increases the probability of triggering the fund and moves the layer of coverage down.

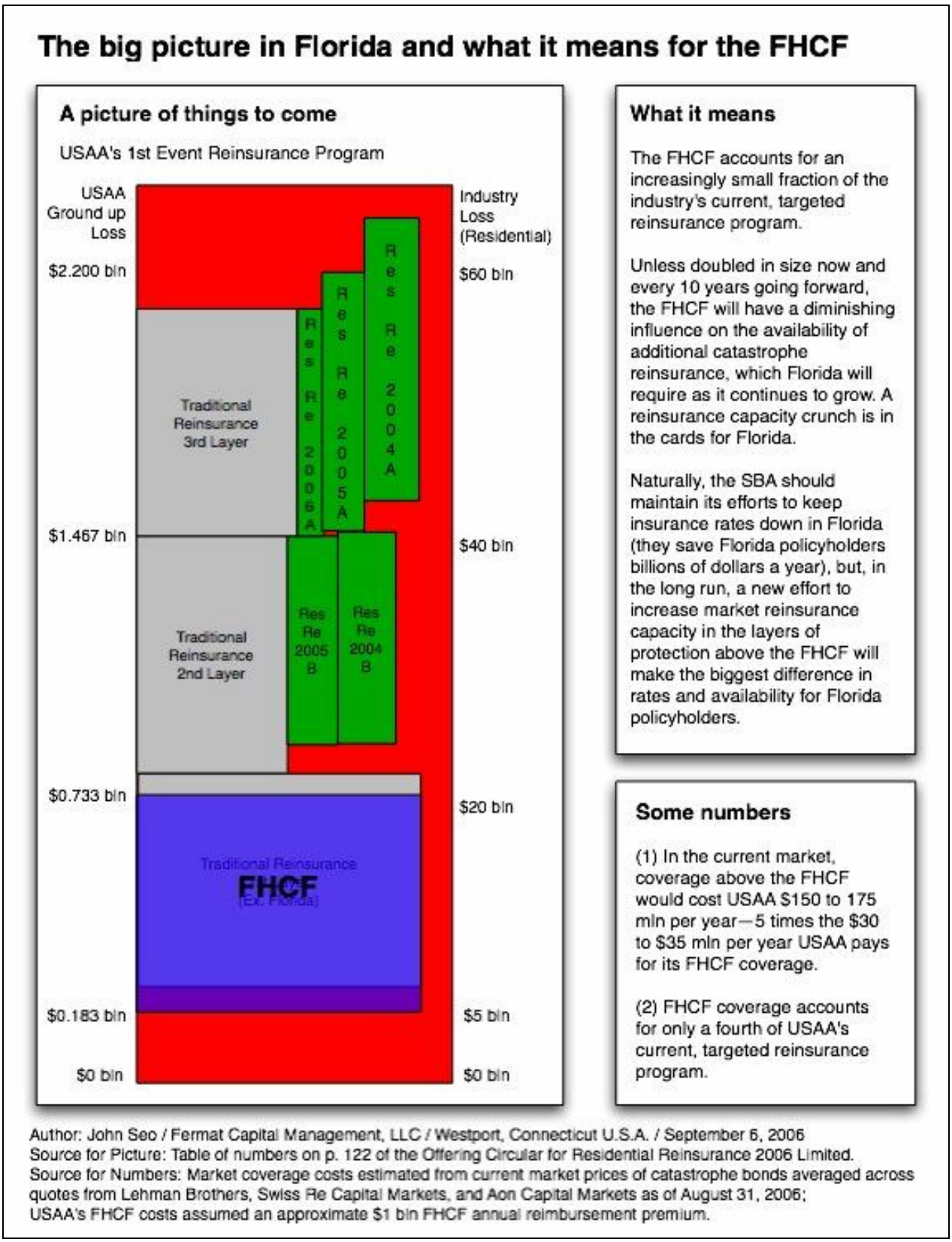
Assuming Fermat's characterization of USAA's reinsurance program is accurate and consistent with other larger insurers' reinsurance programs (supporting residential policies in Florida), two important risks may be developing:

1. Smaller primary insurers, especially Florida-only companies, may lack access to capital market reinsurance solutions and, thus, are more likely to be priced out of reinsurance coverage. Such companies are more likely to be relatively thinly capitalized and susceptible to failure after large catastrophes.
2. The FHCF is increasingly likely to be providing reinsurance for "working capital layers" rather than true catastrophic events.

Overall, the State should consider the following changes in the administration of the FHCF:

1. Moving the FHCF premiums over time to approximate market-based pricing.
2. Resetting the FHCF's exposure to cover truly catastrophic events (i.e., in excess of 1 in 40 year events).
3. Utilizing reinsurance or new capital market products within the FHCF (or on top of its existing coverage) to diversify/export risks outside of Florida and lessen its reliance on post-event financing.

Chart 13



Source: John Seo, Fermat Capital Management

Insurance Capital Build-Up Incentives

The Insurance Capital Build-Up Incentive Program created under SB 1980 provided low-cost funding in the form of "surplus notes" to new or existing residential insurers. However, participation in the program requires that insurers maintain a 2:1 ratio of net premiums to surplus. This requirement is more aggressive than market standards and may increase the risk of primary company failure in the event of catastrophes.

The State should also consider incentives to alternative business forms to facilitate Florida insurance companies building capital. For example, reciprocal insurers, mutual insurers, and self-insurance/captive mechanisms should be encouraged. New reciprocal insurance structures are being proposed for Florida that have the potential to address capital shortages in high net worth and other niche markets. Although the proposed reciprocal structure may not be easily scalable, the concept is explored in more detail in the next section.

While encouragement of start-up insurance companies is important, Florida should not create disincentives to capital retention and balance sheet growth. There is a risk that limited apportionment companies will remain small and undercapitalized, exposing the residual market to further growth.

Other Observations

If hurricane loss mitigation was enhanced through State and/or local government mandates, private capital would take a more favorable view of the risk/loss rating.

Federal tax laws have a material impact on reinsurers' and insurers' cost of capital and required pre-tax margins, which flow through to reinsurance and primary rates. The State should actively advocate for federal tax exemptions/credits for insurance reserves held against catastrophic events. Changes to such laws would lower reinsurance rates and could improve available capacity. Bermuda has been a preferred domicile for start-up reinsurers because of its favorable business climate.

Staff Suggestions for Further Study

The State faces a number of important policy questions that go far beyond the SBA's assignment and core competency. Many of these policy issues are obviously embedded in the comments from the private investors summarized above. In the SBA's judgment, the capital markets offer no silver bullet that will resolve the State's insurance issues in the near-term. However, the following ideas may merit further study.

Facilitating Reciprocal Arrangements

An investor described a new reciprocal insurance endeavor being proposed for Florida. A reciprocal insurance company is essentially a mutual company. USAA is an example of a reciprocal company. The strategy of the new firm is to conservatively underwrite policies for large/valuable homes (i.e., minimum value of $1,000,000) that meet certain construction/mitigation requirements. The approved policyholders pay a first year premium, plus contribute surplus equal to 50% of their first year premium. The result is to create a company that is largely self-insured, reportedly able to afford a 1 in 100 year catastrophic event and potentially a second event. They will also be providing multi-line coverages to their policyholders to generate a faster surplus build-up.

This subject firm would target a conservative ratio of net premiums to surplus around 0.5-1.0 to 1. This ratio is well below the 2 to 1 net ratio required under the Insurance Capital Build-Up Incentive Program. It seems reasonable to consider relaxing this requirement for reciprocal companies. Such an approach could facilitate targeted incentives for private capital build-up.

The reciprocal structure has intuitive appeal for niche markets. While the structure may not be easily scalable, consideration should be given to identifying ways to encourage formation of reciprocal insurers, mutual insurers, and self-insurance/captive mechanisms.

Expanding the FHCF and Utilizing Near-Market Pricing

A number of the suggestions regarding the FHCF bear further study. The following principles form a potential framework for thinking about the future role of the FHCF and its potential expansion:

1. The FHCF should only be expanded when private market alternatives are not available or have failed.
2. Any expansion of coverage to the FHCF should be fair and available to all participating insurers. Providing the expanded coverage to selected groups of insurers will dilute benefits for the remaining participants.
3. If the FHCF is expanded to respond to a market crisis and the expanded coverage is made available to all participating insurers, the additional coverage should be priced at "near" market pricing levels. This will allow only those who need to purchase the extra

capacity from the FHCF to purchase it and thereby not create a situation where all insurers find FHCF coverage priced below the private market. Thus, private reinsurance will not be crowded out of the market in the long run. If the reinsurance markets come back to "reasonable" pricing levels, insurers will be able to shift back to the private market without as much disruption. Otherwise, providing "cheap" FHCF coverage can permanently crowd out private capital. Any FHCF additional coverage should not be so attractively priced for insurers that it competes with the private reinsurance market and does not allow for a smooth shift back to the private market once it has served its limited purpose.

4. Allow insurers to voluntarily select additional capacity they need from the FHCF and to purchase what they need from the private reinsurance market. If coverage is available in the private reinsurance market, incentives should not be provided to motivate insurers to purchase FHCF coverage.
5. Any expansion of the FHCF should be a temporary solution and should only be for 1 to 3 years. At the end of this time, the expanded coverage should not be available unless re-enacted by the Legislature for another temporary time period.

Expansions of the FHCF naturally result in more reliance on bonding or debt financing unless the expanded capacity is a result of a cash infusion. Debt financing may be necessary for dealing with catastrophes, but it should be recognized for what it is. When the State has the authority to assess its citizens to pay for debt to fund insurance losses, the State is substituting capital of its own citizens for insurance company capital. The FHCF's reliance on debt financing should receive careful consideration.

Facilitating New Capital Market Products

While none of the new capital market products in isolation is likely to have a significant short-term impact on the insurance situation in Florida, they could all be part of an innovative long-term plan to put the State on stronger footing in this sector. The trends appear clear – there are not enough traditional sources of capital to absorb the huge catastrophe risk associated with hurricanes in Florida. Markets will of course react to this situation by directing new sources of capital to Florida, if they can earn an adequate return. The State could help expedite this process through some or all of the mechanisms described above. The SBA has not yet completed sufficient due diligence to make definitive recommendations, but the following merit further research:

Cat Bonds

Cat Bonds could be used as part of any expansion of the FHCF to transfer the additional risk that comes with that expansion outside the State of Florida. While the maximum amount that could be done in any one issuance would be $300-$500 million, if the FHCF issued Cat Bonds in successive years it could buildup a meaningful semi-permanent layer of risk transfer. While one might argue that private entities could individually accomplish the transfer of the same risk via the same mechanisms, it may well be that the FHCF's role as an aggregator of individual company risks could provide it a significant cost advantage, and provide smaller companies that could not do Cat bonds on their own access to this risk transfer mechanism.

Sidecars

The State could consider becoming an investor or sponsor of a sidecar as a means to provide additional risk capacity to the Florida market. While it was suggested that this structure could work most efficiently in the commercial sector, it is possible that a public-private partnership of this manner could provide additional capacity and risk transfer in the residential sector that could marginally improve the affordability/availability dilemma. As an investor in a sidecar, the State would be taking on risk, not off loading it, but could use the approach to attract matching funds from other capital sources to target reinsurance of Florida hurricane catastrophe risk. Alternatively, the FHCF could sponsor a sidecar (within or outside of existing FHCF reinsurance layers) and take in capital from other investors.

Exchange Mechanisms

As discussed previously, exchange mechanisms have great theoretical appeal as a means to bring new capital into the Florida insurance market while avoiding the time lag and large transaction costs associated with other capital markets alternatives. Repeated historical failures suggest there may be fundamental reasons that this product is not as practically applicable as it might at first appear. However, given the dynamic nature of the capital markets, it could also be that its time simply had not yet come when historical attempts were made to trade hurricane risk via an exchange. Given the theoretical appeal of the product, and the fact that it would take any exchange mechanism a long time to begin to have a meaningful effect on the Florida insurance market, it may merit further study. Perhaps the best approach would be to enter into a dialogue with some of the leading exchanges trading other risk transfer products (i.e. the Chicago Mercantile Exchange) in an attempt to see if a Florida hurricane risk contract can be structured that will eventually overcome the problems that plagued these efforts in the past. It does not appear to us that the State's involvement in starting or running a new and separate exchange is the optimal approach, given that the infrastructure already exists elsewhere and there are few, if any, advantages to the State's operation of such an exchange.

Appendix 1: List of Participants

- **Goldman Sachs & Co.**
- **Thomas H. Lee Partners, L.P.**
- **Kohlberg Kravis Roberts & Co.**
- **Perry Capital**
- **Berkshire Hathaway Group**
- **Stone Point Capital**
- **Warburg Pincus**
- **Fermat Capital Management, LLC**
- **Royal Palm Insurance Company**
- **Ritchie Capital Management, LLC**

Appendix 2: Summary of FHCF Series 2006A and Series 2006B Financings

As a result of the State's losses during the 2004 and 2005 hurricane seasons (approximately $35 billion in insured losses statewide), the FHCF estimates it will pay a total of over $8 billion to over 100 separate insurance companies to reimburse them for their covered losses. The losses have put a strain on the liquid resources of the FHCF. The FHCF executed two financings in response – one to meet a projected (not yet realized) cash shortfall caused by the 2005 storm losses, and one to inject liquidity into the FHCF in preparation for the 2006 (and beyond) hurricane season(s). Both financings were well-received by the markets and the rating agencies; the FHCF enjoys long-term bond ratings in the AA category from all three major rating agencies.

1. FHCF Series 2006A Post-Event Financing
    - $1.35 billion in tax-exempt, fixed rate bonds were issued to enable FHCF to make payments to participating insurers for losses resulting from 2005 hurricanes after adjusting for $200 million in rapid-cash factor.
    - The bonds were issued with five-year term with a true interest cost of 3.985%.
    - The debt service will be paid from assessment revenues produced by the 1% emergency assessment levied on all property and casualty insurance lines in the State except workers' compensation, medical malpractice, accident & health, and Federal Flood. The total assessment base is over $35 billion.

2. FHCF Series 2006B Pre-Event Financing
    - $2.8 billion in taxable Extendible Floating Rate Notes were issued on "pre-event" basis to provide liquidity to FHCF to pay claims associated with any future hurricanes.
    - The notes were issued at LIBOR+ spread with a final maturity of five years and a first call date of July 15, 2007.
    - The note proceeds are invested and will be used to pay the debt service pending their need to pay any future claims.
    - This financing is an example of the State's proactive approach – the FHCF could have waited until after an event to do any required financing, but instead sought to put in place a liquidity program pre-event that would maximize its ability to continue to pay claims in a timely manner after any storm.

3. Other Financings/Assessments by Citizens and Florida Insurance Guarantee Association (FIGA)
    - In addition to the FHCF financing, Citizens executed a $3.05 billion pre-event financing to provide it needed liquidity for future events. Citizens did not require any post-event financing to pay claims. It did have a 2004 deficit of

$515 million, which was recovered via a 6.85% one-time regular assessment, and a total 2005 deficit of approximately $1.8 billion, which was reduced by the Legislature's appropriation of $715 million. The remaining deficit will be recovered via a regular assessment of approximately 2.4% and an emergency assessment of approximately 1% per year for 10 years.

- FIGA requested and OIR approved the levy of a 2% assessment to pay losses associated with the insolvent Poe Companies, which had over 300,000 policies in force in the State. This assessment will produce over $200 million, which, in combination with other available sources, may be sufficient to cover all outstanding claims. If it is not, the Legislature has granted FIGA authority to issue bonds backed by up to an additional 2% assessment.

Appendix 3: Historical Efforts to Establish Cat Futures Exchanges

H.R. 230 - Natural Disaster Protection and Insurance Act of 1997:

Proposed by the Clinton Administration, the contracts established under H.R. 230 were to provide per-occurrence excess–of–loss reinsurance coverage to private insurers and reinsurers. Pricing of the contracts was to reflect four factors: risk based price, cost-of-capital adjustment, adjustment to cover operating and administrative expenses, and contributions to a mitigation fund. The coverage and fixed payout of the contracts was to be based on insurance industry losses and not individual company losses. Contracts were planned to be one-year duration and were expected to be sold annually at an auction by the Secretary of the Treasury and the reservation price was to be designed in a fashion to avoid potential government subsidy and ensure that the program was self supporting. If payouts exceeded the premiums received, the Federal government would use its ability to borrow at the risk free rate to fund losses. When premiums exceeded payouts, the Treasury would essentially be receiving a loan, reducing the cost of government debt. A major selling point of this idea was that by taking advantage of the Federal government's ability to diversify risk, the contracts could be sold at rates lower than would otherwise be possible in reinsurance markets.

The expected industry losses from natural disasters were expected to be determined by the federal commission, which would have determined the risk based price. Except for a maximum of 5 percent of the reinsurance contract premiums that were to go into a mitigation trust fund, all other premiums were expected to go into a reinsurance trust fund and all payments on the contracts were to be made from the reinsurance trust fund.

The maximum amount of losses to be covered would have depended on the payout ratio of the contracts and the maximum amount paid out each year was expected to be limited to $25 billion, with an annual adjustment provision for inflation. The proposed bill included that that the Secretary would auction annually at least 25 percent of the maximum number of contracts that could be made available each year with a maximum total annual payout limit of $25 billion.

The bill was never enacted and some argued that had it been enacted, a net increase in spending by the government would have taken place. The reasoning behind these arguments included: a) payout on the contracts were likely to occur, b) the price of the contracts was more likely to be too low than too high, resulting in a large liability. Had they been priced too high demand would decrease, leaving minimal gains, if any, for the treasury, and c) other federal disaster assistance would not have been reduced significantly as a result of enacting the bill.

Chicago Board of Trade:

The options traded on the Chicago Board of Trade for eight years or from 1992 to December of 2000. The option contracts were based on an industry loss computation for all catastrophes losses in different regions or states, East, Florida, Midwest, National, Northeast, Southeast and

Texas. About two dozen participating insurers released premium and loss information to their statistical agent, Insurance Services Office ("ISO") Data. The securities were cash options on futures, with calls, puts and spreads.

For example, if a call with a strike price of 20 index points (equivalent to $2 billion in insurance claims as index or an index point equals $100mm)) is purchased, and catastrophe claims are more than $2 billion, the payout was $200 for every point over 20 index points. For example, if the catastrophe costs were $3 billion and 10 contracts were purchased, the payout would be $2,000. In March of 1999, shortly before the contracts stopped trading, the CBOT began analyzing the sustainability of the contracts as open interest stood at 16,000 but with light daily trading. The CBOT ceased trading these contracts in December of 2000.

Bermuda Commodities Exchange:

The Bermuda Commodities Exchange traded futures for only two years or from 1997 to 1999. Futures trading was shut down also due to low trading volume and open interest.

In this exchange market, each option represented $5,000 of coverage and required the seller of the option to pay the purchaser $5,000 if the level of the specified index was at or above the strike price. All sellers of options were 100% collateralized and with the amount required to be paid under each option sold in the event that an option settled in the money. Options covered six month periods starting in January and July. The regions or state covered by the index included: National, Northeast, Southeast, Gulf, Midwest and Florida. The index used to determine damages gathered information from pre-selected insurance companies at the zip code level in the regions covered by the options. The index reflected damage caused by windstorm, hail and freezing rain and excluded losses related to fire, flood, earthquake, explosion and riots. The three different types of contracts covered single events, two events during one time period and cumulative losses during the period covered.

CATEX: Established in 1994, CATEX acts as a computer-based system that facilitates transactions between insurers, reinsurers, brokers and agents worldwide. The platform used by CATEX is Pivot Point which is an end to end transaction system encompassing insurance and reinsurance placement, claims and accounting for brokers, agents and carriers. CATEX launched the CATEX Global Market, the world's first online exchange for transacting insurance and reinsurance business. The CATEX market allows buyers and sellers of insurance and reinsurance to transact or swap risk. CATEX is based in Princeton, New Jersey with operations in London as well.

Current Hurricane Futures Contract Platforms:

HedgeStreet - The nation's first government-regulated online retail market for trading binary and futures contracts. The exchange offers futures trading, currency trading and commodity trading. HedgeStreet is a designated contract market (DCM) and a registered derivatives clearing organization (DCO), and is subject to regulatory oversight by the Commodity Futures Trading Commission (CFTC).

HedgeStreet recently began offering futures contracts that allow traders to manage risk or speculate on the financial impact of hurricanes and tropical storms. The contracts derive their value from information supplied by the ISO, which is a major provider of actuarial, statistical and underwriting information for the property/casualty insurance and risk management industries as well as an authority on insured property losses from catastrophes in the United States.

HedgeStreet provides $100 binary contracts for hurricane season or for individual hurricanes. For example, one can buy 10 contracts at $30 per contract, with the position that the hurricane season will result in damages equal to or greater than $10 billion as determined by the ISO. Should damages fall below $10 billion, the buyer of the contract will lose $300. Should damages equal or exceed $10 billion the contracts will settle for $1,000 (each contract and will settle for $100) or the buyer will earn a profit of $700. Trading fees are set at $0.10 per $10 contract and $1.00 per $100 contract.

Hurricane Season: The underlying value of the contract is based on the total estimated losses from hurricanes and tropical storms that caused at least $100 million in insured damages during the 2006 hurricane season, as reported by ISO. The trading period for these contracts will end on the last day of the hurricane season, November 30, 2006. As of 9/3/2006, the open interest for all contracts in this category was 72.

Individual Hurricane: The underlying value is derived from the preliminary damage estimates caused by a specific hurricane or tropical storm, as reported by ISO. Contracts are listed once a tropical storm has developed over the Atlantic Ocean as determined by the National Hurricane Center.

The contracts are 100% collateralized for both sides of the trade that is equal to the maximum amount that can be lost if the predicted outcome does not occur.

Advantage of Contracts:

Individuals trade contracts for purposes of hedging some of their property value, speculate on the location and extent of damages and to arbitrage the price difference between insurance policy costs and the hurricane contract market.

Institutions enter into contracts with the aim of reducing their policy payout obligations. Insurers can reduce risk by buying contracts that pay off when damages are high. By buying and selling contracts to shift payout exposure geographically, and over time, they can sell contracts to take on exposure to areas where they are less represented.

Intrade – Run by a company called Trade Exchange Network and based in Ireland, Intrade began trading in 2002. The exchange allows investors to enter into contracts that derive their value from a number of different factors ranging from hurricane strength to beliefs on the outcome of an upcoming election.

Contracts are set up in a fashion very similar to that of HedgeStreet. Prices are quoted between 0 and 100 with contracts settling at $0 if the speculation is unfulfilled, or $100 if fulfilled. Trading volume on Intrade is higher than that of HedgeStreet with total "weather contract" volume of 6,950 on 9/11/2006. The cash requirement is the same to that of HedgeStreet, 100% collateralized. Fees are set at $0.04 per trade. The contracts are also different in that they derive their value from different factors.

Contracts offered include:

1. Whether a category 3 hurricane will hit this hurricane season in the following states - AL, DE, FL, GA, LA, MD, MS, NC, NJ, NY, SC, TX or VA between June and November.
2. Whether Florence will land as a category 1 hurricane or higher in each of the states mentioned above. (Contract depends on active storms at any given time)
3. Whether Florence will not make landfall as a category 1 hurricane in any of the sates mentioned above. (Contract depends on active storms at any given time)
4. What the last named storm of the 2006 hurricane season will be - Florence, Gordon, Helene, Isaac, Joyce, Kirk, Leslie, Michael, Nadine, Oscar, Patty, Rafael, Sandy, Tony, Valerie, William or any other name thereafter

Hurricane Futures Market – Developed by three University of Miami professors studying why the public's expectations for hurricane landfalls occasionally differ from those of the National Hurricane Center. Trading is restricted to take place between academics and weather specialists with registration available by invitation from the market managers only. The University of Iowa hosts the market alongside other futures contracts such as Nobel Prize winners, presidential futures and economic indicators.

The National Hurricane Center (NHC) is the official source for the names, classification of strength and location of landfall. New markets open after the announcement by the NHC of the name of a new storm, typically within six hours of the announcement.

Contracts:

Rather than predicting the economic impact of a season or storm, contracts are based on the center position at the point of first landfall along the U.S. mainland coastline of named Atlantic Basin tropical cyclones, which may be hurricanes, tropical storms or tropical depressions at the time of landfall. Trading of the contracts continues from market open until after the storm makes landfall or dissipates, at which time contracts are settled. Contracts are binary in nature with values of $1.00 and $0.00. The contract predicting landfall has a value of $1.00 with all other contracts having a value of $0.00. Currently, those participating receive $100 per person with which they can use to speculate.

Trading System:

Transactions are executed by the trader using a real-time web based system called Web Exchange (WebEx). The system is maintained by the Iowa Electronic Markets project in the University of Iowa's Tippie College of Business.

Appendix 4: Overview of 2006 Legislative Changes and Property and Causality Insurance Reform Committee

The overall thrust of SB 1980 was to take steps toward ensuring a more stable property insurance market that is less dependent on public sector mechanisms. To do this, the bill included provisions in three key areas : (1) **rates** - by allowing the industry more rate-setting flexibility and requiring Citizens' rates to be more self-funding, overall industry rates can rise to a level more commensurate with the underlying hurricane risk in Florida; (2) **mitigation** – the bill provides specific economic incentives to homeowners to strengthen their homes against hurricane damage; mitigation is an important long-term strategy in the State's plan to improve the stability of the insurance market; and (3) **State-sponsored mechanisms** - the bill provides specific steps to strengthen each of the State's three quasi-public property insurance mechanisms – the Florida Hurricane Catastrophe Fund, Citizens Property Insurance Corporation, and the Florida Insurance Guaranty Association – to ensure that they can continue to fulfill their respective roles while not displacing additional private investment.

In addition to passing and signing SB 1980, the State has exhibited its commitment to the FHCF and the property insurance market in other ways. For example, (1) both of the FHCF's bond issues and the required assessment of 1% were approved by the Cabinet without dissent; the assessment was subsequently ordered by OIR in June; (2) earlier this month the Cabinet authorized the reactivation of a commercial JUA under the provisions of a dormant 1986 statute to address a burgeoning commercial insurance crisis in the State; and (3) also earlier this month, Governor Bush named 15 leaders in our State to serve on a blue-ribbon committee to examine the property insurance situation in Florida and propose solutions; this group has already met twice, and has seven more meetings scheduled this year.

Summary of Specific Provisions of SB 1980

1. Citizens Property Insurance Corporation General provisions
   a. $715 Million appropriated to fund 2005 deficit
   b. Reduced premium regular assessment by over 7%. Remaining regular assessment approximately 2.4%
   c. Emergency assessment for 2005 deficit to be approximately 1%, per year for 10 years (time period mandated by SB 1980)
   d. Reduced future risk portfolio of Citizens by phasing out coverage for non-homestead properties and properties with values over $1 million
   e. Required stronger rate-setting mechanism to reduce risk of future assessments and encourage private capital investment
   f. Changed assessment mechanism to increase reliance on Citizens' policyholders to fund deficits

2. Florida Hurricane Catastrophe Fund (FHCF)
   a. Required 25% rapid cash build-up factor in premiums
   b. Allowed "limited apportionment" companies to buy $10 million in additional coverage; 32 companies have taken advantage of this provision, purchasing an additional $270 million in coverage.

3. Insurance Capital Build-Up Incentive Program
   a. Provided funding in the form of "surplus notes" to new or existing residential insurers
   b. This is a matching program designed to encourage new private investment in the State -- amount of surplus not to exceed $25 million and insurer must contribute new capital
   c. Appropriated $250 million from General Revenues for the program
   d. $20 million loaned to date to one company; 10 applications pending for another $200 million.

4. Hurricane Loss Mitigation
   a. Established the Florida Comprehensive Hurricane Damage Mitigation Program
   b. Provides free inspections and 50 percent matching grant for single family homes to retrofit
   c. Appropriated $250 million from General Revenues for the program

5. Insurance Rates - Office of Insurance Regulations (OIR) Requirements and Exceptions
   a. OIR to approve a rating factor to provide an insurer a reasonable rate of return commensurate with the hurricane risk profile
   b. Reevaluate discount for homes built to meet State's Building Code
   c. Insurer may increase or decrease rates by up to 5% statewide average or 10% for any territory, without being subject to determination by OIR in any 12-month period

6. Florida Insurance Guaranty Association (FIGA)
   a. Authorizes FIGA to impose annual emergency assessments on insurers of up to 2% to issue bonds to pay insurer claims due to insolvency
   b. Increase maximum amount of liability per claim from $300,000 to $500,000.

Florida Property and Casualty Insurance Reform Committee

1. Created by executive order on June 27, 2006
   a. 15-member Committee assisted by an 18-member Technical Advisory Committee
      i. Reform Committee consists of legislative and business leaders from around the State; chaired by Lt. Governor Toni Jennings.
      ii. Technical Advisory Committee consists of professionals with specific and relevant insurance expertise

2. Mission of the Committee is to:
   a. Provide a forum to discuss the problems plaguing the insurance market and our citizens as well as to offer recommendations to stabilize the industry;
   b. Make recommendations on improving competition and creating incentives for insurance policywriting in all markets; encouraging commercial as well as residential hazard mitigation; improving insurance agent underwriting practices; reducing the reliance on Citizens; and evaluating the effectiveness of the programs enacted in SB 1980.

3. First meeting was held August 8; a total of nine meetings are scheduled, ending November 15.

4. Committee shall present an Interim Report no later than November 15, 2006, Mid-Term Report no later than December 15, 2006, and Final Report of its findings and recommendations no later than February 1, 2007, to the Governor, the President of the Senate, and the Speaker of the House of Representatives.