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HURRICANE ANDREW AND INSURANCE: THE ENDURING IMPACT OF AN HISTORIC STORM

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INTRODUCTION

Hurricane Andrew hit Florida on August 24, 1992, and the tumult for the property insurance market there has not ceased in the 20 years since.

Andrew was the costliest natural disaster in U.S. history in terms of insurance payouts to people whose homes, vehicles and businesses were damaged by the storm when it struck Florida and Louisiana in 1992. The insurance claims payout totaled \$15.5 billion at the time (\$25 billion in 2011 dollars). Even today, the storm is the second costliest natural disaster; Hurricane Katrina, which hit in 2005, is the most costly natural disaster.

But the cost is only part of Andrew's legacy. It also revealed that Florida's vulnerability to hurricanes had been seriously underestimated. That reality was not lost on other coastal states nor on the insurance industry, which reassessed their exposure to catastrophic storm damage in the aftermath of Andrew.

The event brought a harsh awakening and forced individuals, insurers, legislators, insurance regulators and state governments to come to grips with the necessity of preparing both financially and physically for unprecedented natural disasters.

Many of the insurance market changes that have occurred nationally over the last two decades can be traced to the wakeup call delivered by Hurricane Andrew. These include:

- More carefully managed coastal exposure.
- Larger role of government in insuring coastal risks.
- Introduction of hurricane deductibles.
- Greater use of reinsurance capital from around the world.
- The birth and rapid evolution of sophisticated catastrophe modeling.
- Strong support for strengthened building codes and the importance of enforcement of these codes, as well as enhanced understanding of the necessity of mitigation.

A storm of sorts continues, even in hurricane-free years, as Florida adapts to the risk management strategies of private insurers and the state-run Citizens Property Insurance Corp., legislative and regulatory actions, population growth, a faltering economy and with the state's continued vulnerability to the threat of intense storms. Other coastal states face similar challenges, but because no other state has the exposure to hurricanes that Florida possesses, the state has become a laboratory, of sorts, for what works—and what does not.

The composition of the property insurance market in Florida also changed after Andrew. In 1992, the property/casualty market in Florida was 6 percent domestic carriers and 94 percent foreign (meaning those based outside the state), specifically national insurance companies. Twenty years ago, there was no Citizens Property Insurance Corp. There was only the Florida Windstorm Underwriting Association (FWUA), which insured beach-front property.

Limited availability of insurance coverage for the most vulnerable property was a problem before 1992, yet became amplified in Andrew's aftermath. By the end of 1992, the FWUA had fewer than 62,000 policies and an exposure measured by total insured value of \$7.4 billion.¹ Five years later, with the formation of the Florida Residential Property and Casualty Joint Underwriting Association (FRPCJUA), there were 417,342 policies in the FWUA, another 487,590 policies in the FRPCJUA with a combined exposure of more than \$136 billion.² As of June 2012, Citizens Property Insurance Corp., formed in 2002 through the merger of the FWUA and FRPCJUA, had more than 1.4 million policies in force with nearly \$500 billion in exposure to risk.

The scale of natural disaster risks underscores to insurers the importance of managing risk effectively. The private insurance industry secures capital in advance to enable it to respond to a natural disaster in a manner that enables it to pay the claims it owes while making the necessary adjustments in their business to position for the next event. Actions necessary to ensure companies' financial strength, which seem prudent and practical in other areas, are not viewed as objectively in Florida, particularly as the cost of coverage has increased and insurers have become more selective about the properties they choose to insure.

The story of Florida's property/casualty insurance industry in the 20 years since Andrew is one of continuous adjustments—a kind of Newton's Law response to the physical and economic damages caused by hurricanes and the continuing legislative and regulatory interventions. It affected homeowners and businesses equally; this paper focuses primarily on the impacts to residential insurance customers.

Hurricane Andrew blew away some long-held notions. Few anticipated the true extent of damage a major storm could cause in the modern age of large coastal populations and high-value properties. Andrew was unprecedented at the time, and while many lessons have been learned as a result, the winds have not completely settled.

¹ CPCU Journal, "The Expansion of the Public Sector's Involvement in Florida's Residential Property Insurance Market," Summer 1999.

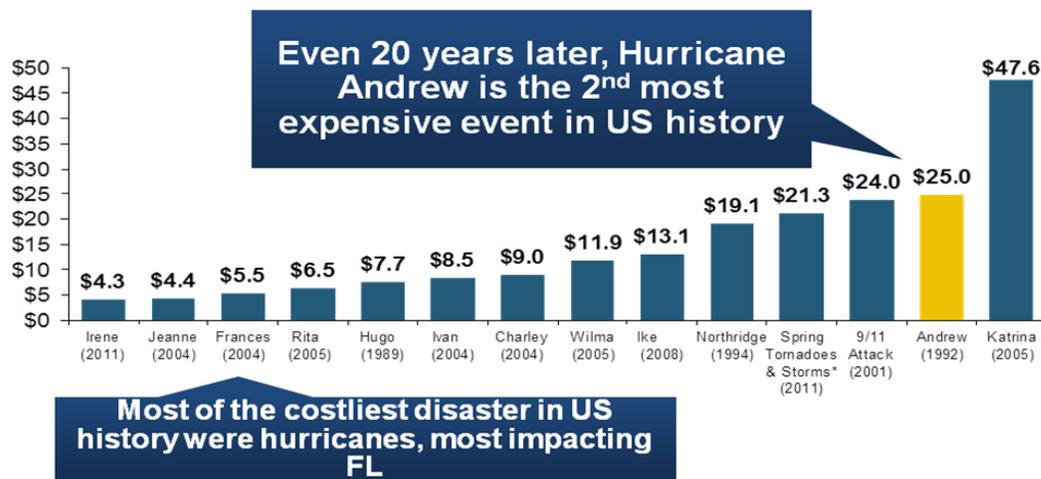
² Ibid

MANAGING COASTAL EXPOSURE

Twenty years later, Hurricane Andrew ranks among the costliest U.S. natural disasters, second only to Hurricane Katrina. Of the top 14 disasters in terms of insured losses, eight impacted Florida. No other state has Florida's hurricane history or exposure to loss. Florida accounts for the highest percentage of historical losses for catastrophes: 17 percent of all U.S. insured catastrophe losses from 1980 to 2010, or \$62.6 billion out of \$379.1 billion in losses.³ By comparison, Texas is ranked second, with 11.2 percent of catastrophe losses for the same 30-year period, and Louisiana is ranked third, with 9.7 percent.

Top 14 Most Costly Disasters in U.S. History

(Insured Losses, 2011 Dollars, \$ Billions)



*Losses will actually be broken down into several "events" as determined by PCS. Includes losses for the period April 1 – June 30.
Sources: PCS; Insurance Information Institute inflation adjustments.

In 1992, most of the companies providing residential insurance coverage in Florida were established insurers with national operations spread across the U.S. In fact, 94 percent of Florida's property insurance was provided by these companies, with 6 percent of the market belonging to "domestic" carriers, which are those companies incorporated within the state and primarily transacting Florida property insurance. The severity of losses from Hurricane Andrew caught many by surprise. Insurers learned how seriously they had underestimated their exposure to catastrophic losses. For example, one industry veteran predicted in advance of Andrew that a storm of similar strength would cause insured losses of \$4 to \$5 billion.⁴ The reality was three times greater.

³ Data adjusted for inflation from the Insurance Services Office (ISO).

⁴ Bradenton News Herald, May 1, 1995.

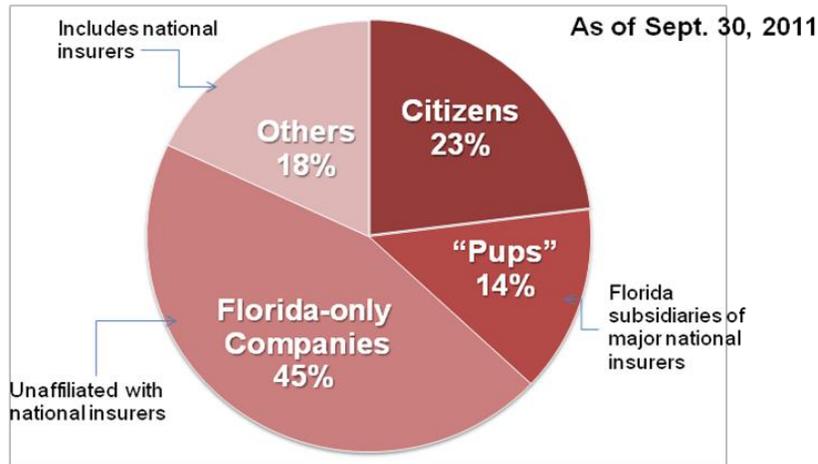
Seven domestic insurance companies and one foreign company became insolvent due to Andrew. Some companies became “technically insolvent” and required the transfer of funds from parent companies to pay claims.

The severity of losses caused insurers to take unprecedented steps, from cancellation and nonrenewal of policies to requests for large rate increases. These steps unsettled homeowners, who informed their legislators. Lawmakers reacted by calling a special legislative session in May 1993 to put a moratorium on actions insurance companies were taking to reduce their risk. The six-month moratorium was intended to be a temporary move, but it was followed by a three-year moratorium to restrict how quickly insurers could reduce their market share. Insurers were allowed to nonrenew up to 5 percent of their book of property policies in any 12-month period. The limit applied only to policies nonrenewed specifically to reduce hurricane exposure, not policies cancelled for any other reason. This change prompted insurers to adopt strict underwriting standards to limit the type and amounts of new business.

The effect over time was a transition of risk from national insurers to new entrants to the market. By 2007, the Florida Office of Insurance Regulation (OIR) reported that domestic carriers had 58 percent of the multi-peril homeowners insurance market, while only 24 percent were foreign carriers. Citizens had 18 percent of the market in 2007. By the end of September 2011, national writers comprised 18 percent of the market, the so-called “pups” (Florida subsidiaries of national insurers) had 14 percent, Florida-only unaffiliated companies had 45 percent and Citizens had 23 percent.⁵

⁵ Florida Office of Insurance Regulation, Quarterly Supplemental Report (QUASR). Includes licensed carriers only; surplus lines not included.

Florida Residential Property Admitted Market Breakdown



Source: Florida Office of Insurance Regulation, Quarterly Supplemental Report (QUASR). Includes licensed carriers only; surplus lines not included. Based on insured value for policies with wind coverage.

As properties were re-evaluated as part of insurers' risk portfolios, and sometimes declined by both national and domestic insurance companies, a parallel effect was the transformation of Citizens Property Insurance from a residual market carrier of last resort to the largest property insurer in the state. In 2007, the Florida Legislature, with encouragement from the governor, eliminated most barriers for customers to enter Citizens, while rolling back its rates by 20 percent or more. This formalized and accelerated its growth. Citizens is now open to almost any risk that applies for coverage, and it is charging rates in many areas of the state that are less than those charged by private carriers.⁶ A recent white paper on residual markets authored by the Insurance Information Institute documents the growing exposure of Citizens and the strategies being taken to reverse the trend.⁷

Many Floridians are under the mistaken impression that consumers have little choice in insurance carriers. While many companies have reduced the number of policies they have and adopted underwriting restrictions to limit the growth of new business, both long-standing and new domestic insurers have expanded to meet the need.

Some national carriers created affiliates (called "pups") to handle their Florida-only property business in an effort to more effectively isolate the significant Florida risk from that in other states in which they operate. The reasoning behind this is that having the entire organization's surplus (claims-paying capacity) at stake in one state may diminish a company's financial ability to pay

⁶ [Citizens Comparative Rate Analysis](#), Board of Governor's Rate Workshop, July 16, 2012

⁷ Insurance Information Institute, [Residual Market Property Plans: From Markets of Last Resort to Markets of First Choice](#), July 2012.

insurance claims to policyholders in the other states. Floridians may not agree with this balancing strategy, but it makes perfect sense to those living in the other 49 states.

Some claim that private insurance companies have “abandoned” Florida, although the facts prove otherwise. As the chart on the next page shows, private insurance companies write at least 77 percent of all residential insurance policies in Florida. In fact, in 53 of the state’s 67 counties, private insurers have greater than 80 percent of the residential policies written. In 33 counties, private insurers write at least 90 percent of the homeowners insurance coverage. The multi-peril policies listed in the chart include homeowners policies, dwelling/fire policies and insurance policies for mobile homes.

It is important to note that many Floridians living within designated coastal “wind pool” areas may have two policies on the same property—a wind-only policy, usually from Citizens, and an “ex-wind” policy, usually from a private insurer. An ex-wind policy is one that excludes wind coverage. (Citizens does write some ex-wind policies combined with wind-only policies on the same property.) The chart on page 8 is tallied by counting each separate policy. To isolate the effect of wind-only policies, the appendix on page 18 shows policies in force when the wind-only policies are excluded.

This counting is particularly challenging for Monroe County, the southern-most county in the state that includes the Florida Keys and which lies entirely in a wind pool zone. In fact, when the FWUA was formed in 1970, its primary purpose was to provide coverage for the Keys. Nearly everyone in Monroe gets their wind coverage from Citizens, but some get it through a Citizens multi-peril policy (2,577) and some through a Citizens wind-only policy (slightly less than 21,447, as there are a few private market wind-only policies reported). The vast majority of Monroe County residents, therefore, have two property insurance policies—one with Citizens for wind coverage and one from a private carrier for their other risks, such as fire and water damage. Of the 27,153 private market policies, some may have wind coverage but most do not, which is why Citizens writes around 21,000 wind-only policies to fill the gap. The final complication is that some people have chosen to have no wind coverage at all. These individuals may have a property insurance policy with a private carrier or Citizens for all perils, except hurricane damage. This is why Monroe County numbers do not appear to align exactly.

It is also worth pointing out that Hernando County has the lowest percentage of policies written by private insurers due to the high number of sinkhole claims, not to hurricane-related damage.

| Florida Residential Policies in Force By Insurer Type (As of 3/31/2012) | | | | |
|----------------------------------------------------------------------------|----------------|----------|------------------|-------------------|
| County | Total Policies | Citizens | Private Insurers | Private Co. Share |
| Alachua | 61,958 | 2,663 | 59,295 | 96% |
| Baker | 5,645 | 451 | 5,194 | 92% |
| Bay | 68,346 | 12,229 | 56,117 | 82% |
| Bradford | 5,476 | 370 | 5,106 | 93% |
| Brevard | 199,661 | 30,141 | 169,520 | 85% |
| Broward | 513,510 | 199,907 | 313,603 | 61% |
| Calhoun | 2,603 | 221 | 2,382 | 92% |
| Charlotte | 77,376 | 19,272 | 58,104 | 75% |
| Citrus | 56,376 | 4,813 | 51,563 | 91% |
| Clay | 58,976 | 1,829 | 57,147 | 97% |
| Collier | 152,574 | 24,931 | 127,643 | 84% |
| Columbia | 15,936 | 927 | 15,009 | 94% |
| Dade | 470,670 | 262,558 | 208,112 | 44% |
| Desoto | 8,293 | 757 | 7,536 | 91% |
| Dixie | 3,401 | 669 | 2,732 | 80% |
| Duval | 256,697 | 8,628 | 248,069 | 97% |
| Escambia | 100,505 | 15,261 | 85,244 | 85% |
| Flagler | 42,741 | 2,611 | 40,130 | 94% |
| Franklin | 6,766 | 2,206 | 4,560 | 67% |
| Gadsden | 10,668 | 864 | 9,804 | 92% |
| Gilchrist | 4,197 | 653 | 3,544 | 84% |
| Glades | 2,706 | 279 | 2,427 | 90% |
| Gulf | 6,617 | 1,776 | 4,841 | 73% |
| Hamilton | 2,487 | 175 | 2,312 | 93% |
| Hardee | 4,906 | 238 | 4,668 | 95% |
| Hendry | 6,840 | 835 | 6,005 | 88% |
| Hernando | 62,435 | 39,199 | 23,236 | 37% |
| Highlands | 38,147 | 1,572 | 36,575 | 96% |
| Hillsborough | 328,746 | 82,615 | 246,131 | 75% |
| Holmes | 4,247 | 402 | 3,845 | 91% |
| Indian River | 55,788 | 7,933 | 47,855 | 86% |
| Jackson | 11,303 | 905 | 10,398 | 92% |
| Jefferson | 3,413 | 287 | 3,126 | 92% |
| Lafayette | 1,416 | 185 | 1,231 | 87% |
| Lake | 114,285 | 4,902 | 109,383 | 96% |
| Lee | 278,781 | 55,451 | 223,330 | 80% |
| Leon | 76,041 | 2,365 | 73,676 | 97% |
| Levy | 11,124 | 2,110 | 9,014 | 81% |
| Liberty | 1,419 | 175 | 1,244 | 88% |
| Madison | 4,081 | 265 | 3,816 | 94% |
| Manatee | 119,196 | 26,927 | 92,269 | 77% |
| Marion | 113,015 | 5,228 | 107,787 | 95% |
| Martin | 53,752 | 8,321 | 45,431 | 85% |
| Monroe | 51,177 | 24,020 | 27,157 | 53% |
| Nassau | 26,772 | 2,719 | 24,053 | 90% |
| Okaloosa | 73,016 | 8,490 | 64,526 | 88% |
| Okeechobee | 11,151 | 936 | 10,215 | 92% |
| Orange | 322,889 | 7,042 | 315,847 | 98% |
| Osceola | 85,592 | 2,383 | 83,209 | 97% |
| Palm Beach | 470,226 | 137,133 | 333,093 | 71% |
| Pasco | 158,849 | 77,436 | 81,413 | 51% |
| Pinellas | 325,573 | 153,246 | 172,327 | 53% |
| Polk | 188,064 | 10,172 | 177,892 | 95% |
| Putnam | 20,023 | 2,177 | 17,846 | 89% |
| Santa Rosa | 52,177 | 5,700 | 46,474 | 89% |
| Sarasota | 202,066 | 61,742 | 140,324 | 69% |
| Seminole | 134,020 | 2,515 | 131,505 | 98% |
| St. Johns | 80,897 | 5,181 | 75,716 | 94% |
| St. Lucie | 92,450 | 13,092 | 79,358 | 86% |
| Sumter | 41,831 | 1,081 | 40,750 | 97% |
| Suwannee | 9,948 | 765 | 9,183 | 92% |
| Taylor | 4,903 | 686 | 4,217 | 86% |
| Union | 2,203 | 182 | 2,021 | 92% |

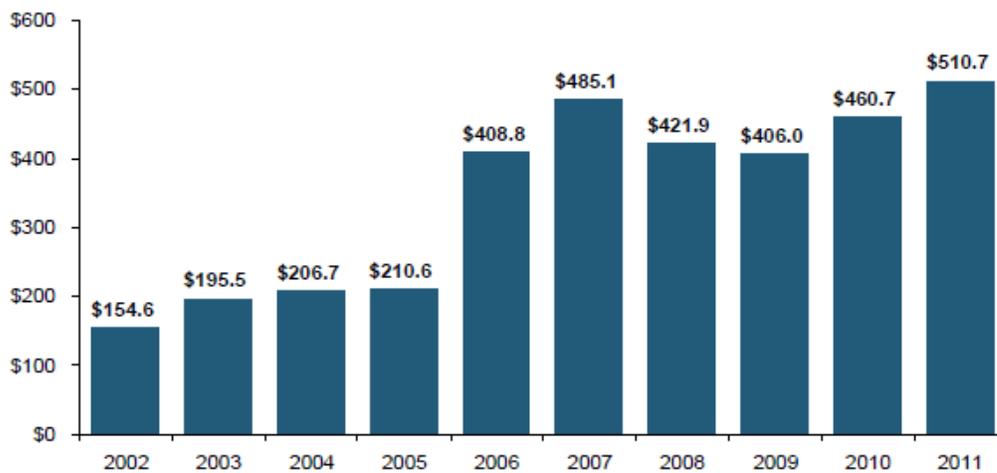
| | | | | |
|------------------|------------------|------------------|------------------|------------|
| Volusia | 196,754 | 28,362 | 168,392 | 86% |
| Wakulla | 9,205 | 1,305 | 7,900 | 86% |
| Walton | 34,784 | 10,358 | 24,426 | 70% |
| Washington | 5,946 | 509 | 5,437 | 91% |
| STATEWIDE | 6,023,636 | 1,391,338 | 4,632,298 | 77% |

Source: Florida Office of Insurance Regulation QUASR Data. Includes Homeowner, Dwelling/Fire, Mobile Home and Wind-only policies.
NOTE: Counts include both wind-only and multi-peril policies; properties with both policies are counted in Citizens and the private market.

LARGER ROLE OF GOVERNMENT IN INSURING COASTAL RISKS

Citizens is the state's largest property insurer and has experienced exponential growth. It has historically provided property insurance where it is not available from the private insurance market. It has tax-exempt status and provides insurance to homeowners, commercial residential properties and a limited number of commercial businesses in high-risk areas. With its exposure at historically high levels, Citizens is taking steps to reduce it.

Florida Citizens Exposure to Loss (\$ Billions)

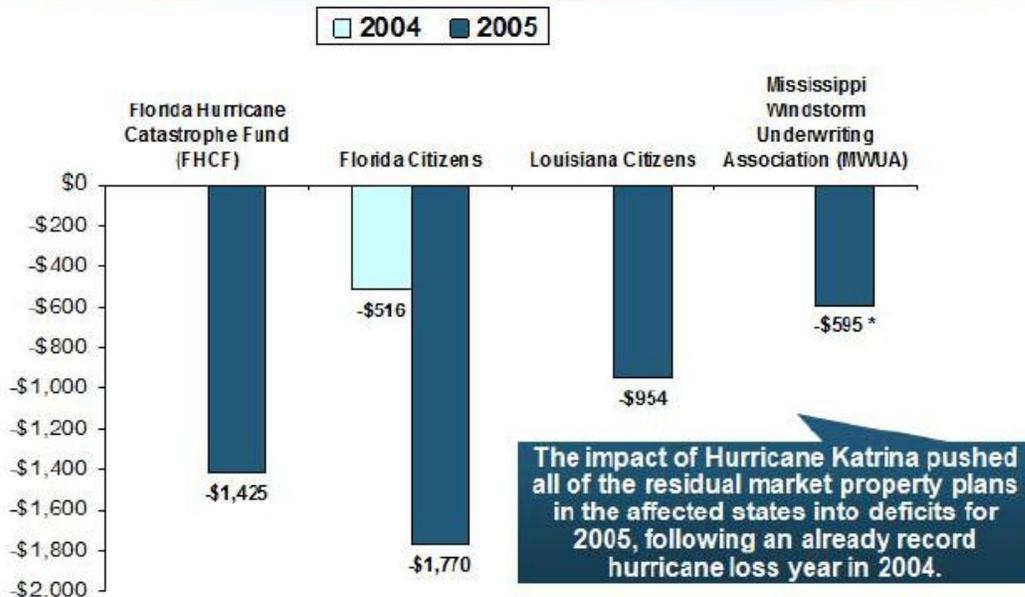


Since its creation in 2002, total exposure to loss in Florida Citizens has increased by 230 percent, from \$154.6 billion to \$510.7 billion in 2011.

Source: PIPSO; Insurance Information Institute (I.I.I.).

Citizens' ability to pay claims is partly dependent on another government entity, the Florida Hurricane Catastrophe Fund. The Cat Fund backs up insurance companies and reimburses a stated percentage of an insurer's hurricane losses once a retention (deductible) level is met. In the event of a major storm, the Cat Fund's ability to pay claims may also be impacted. If Citizens and the Cat Fund experience a deficit, everyone with a home, auto, boat or business insurance policy pays to make up for the shortfall.

Residual Market Plan Estimated Deficits 2004/2005 (Millions of Dollars)



* MWUA est. deficit for 2005 comprises \$545m in assessments plus \$50m in Federal Aid.
Source: Insurance Information Institute

The difference between private insurers and state-run insurance entities is that private companies must have the money needed to pay claims in advance, while state-run companies can run deficits and tax all policyholders for as many years as it takes to make up for losses.

In late 2011, Citizens began to eliminate coverage for items that are not part of the main building on the insured property, including awnings, screened-in pool enclosures and most patios, except those that are attached to the main building with a common roof. Some private insurers reduced coverage for these secondary structures after they were heavily damaged when Hurricane Wilma hit the state in 2005. Citizens has also imposed a 10 percent deductible on sinkhole claims and lowered the amount of personal liability coverage it offers. And since the start of 2012, the insurer has stopped underwriting policies for coastal (high-risk) properties valued at more than \$1 million. It is also hoping that private insurers will take over blocks of its business as soon as depopulation programs are once again in place.

Although during the 2012 legislative session a number of reforms were presented to limit the exposure of the Cat Fund and Citizens, the only measure to pass was a bill (HB 1127) nearly eliminating regular assessments to private insurers after a major storm. Effective July 1, 2012, regular assessments from Citizens' multi-peril residential policies (known as the Personal Lines Account) and multi-peril commercial policies (known as the Commercial Lines Account) are eliminated, and the maximum regular assessment for the group of policies in the wind pool areas

(the Coastal Account) is reduced from 6 percent to 2 percent. The purpose of the bill is to prevent private insurers from being forced to act as a bank for Citizens by paying upfront for Citizens losses when they have claims of their own to pay. Policyholders benefit from this assessment change because money advanced to Citizens in a regular assessment was previously immediately recouped from policyholders upon renewal. Now, if assessments are needed, there will be greater reliance on emergency assessments, which private insurers and Citizens policyholders pay over a period of months or years, similar to a sales tax. The money collected is forwarded to Citizens to help it pay back the funds it borrows to pay claims following a hurricane.

INTRODUCTION OF HURRICANE DEDUCTIBLES

Increasing development along the coastline of states from Florida to Maine has put more and more homes at risk of severe windstorm damage. After the wake-up call of Andrew, insurers in many coastal states began to sell homeowners insurance policies with percentage deductibles for storm damage. These deductibles are stated as a percentage of the insured value of the homes and generally are a higher dollar amount than traditional dollar deductibles used for other types of losses such as fire damage and theft.

Percentage deductibles are self-adjusting, meaning they reflect the insured value of the home, which is based on the changing construction costs of rebuilding a damaged property. With a \$500 standard deductible, for example, the policyholder must pay the first \$500 of the claim out of pocket. The same policyholder with a house insured for \$300,000 with a 5 percent deductible would pay \$15,000 of a claim. In this case, the consumer shares more of the risk with the insurer under a percentage deductible. This allows premiums to be lower than they would be otherwise in areas at risk for hurricane damage. To ensure policyholders are aware of this additional deductible, the specific amounts of hurricane deductibles are spelled out on the declarations page of homeowners policies.

Percentage deductibles have helped maintain the availability and affordability of property insurance while allowing insurers to reduce the overall risk and purchase reinsurance at less costly rates.

Depending on the state, insurance companies determine the level of the hurricane or windstorm or wind/hail deductible and where it should apply, except in Florida where state law dictates these variables. Insurers' hurricane deductible plans must be reviewed by the each state's insurance regulator, who may restrict the size of the percentage deductible and the regions in which they are used.

Some states also distinguish hurricane deductibles, which apply to damage solely from hurricanes, from windstorm or wind/hail deductibles, which apply to any kind of wind damage. Percentage deductibles typically vary from 1 to 5 percent of a home's insured value. In some coastal areas, higher hurricane deductibles may be allowed. The amount that the homeowner will pay depends on insured value of the home and the "trigger" selected by the insurance company, which determines under what circumstances the deductible applies. In some states, policyholders may have the option of paying a higher premium in return for a traditional dollar deductible, depending on how close they live to the shore. However, in some high-risk coastal areas, insurers may not give policyholders this option, making the percentage deductible mandatory.

Eighteen states and the District of Columbia have hurricane deductibles: Alabama, Connecticut, Delaware, Florida, Georgia, Hawaii, Louisiana, Maine, Maryland, Massachusetts, Mississippi, New Jersey, New York, North Carolina, Rhode Island, South Carolina, Texas, Virginia and Washington D.C.

GREATER USE OF REINSURANCE

When individuals buy insurance, they transfer some of their risk to their insurance company. The insurer retains some of that risk and transfers a portion to other insurance companies called reinsurers. Reinsurance is “insurance for insurance companies,” and almost all insurers reinsure at least some of their risk.

Insurance companies buy reinsurance for various reasons. The most important is that it enables them to pay claims quickly after a catastrophe. For some insurers, reinsurance is a way to write more direct business since it allows a company to tap into reinsurers’ capital. Additionally, the accounting treatment of reinsurance allows companies to achieve a more predictable return on their investment capital.

Reinsurance spreads risk in a way that direct insurers cannot do alone. It spreads risk across the globe, which has become a necessity as the cost of disasters increases. Through reinsurance, risk is spread horizontally and vertically. Horizontal risk sharing means insurers pay claims first and reinsurers bolster their ability to pay for severe catastrophic events. Vertically means that reinsurers would pay a percentage of each dollar of loss, making the total cost of catastrophes more predictable. It is often less expensive to buy reinsurance than it is to hold a large amount of capital to pay for the next storm.

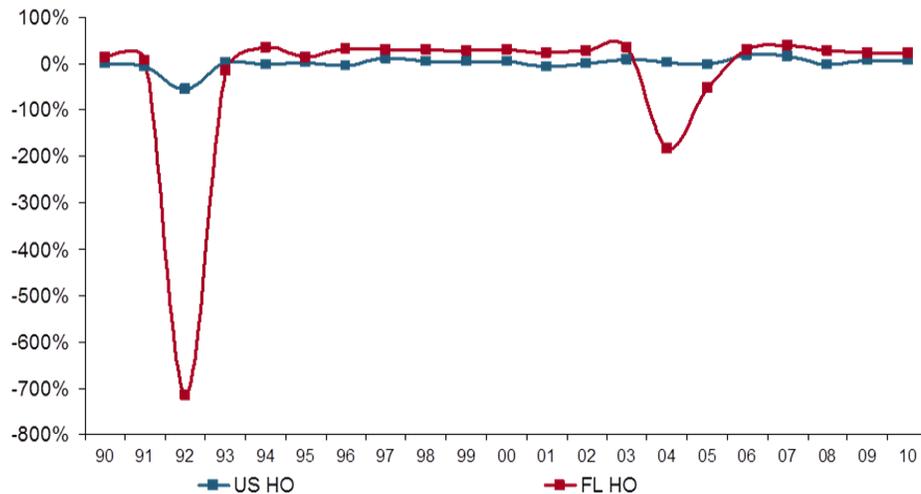
Some larger property insurers buy reinsurance from their parent company. This is a risk transfer strategy that can be less costly than buying coverage on the open market, and it allows cost savings to be passed on to policyholders. Insurance regulators oversee these transactions to ensure that an actual transfer of the underwriting risk takes place, as required by accounting standards, and that the prices are appropriate according to ratemaking laws.

Florida has a unique, mandatory public catastrophe reinsurance program. All property insurers in Florida are required to buy reinsurance from the state-run Florida Hurricane Catastrophe Fund, a stable, albeit incomplete, source of reinsurance. It is not designed to pay for all layers or types of losses from all types of catastrophic events; it is designated only for hurricane losses. Insurers have an annual deductible for the Cat Fund, which varies according to the exposures of each company, and an annual maximum payout. Insurers, therefore, purchase additional reinsurance, which is widely recognized as the cost of doing business in the country’s most hurricane-prone state.

Florida homeowners pay the second highest insurance rates in the U.S. (only Texas is higher). And in most years, insurers make a small profit. But when a major storm hits, losses are severe—and private insurers manage their business to anticipate this. It took Florida insurers more than a decade to break even after the losses from Hurricane Andrew.

The chart below illustrates how the instability of the Florida property insurance market compares with the U.S. market as a whole. Record losses—and the possibility of larger catastrophe losses—demand that insurers manage risk carefully. Return on net worth measures profitability by showing how efficiently invested capital is being used. The insurance industry’s capacity depends on capital, and any business depends on investors seeking the right balance between risk and return.

Return on Net Worth: Homeowners Insurance in FL vs. U.S., 1990-2010 (Percent)



Sources: NAIC.

When the winds remain calm in the short term, Florida’s financial results look good. However, as the above chart indicates, insurers in Florida had a *negative* return on net worth of -714.9 percent in 1992. Then, with the multiple storms of 2004, claims payouts resulted in a negative return of -183.3 percent, followed by a similar plummet in 2005, with -53.4 percent return on net worth. Moreover, a repeat of Hurricane Andrew during the 2012 hurricane season, on the 20th anniversary of Andrew, would produce losses of more than \$57 billion.⁸ A repeat of the historic Miami Hurricane of September 18, 1926 would result in insured losses of \$101 billion, which takes the current exposure into account.⁹

⁸ Modeled loss to property, contents and business interruption, and additional living expenses for residential, mobile home, commercial and auto exposures as of Dec. 31, 2008. Losses include demand surge. Source: AIR Worldwide Corp.

⁹ Ibid.

EVOLUTION OF CATASTROPHE MODELING

Prior to Hurricane Andrew, insurers estimated the size of future losses using “experience” data based only on what happened in the past. Actuaries simply adjusted recent history to reflect current trends. However, Andrew helped to prove that past data is a poor gauge for future catastrophe exposure. Previous projections failed to recognize that science indicated unprecedented physical events were within the realm of reasonable possibility. They also failed to properly account for population density and increasing construction and property values along the coastlines.

Catastrophe models today do incorporate lessons learned from past storms, and the models occasionally change when the science surrounding storm analysis improves sufficiently to warrant a model update. Models generate thousands of sample hurricane events, track them across land with various wind speeds, assign probabilities to storm scenarios and landfall locations, and incorporate the individual insurer’s policy count and locations to produce estimates of insured losses for an average event and a worst-case scenario. The important role of catastrophe models is to help insurance companies plan for the amount of capital they should secure to pay anticipated losses of the properties they cover. That is the fundamental role of insurers—to ensure claims will be paid. Most insurance companies use models from private modeling firms and, in some cases, their own models. Each company decides how to apply risk information to their own business.

Catastrophe models do not tell insurers how much to charge. Actuaries use modeled risk assessments to develop rates, along with other output based on factors that include simulated losses, claim adjustment and underwriting expenses, the cost of reinsurance and the desired rate of return on the business. In Florida, there is a Florida Commission on Hurricane Loss Projection Methodology, comprised of scientists, computer experts, actuaries and regulators, which validates the cat models insurance companies use. Florida law states that only those models found to be accurate and reliable may be used in rate filings.

Hurricane risk models deliver a spectrum of probabilistic forecasts, not short-term predictions. The intent of the models is to provide an objective view of future risk grounded in scientific research as well as historical damage data.

STRONG SUPPORT FOR STRENGTHENED BUILDING CODES AND MITIGATION

Years of evidence, along with expert opinion from structural engineers, indicates that building codes work. Strong codes have a substantial impact on the way buildings stand up to hurricane-force winds, largely because the weakest element in a building or the first component to fail drives up wind-related losses. Strong building codes—and enforcement of those codes—play an important role in loss prevention and public safety.

A Dade County, Florida, grand jury found that decades of neglect and cutting of corners by the construction industry and government building code officials compounded damage caused by Hurricane Andrew.¹⁰ The report stated: “A major failing of all Floridians has been our apparent inability to learn and retain the important lessons previous hurricanes should have taught us.” It noted that among the failings was allowing building codes to become outdated, allowing builders to

¹⁰ Final report of Dade County Grand Jury, filed Dec. 14, 1992.

use questionable construction techniques and materials and allowing enforcement agencies to lessen their diligence in code enforcement. The grand jury said all these mistakes must not reoccur.

Standards for construction, code-related inspections and enforcement varied widely from one county to another 20 years ago. Andrew demonstrated clearly that in addition to saving lives and reducing property loss, statewide building codes reduce reliance on public disaster aid, advance consistency for all building professionals and enable communities to recover more quickly from disaster.

Today, many states have a Building Code Effectiveness Grading Schedule (BCEGS), mandated through state statute, which assesses a community's building codes and enforcement of that code. The emphasis is on preventing losses from natural hazards. Municipalities with well-enforced, up-to-date building codes have fewer losses, and insurance rates reflect that.

According to the Insurance Institute for Business & Home Safety, Florida now has a well-developed system for regulating all aspects of building code adoption and enforcement, code enforcement training and certification, and licensing requirements for contractors and subcontractors. It is ranked tops in the U.S., along with Virginia. Florida has adopted the 2006 International Residential Code (IRC). The state is consistent with the wind provisions in the model code, but legislation was approved that eliminates a requirement from the 2009 IRC code for residential fire sprinklers in one- and two-family dwellings.

CONCLUSION

The obvious challenge for insurers and policyholders in Florida is the state's exposure to catastrophic damage from hurricanes. That fundamental point has not changed since Hurricane Andrew. In fact, the exposure has increased over the course of two decades with continued construction in vulnerable areas and an influx of new residents. By 2030, the population in Florida is expected to grow faster than any other state—an increase of 12.7 million people, according to the U.S. Census. The coastal counties of Walton and Santa Rosa counties are expected to grow dramatically and are among the top five U.S. projections for coastal population growth, according to a study by NOAA. This shows Andrew had little effect on diminishing demand for high-risk property.

But much has changed since Andrew:

- Citizens Property Insurance Corp. has grown from a market of last resort to the state's largest insurer. Since its inception in 2002, Citizens has grown 230 percent, from \$154.6 billion in total exposure to \$510.7 billion in 2011. Steps are being adopted to reverse the trend, yet the changes will happen over time—not overnight. In the meantime, all Florida residents remain liable for paying a portion of Citizens' losses after a big storm, whether or not they have a policy with the state-run company.
- Insurance companies rely more than ever before on reinsurance obtained from the state's catastrophe fund and the global reinsurance marketplace as a cost-effective means of spreading the risk from hurricanes more broadly.
- Insurers have a much more accurate gauge of the probability and likely cost of damage to the properties they insure through the use of increasingly sophisticated catastrophe models.
- Andrew built the case for strong building codes, and it showed that mitigation matters. An intense hurricane has a way of motivating people to invest in retrofitting their homes and makes them want to actively engage in the types of preparation that reduces their risk. Unfortunately, the absence of storms saps such motivation.

In 2012, Florida is entering its seventh straight hurricane season without a major storm. This is the second longest "dry spell" on record. The longest was a period from August 1856 to October 1865, more than nine hurricane-free years.

Another storm will come, although when and how powerful it will be cannot yet be known. In the meantime, insurers are taking the learned lessons from Hurricane Andrew to be financially prepared to pay the claims from the next major storm.

APPENDIX
**INSURANCE INFORMATION INSTITUTE
Residential Policies In Force at 3/31/2012, by Insurer Type**

| County | Multiple Peril | | | | Voluntary Market Share | Wind-Only Total | Grand Total |
|--------------|----------------|----------|---------|---------|---------------------------|--------------------|-------------|
| | Citizens | Domestic | Other | Total | | | |
| Alachua | 2,663 | 31,918 | 27,349 | 61,930 | 95.7% | 28 | 61,958 |
| Baker | 451 | 1,593 | 3,600 | 5,644 | 92.0% | 1 | 5,645 |
| Bay | 7,041 | 39,101 | 16,142 | 62,284 | 88.7% | 6,062 | 68,346 |
| Bradford | 370 | 1,876 | 3,230 | 5,476 | 93.2% | 0 | 5,476 |
| Brevard | 28,052 | 117,402 | 51,809 | 197,263 | 85.8% | 2,398 | 199,661 |
| Broward | 165,655 | 209,278 | 103,440 | 478,373 | 65.4% | 35,137 | 513,510 |
| Calhoun | 221 | 1,205 | 1,177 | 2,603 | 91.5% | 0 | 2,603 |
| Charlotte | 18,125 | 45,229 | 12,734 | 76,088 | 76.2% | 1,288 | 77,376 |
| Citrus | 4,813 | 35,482 | 16,072 | 56,367 | 91.5% | 9 | 56,376 |
| Clay | 1,829 | 26,918 | 30,223 | 58,970 | 96.9% | 6 | 58,976 |
| Collier | 16,228 | 97,512 | 29,085 | 142,825 | 88.6% | 9,749 | 152,574 |
| Columbia | 927 | 6,379 | 8,629 | 15,935 | 94.2% | 1 | 15,936 |
| Dade | 220,572 | 124,455 | 81,983 | 427,010 | 48.3% | 43,660 | 470,670 |
| Desoto | 757 | 3,426 | 4,108 | 8,291 | 90.9% | 2 | 8,293 |
| Dixie | 669 | 1,844 | 888 | 3,401 | 80.3% | 0 | 3,401 |
| Duval | 7,179 | 129,112 | 118,628 | 254,919 | 97.2% | 1,778 | 256,697 |
| Escambia | 7,165 | 50,528 | 34,552 | 92,245 | 92.2% | 8,260 | 100,505 |
| Flagler | 943 | 32,637 | 7,338 | 40,918 | 97.7% | 1,823 | 42,741 |
| Franklin | 520 | 3,670 | 655 | 4,845 | 89.3% | 1,921 | 6,766 |
| Gadsden | 864 | 4,405 | 5,399 | 10,668 | 91.9% | 0 | 10,668 |
| Gilchrist | 653 | 1,605 | 1,939 | 4,197 | 84.4% | 0 | 4,197 |
| Glades | 279 | 671 | 1,756 | 2,706 | 89.7% | 0 | 2,706 |
| Gulf | 621 | 3,682 | 1,004 | 5,307 | 88.3% | 1,310 | 6,617 |
| Hamilton | 175 | 952 | 1,360 | 2,487 | 93.0% | 0 | 2,487 |
| Hardee | 238 | 1,718 | 2,947 | 4,903 | 95.1% | 3 | 4,906 |
| Hendry | 835 | 2,747 | 3,257 | 6,839 | 87.8% | 1 | 6,840 |
| Hernando | 39,007 | 8,520 | 14,694 | 62,221 | 37.3% | 214 | 62,435 |
| Highlands | 1,572 | 21,435 | 15,134 | 38,141 | 95.9% | 6 | 38,147 |
| Hillsborough | 82,615 | 139,676 | 106,198 | 328,489 | 74.8% | 257 | 328,746 |
| Holmes | 402 | 1,740 | 2,105 | 4,247 | 90.5% | 0 | 4,247 |
| Indian River | 5,929 | 36,620 | 11,029 | 53,578 | 88.9% | 2,210 | 55,788 |
| Jackson | 905 | 4,474 | 5,924 | 11,303 | 92.0% | 0 | 11,303 |
| Jefferson | 287 | 1,174 | 1,952 | 3,413 | 91.6% | 0 | 3,413 |
| Lafayette | 185 | 453 | 778 | 1,416 | 86.9% | 0 | 1,416 |
| Lake | 4,902 | 62,557 | 46,775 | 114,234 | 95.7% | 51 | 114,285 |
| Lee | 41,883 | 169,613 | 52,820 | 264,316 | 84.2% | 14,465 | 278,781 |
| Leon | 2,365 | 40,763 | 32,879 | 76,007 | 96.9% | 34 | 76,041 |
| Levy | 1,735 | 4,765 | 4,169 | 10,669 | 83.7% | 455 | 11,124 |
| Liberty | 175 | 563 | 681 | 1,419 | 87.7% | 0 | 1,419 |
| Madison | 265 | 1,432 | 2,384 | 4,081 | 93.5% | 0 | 4,081 |
| Manatee | 25,164 | 71,978 | 20,018 | 117,160 | 78.5% | 2,036 | 119,196 |
| Marion | 5,228 | 60,582 | 47,188 | 112,998 | 95.4% | 17 | 113,015 |
| Martin | 8,321 | 35,131 | 10,193 | 53,645 | 84.5% | 107 | 53,752 |

| | | | | | | | |
|------------|-----------|-----------|-----------|-----------|-------|---------|-----------|
| Monroe | 2,577 | 17,037 | 10,116 | 29,730 | 91.3% | 21,447 | 51,177 |
| Nassau | 1,948 | 15,159 | 8,663 | 25,770 | 92.4% | 1,002 | 26,772 |
| Okaloosa | 5,675 | 38,111 | 26,205 | 69,991 | 91.9% | 3,025 | 73,016 |
| Okeechobee | 936 | 4,285 | 5,928 | 11,149 | 91.6% | 2 | 11,151 |
| Orange | 7,042 | 190,572 | 123,985 | 321,599 | 97.8% | 1,290 | 322,889 |
| Osceola | 2,383 | 57,720 | 25,441 | 85,544 | 97.2% | 48 | 85,592 |
| Palm Beach | 105,449 | 236,837 | 94,459 | 436,745 | 75.9% | 33,481 | 470,226 |
| Pasco | 75,772 | 45,318 | 35,903 | 156,993 | 51.7% | 1,856 | 158,849 |
| Pinellas | 145,093 | 123,717 | 47,941 | 316,751 | 54.2% | 8,822 | 325,573 |
| Polk | 10,172 | 107,536 | 70,314 | 188,022 | 94.6% | 42 | 188,064 |
| Putnam | 2,177 | 8,948 | 8,893 | 20,018 | 89.1% | 5 | 20,023 |
| Santa Rosa | 4,184 | 28,941 | 17,493 | 50,618 | 91.7% | 1,559 | 52,177 |
| Sarasota | 33,810 | 106,325 | 32,731 | 172,866 | 80.4% | 29,200 | 202,066 |
| Seminole | 2,515 | 73,607 | 57,572 | 133,694 | 98.1% | 326 | 134,020 |
| St. Johns | 3,643 | 54,148 | 21,183 | 78,974 | 95.4% | 1,923 | 80,897 |
| St. Lucie | 12,246 | 63,181 | 16,096 | 91,523 | 86.6% | 927 | 92,450 |
| Sumter | 1,081 | 29,839 | 10,898 | 41,818 | 97.4% | 13 | 41,831 |
| Suwannee | 765 | 3,630 | 5,553 | 9,948 | 92.3% | 0 | 9,948 |
| Taylor | 686 | 1,765 | 2,452 | 4,903 | 86.0% | 0 | 4,903 |
| Union | 182 | 749 | 1,272 | 2,203 | 91.7% | 0 | 2,203 |
| Volusia | 15,895 | 114,060 | 53,616 | 183,571 | 91.3% | 13,183 | 196,754 |
| Wakulla | 908 | 5,553 | 2,268 | 8,729 | 89.6% | 476 | 9,205 |
| Walton | 3,521 | 17,856 | 5,967 | 27,344 | 87.1% | 7,440 | 34,784 |
| Washington | 509 | 2,738 | 2,699 | 5,946 | 91.4% | 0 | 5,946 |
| Statewide | 1,147,954 | 2,984,453 | 1,631,873 | 5,764,280 | 80.1% | 259,356 | 6,023,636 |

Includes HO, DF, MH policies, whether multi-peril or wind-only.
Rollins Analytics, Inc.
Source: Office of Insurance Regulation QuaSR System