

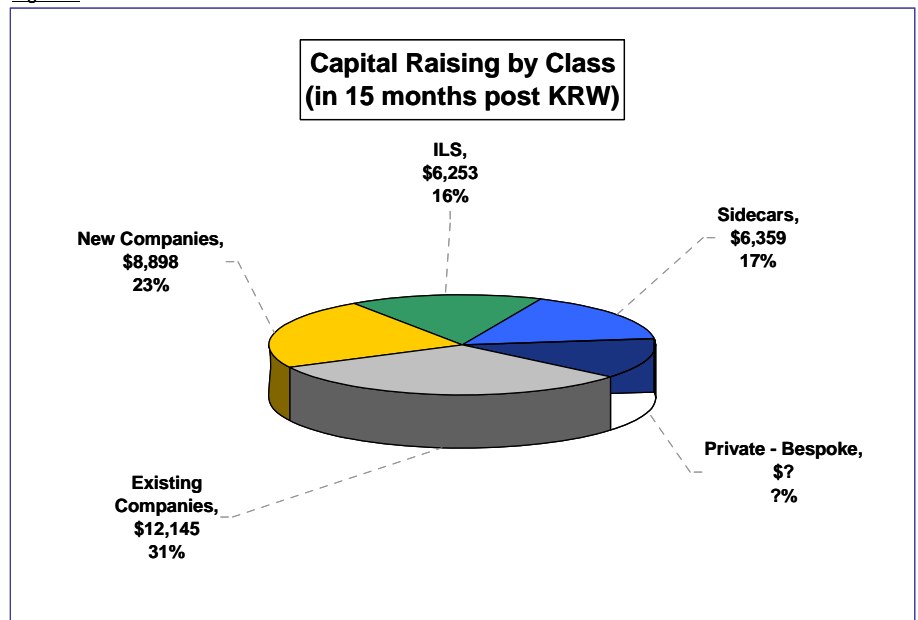
RECAPITALIZING REINSURERS A Never Ending Story?

By: Morton N. Lane, President

The early weeks of 2007 present a study in contrasts for both the property catastrophe reinsurance and insurance industries. The reinsurance industry has experienced a flood of new capital (of which more below) and has seen premiums turn lower from their June 2006 peak. In contrast, the insurance industry is galvanized by the actions of regulators, particularly in Florida, who have essentially mandated lower premiums for their citizen home-owners and decided to provide reinsurance capital via the enforced subsidy of their taxpayers. The reinsurance industry is largely unregulated, largely off-shore and driven by competitive market forces; the insurance industry is heavily regulated (by States) and appears to be largely driven by domestic State politics. In Florida the regulators want to extend the reinsurance that is provided at fixed prices from Citizens (their assessment and public backed insurer of last resort). Question is, which solution is likely to lead to lower prices over time (if they indeed should be lower) and which provides the healthier source of reinsurance capital? The answer seems self evident to us, and part of the

reason for that is the track record of the reinsurance industry during the last 15 months. The amount of capital raised and the innovation that has been displayed is impressive. The purpose of this paper¹ is to review and record that story.

Figure 1



¹ Many of the exhibits in this paper have been updated from two presentations made in 2006, specifically at the LAC World Bank meeting Nov. 15th in Mexico City and The Marcus Evans Seminar on Reinsurance in London Dec 6th.

DISCLAIMER

This paper shall not be considered an offer to sell or the solicitation of an offer to buy securities. All information has been obtained from sources both public and private that are believed to be reliable but the authors make no representation as its ultimate accuracy. The views and opinions are those of the authors and are not intended to guarantee any level of financial performance, risk exposure or investment outcome.

Table 1
Announced Capital Raising Intentions Post-Katrina, Rita and Wilma
(in approximate announcement date order, USD millions)

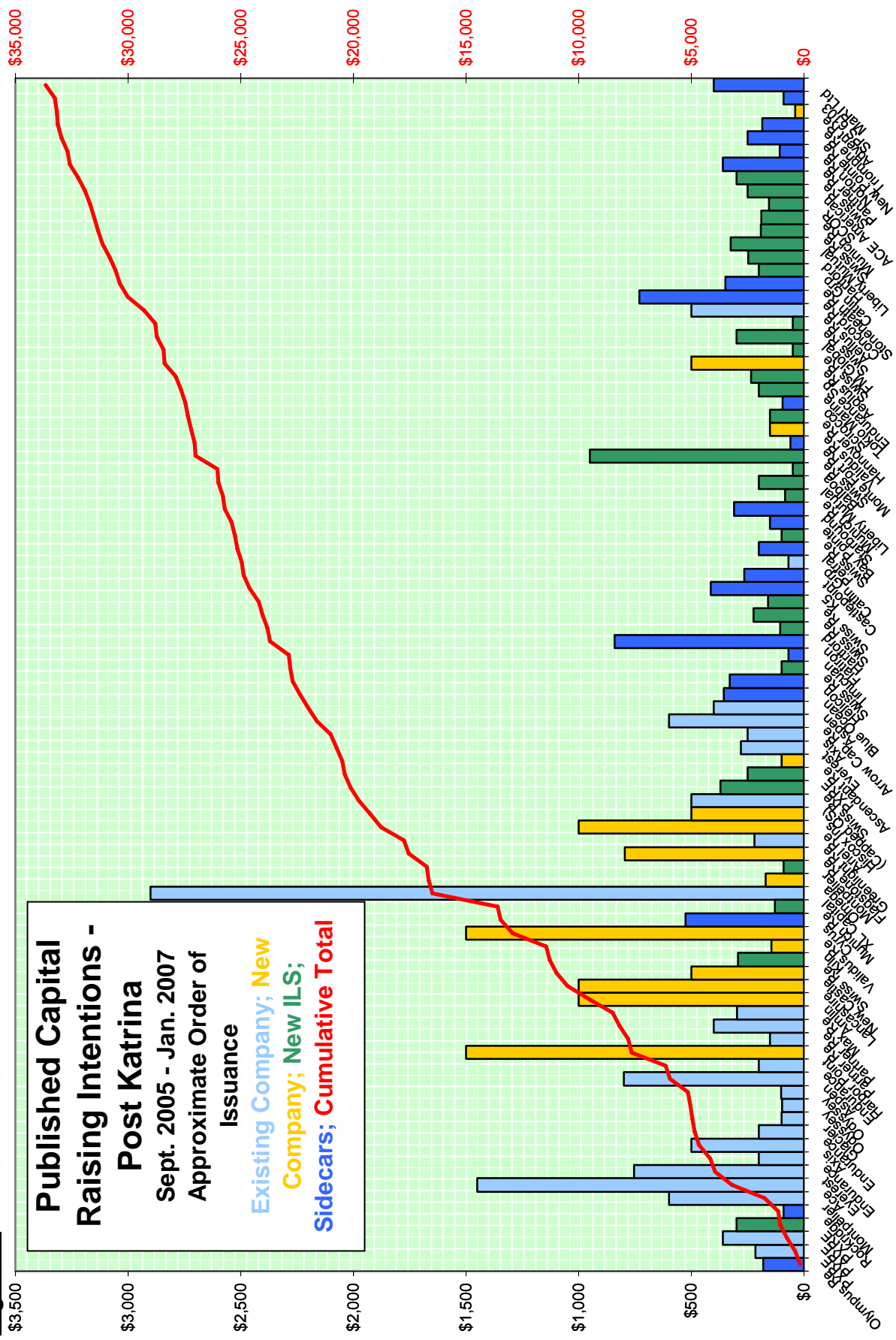
Company	Type	Existing Companies	New Companies	ILS	Sidecar	CUMULATIVE TOTAL
Olympus Re	Sidecar				180	180
PXRE	Existing	215				395
PXRE	Existing	359				754
PXRE	ILS			300		1,054
Rockridge	Sidecar				91	1,145
Montpellier	Existing	600				1,745
Ace	Existing	1,450				3,195
Everest	Existing	755				3,950
Endurance	Existing	200				4,150
Axis	Existing	500				4,650
Endurance	Existing	200				4,850
Glacier	Existing	100				4,950
Odyssey	Existing	97				5,047
Odyssey	Existing	102				5,149
Aspen	Existing	800				5,949
Endurance	Existing	200				6,149
Harbor Point	New		1,500			7,649
Partner Re	Existing	150				7,799
Partner Re	Existing	400				8,199
Max Re	Existing	297				8,496
Amlin	New		1,000			9,496
Lancashire	New		1,000			10,496
New Castle	New		500			10,996
Swiss Re	ILS			294		11,290
Kilin	New		145			11,435
Validus Re	New		1,500			12,935
Cyrus	Sidecar				525	13,460
Munich Re	ILS			130		13,590
XL Capital	Existing	2,900				16,490
Omega	New		170			16,660
Montpellier	ILS			90		16,750
Flagstone Re	New		795			17,545
Greenlight Re	New	220				17,765
Ariel Re	New		1,000			18,765
Hiscox Ins.	New		500			19,265
(Capped QS)	Existing	500				19,765
Swiss Re	ILS			370		20,135
PXRE	ILS			250		20,385
Ascendant Re	New		100			20,485
Everest	Existing	280				20,765
Axis	Existing	250				21,015
Arrow Cap. Re	Existing	600				21,615
Aspen	Existing	400				22,015
Blue Ocean	Sidecar				355	22,370
Helicon	Sidecar				330	22,700
Swiss Re	ILS			100		22,800

Continued in next panel.

Announced Capital Raising Intentions Post-Katrina, Rita and Wilma (Continued)
(in approximate announcement date order, USD millions)

Company	Type	Existing Companies	New Companies	ILS	Sidecar	CUMULATIVE TOTAL
Timicuan	Sidecar				70	22,870
Flatiron	Sidecar				840	23,710
Hartford	ILS			105		23,815
Swiss Re	ILS			225		24,040
Swiss Re	ILS			160		24,200
K5	Sidecar				414	24,614
Castlepoint	Sidecar				265	24,879
Catlin Grp	Existing	70				24,949
Petral	Sidecar				200	25,149
Swiss Re	ILS			100		25,249
Bay Pointe	Sidecar				150	25,399
Starbound	Sidecar				311	25,710
Munich Re	ILS			85		25,795
Liberty Mutual	ILS			200		25,995
Balboa	ILS			50		26,045
Swiss Re	ILS			950		26,995
Monte Fort Re	Sidecar				60	27,055
Validus Re	New	150				27,205
Hannover Re	ILS			150		27,355
Scirocco	Sidecar				95	27,450
Tokio Marine	ILS			200		27,650
Endurance Sp	ILS			235		27,885
Aeolus Re	New		500			28,385
Swiss Re	ILS			50		28,435
FM Global	ILS			300		28,735
Swiss Re	ILS			50		28,785
Aellus Re	Existing	500				29,285
Concord Re	Sidecar				730	30,015
Stoneheath Re	Sidecar				350	30,365
Catlin Grp	ILS			200		30,565
Hartford	ILS			247		30,812
Liberty Mutual	ILS			325		31,137
Swiss Re	ILS			192		31,329
Munich Re	ILS			190		31,519
SCOR	ILS			155		31,674
ACE American	ILS			250		31,924
Swiss Re	ILS			300		32,224
Panther Re	Sidecar				360	32,584
Norton Re	Sidecar				108	32,692
New Pointe Re	Sidecar			200	250	32,942
Triomphe Re	Sidecar				185	33,127
Advent Re	New	38				33,165
SPS 6103	Sidecar				90	33,255
MaRI Ltd	Sidecar				400	33,655
Industry Total		12145	8,898	6,253	6,359	33,655
Number of Companies		25	14	29	22	90

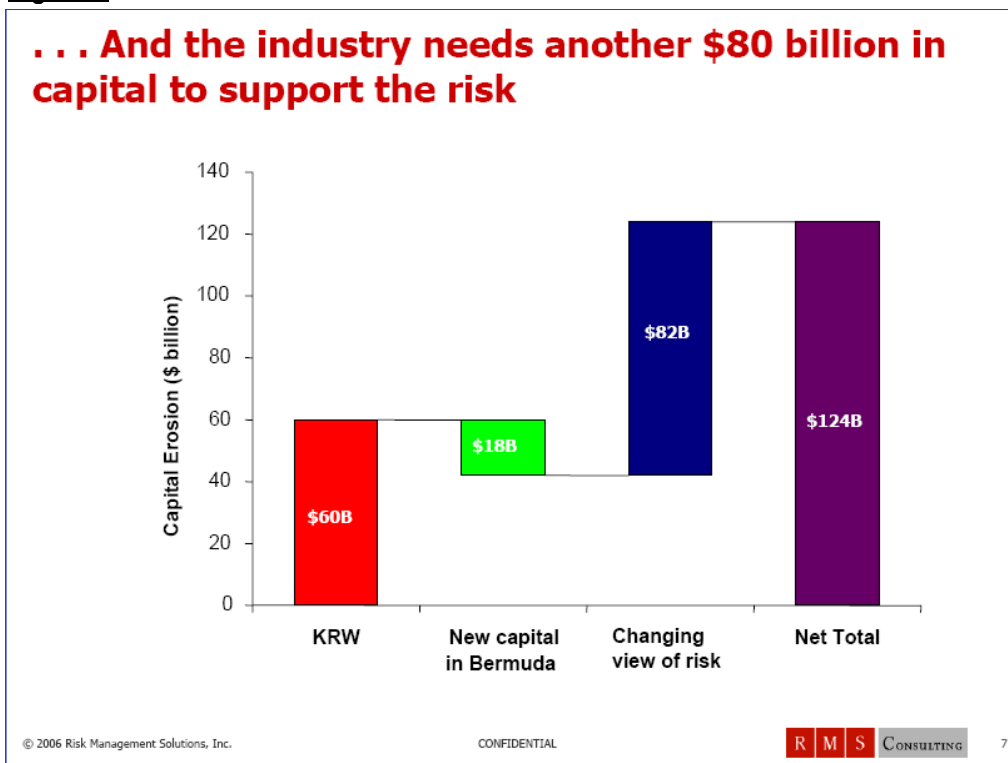
Figure 2



Reinsurance Capital Requirements 2007

The losses from hurricanes Katrina, Rita and Wilma (a.k.a. KRW) in the fall of 2005 are now estimated to be in excess of \$56.5² billion. Those losses, in conjunction with others, caused losses for the whole of 2005 to exceed \$86.5³ billion, a record. It is that loss that caused the first demand for replacement reinsurance capital. However, the magnitude and apparent increased frequency of the individual event losses from storms such as Katrina caused a, now well-documented, consequential demand for even more capital. In particular, the modeling agencies (Eqecat, RMS and AIRWorldwide) all revised their model risk probabilities to substantially higher levels. Furthermore, the rating agencies (Standard and Poors, Moodys and Fitch) upped their requirements for the amount of capital necessary for awarding a particular rating.

Figure 3



Thus there is a generally accepted view that the industry needed to replace substantially more than the \$86.5 billion of measurable loss. How much more has been a matter of debate, and continues to be so. At the Bond Market

² PCS Updates for Dec. 8, 2006 and Jan. 27, 2007.

³ Sigma reported \$83 billion in its spring 2006 Report, i.e., prior to the latest PCS updates.

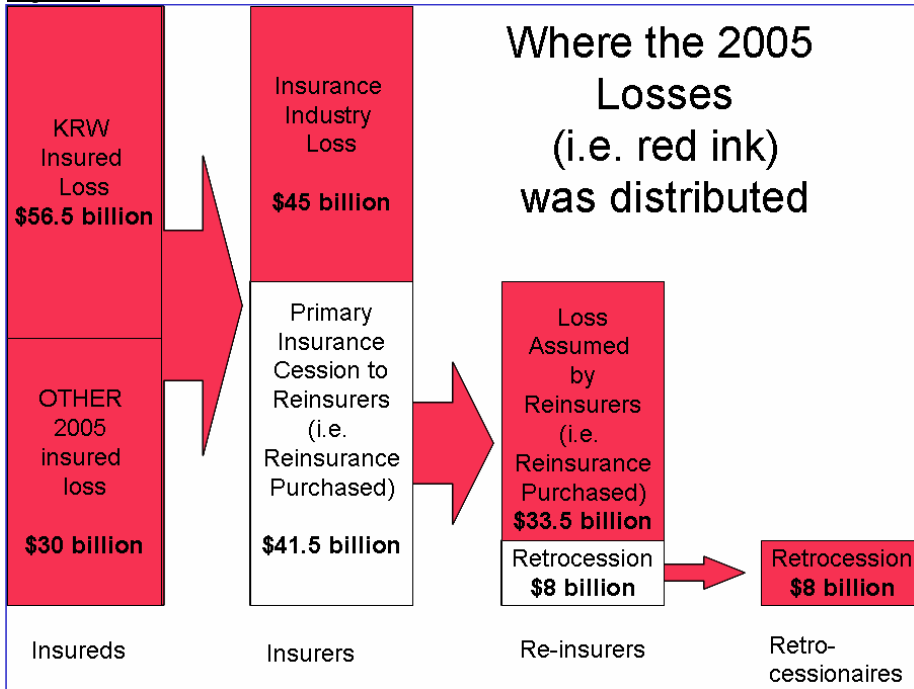
Association Conference in June of 2006, one company, RMS, assessed the situation in the graphic (Figure 3) to be something like the following: a then-estimated loss of \$60 billion, offset by some \$18 billion of new capital but added to by another \$82 billion because of “the changing view of risk”, i.e., model company and rating agency actions. All of which implied a need of some \$124 billion of total new capital. RMS itself would revise those figures with hindsight and many would pay more attention to where the required capital would be raised, but surely no one would quarrel with the spirit of the requirement. And the bottom line is that there was huge demand for new capital. For rough purposes we can say that the gross demand for new capital was double the observed 2005 loss.

There is also debate about where the losses were distributed and where the required capital would need to be raised. At the Insider

Briefing in London, September 2006, Guy Carpenter suggested that the 2005 losses fell almost equally on the insurance industry and the reinsurance industry. Thus the \$86.5 plus billion of 2005 losses were absorbed 52% by insurers and 48% by reinsurers. Some of the reinsurer losses were further passed along to retrocessionaires, maybe as much as \$8-\$10 billion. Figure 4 illustrates the chain of measurable losses. Lumping reinsurance and retrocession losses together, since much of the retro industry was wiped out, we can say

that the measurable need for reinsurance capital is approximately \$41.5 billion. Using the rule of “double the measurable losses” we get to a full capital replacement need of \$83 billion. Since the \$0.5 billion conveys a false degree of precision we’ll call the need \$80 billion, and wouldn’t argue to \$10 billion either side of that.

Figure 4



Then again, industry exposure is increasing due to population growth and due to the tendency of populations to move to exposed coastal areas. Some suggest it is growing at close to 8-10% per year. So by rights there is a need for growth capital as well as replacement capital, thereby increasing the calculated need. On the other hand, it can be argued that the loss replacement arguments are exaggerated because they make no allowance for “expected losses” each year. The losses in 2005 might well equal \$86.5 billion as we have supposed. However, some of that loss was expected, because the industry writes to a combined ratio of say 70-90% for property catastrophe risk and some would be paid by premiums. Thus only the loss above that amount should be calculated as needed capital replacement. For the purposes here, we boldly assert that the needed growth capital cancels out the expected net loss component.

Sources of Capital Replacement

Just as there is an observable and a judgmental component in the estimation of capital need, there is a measurable and judgmental component to the sources of capital. We can observe the amount of capital raised in public markets, but we cannot always gauge the exact amount of capital raised by increased retention, by improved risk management, by

retained profit or by tax credits. Accountants may get insights into some of these components, but we humbly restrict most of our attention to the measurable.

Guy Carpenter⁴ estimates that program retentions in 2006 increased 40% over 2005. Of course, this does not tell us that purchasers will want to keep up that higher level of retention going forward, but it does show that some part of our needed \$80 billion in 2006 was not needed in the reinsurance industry. It was retained by the reinsureds, perhaps shifting the capital need to the insurance industry.

The other principal source of capital replacement that is not observable ex ante is profit from

higher premiums. Premiums were substantially higher in 2006 but one could not know what the level of losses would be in advance. We now know that losses in 2006 were particularly low. PCS estimates that US losses were \$9 billion and they were not substantial outside of the US. In short, an important source of capital replacement has been 2006 underwriting profit.

Of course, the most observable source of capital is what is raised in the public markets and the quasi-public markets. Here we can be more confident of the amounts raised. Figure 2 and Table 1 capture the story. The first entities to realize the need for capital were the existing property catastrophe reinsurers. They raised nearly \$11 billion in capital in the last quarter of 2005 and another \$1 billion since. Some part of that was in debt but the substantial part was equity capital. In all some 25 companies raised new equity capital.

The other component of direct industry capital is the amount raised by new companies. Since Katrina some 14 new companies have started, raising nearly \$10 billion in equity. Most of this was done privately, but already some companies have tapped the public IPO market. Lancashire did this almost immediately, but

⁴ World Insurance Report 2006, Guy Carpenter & Co. Inc.

others such as Validus and Greenlight have recently announced their intentions of going IPO.

The combined amount of observable equity capital raised and profits generated in 2006 go a long way to replenishing the observed losses in 2005 - remember the reinsurance industry loss was \$41.5 billion - but does not fill it completely.

Hybrid Capital

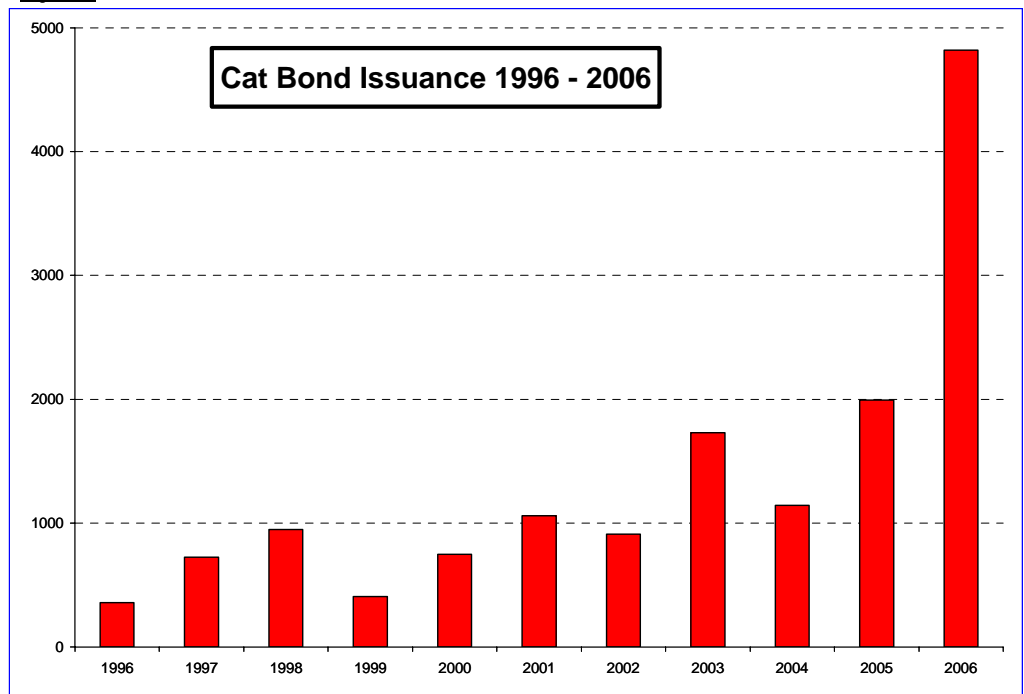
One of our assertions about the way the unregulated

reinsurance industry has responded to the need for new capital is that it is innovative as well as responsive. This was amply demonstrated during 2006 with a raft of issues of insurance linked notes (a.k.a. Cat Bonds) and the huge number of "sidecars". In total, 29 cat bonds and 22 sidecars have been issued in the past 15 months for totals of a little over \$6.2 billion of cat bonds and \$6.3 billion of sidecars.

The insurance linked note market has been growing over the last 10 years - but it exploded in 2006 as can be seen from the issuance statistics embedded in Figure 5. Several of the notes were issued by first time issuers, and for first time perils. These included Mexico, Australian and Gulf of Mexico exposures and new syndicate issuers (Hiscox). There was also a new structure (Bay Haven) which claims to be the first ILS CDO. Many more details will be given about this year's issuance in our annual review; our purpose here is to quantify the capital contribution they make to the reinsurance industry.

We will also defer more detailed comments on sidecars to our companion piece to this article, "*Of Sidecars and Such*", however it is clear from the context here that sidecars made a major contribution to reinsurance replacement capital in 2006. Essentially, sidecars are single purpose, or special purpose, class 3 Bermuda reinsurance companies set up for the purpose of taking a quota share of some cedant company.

Figure 5

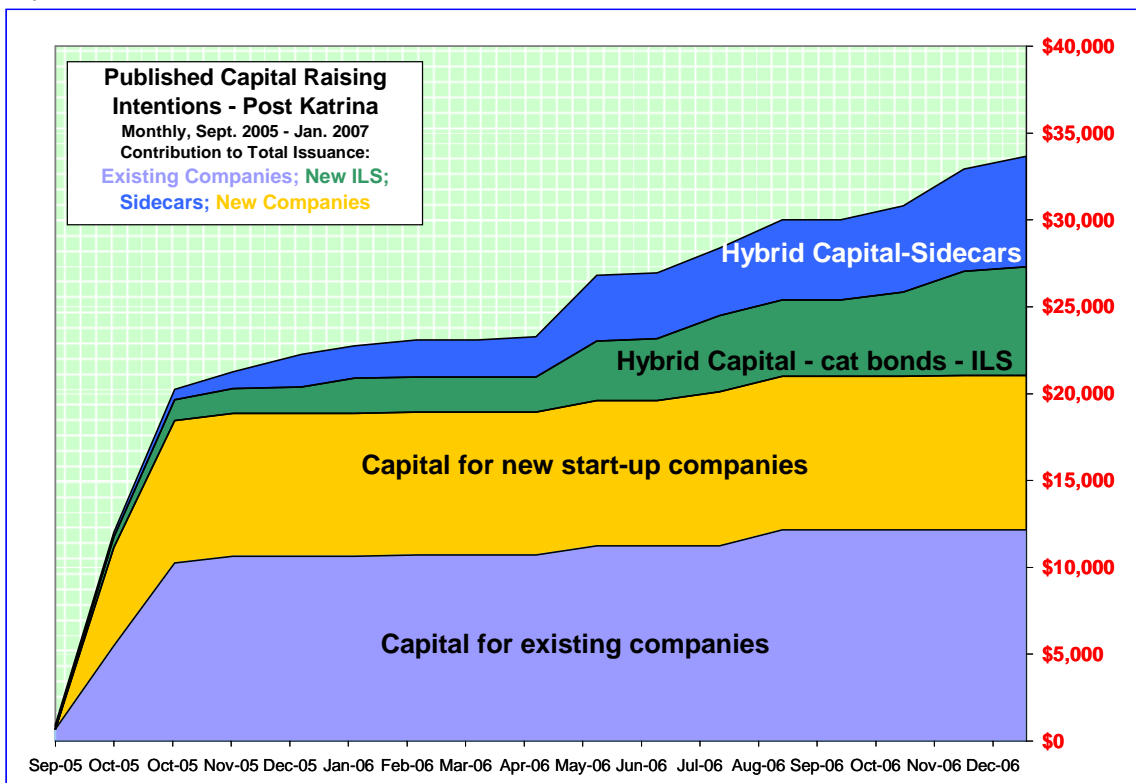


The quota share is not a pure share since the exposure assumed is capped by the amount of capital in the sidecar, any tail exposure reverting to the cedant. During 2006 the word sidecar was spawned and was adopted immediately as a non-insurance way of describing the fact that investors rode alongside the parent underwriter in some fashion. The ceding underwriter received a management and performance fee for his services, but perhaps more important he had extra capital to absorb bigger lines or more business than without the sidecar.

One could argue that the advent and enthusiastic adoption of the sidecar was not just because of a capital shortage, but that there was also a labor, or talent, shortage as well. A.M. Best advised early in the fall of 2005 that it would not easily rate new companies who did not have adequately experienced staff and resources in Bermuda. At that time the labor shortage was acute as was Bermuda real estate. So an eager reinsurance investor, who did not want the legacy issues associated with investing in an existing company, was restricted in his ability to start a new "clean sheet" company. An elegant solution was to invest, not in an existing company, but alongside it, in a sidecar. The sidecar would not produce a "multiple expansion" that a new company might, but at least it would capture the pure underwriting return, should there be any.

All told, the ILS contribution and the sidecar contribution add some \$12.5 billion of new hybrid capital to the industry. As the pie chart (Figure 1) shows, this is about 30% of total capital added.

Figure 6



Replacement Capital Process Complete?

We calculated the need for new reinsurance capital at \$80 billion, based on the observed loss of \$41.5 billion and a “double” factor for shifts in risk perception and ratings requirements. The above charts and graphs detail some \$35 billion of capital and hybrid capital. To this we would say that there are other unknown, or private, capital contributors, maybe even as much as \$5 billion worth to pick a round number. This private capital is undocumented, so \$5 billion is just a guess and may be high. However, on the theory that we only observe the tip of the iceberg it seems reasonable. What is observed is the registration of new Class 3 reinsurers in Bermuda, recently including Steamboat Re⁵ and D E Shaw Re, joining the likes of Cig Re and Pulsar who will be writing collateralized

⁵ In the interests of full disclosure, I serve as a director of Steamboat Re.

reinsurance. Some commentators have referred to such entities, somewhat inelegantly, as “unicycles” conveying the idea that they will be providing their own underwriting expertise on a collateralized basis. Another source of private

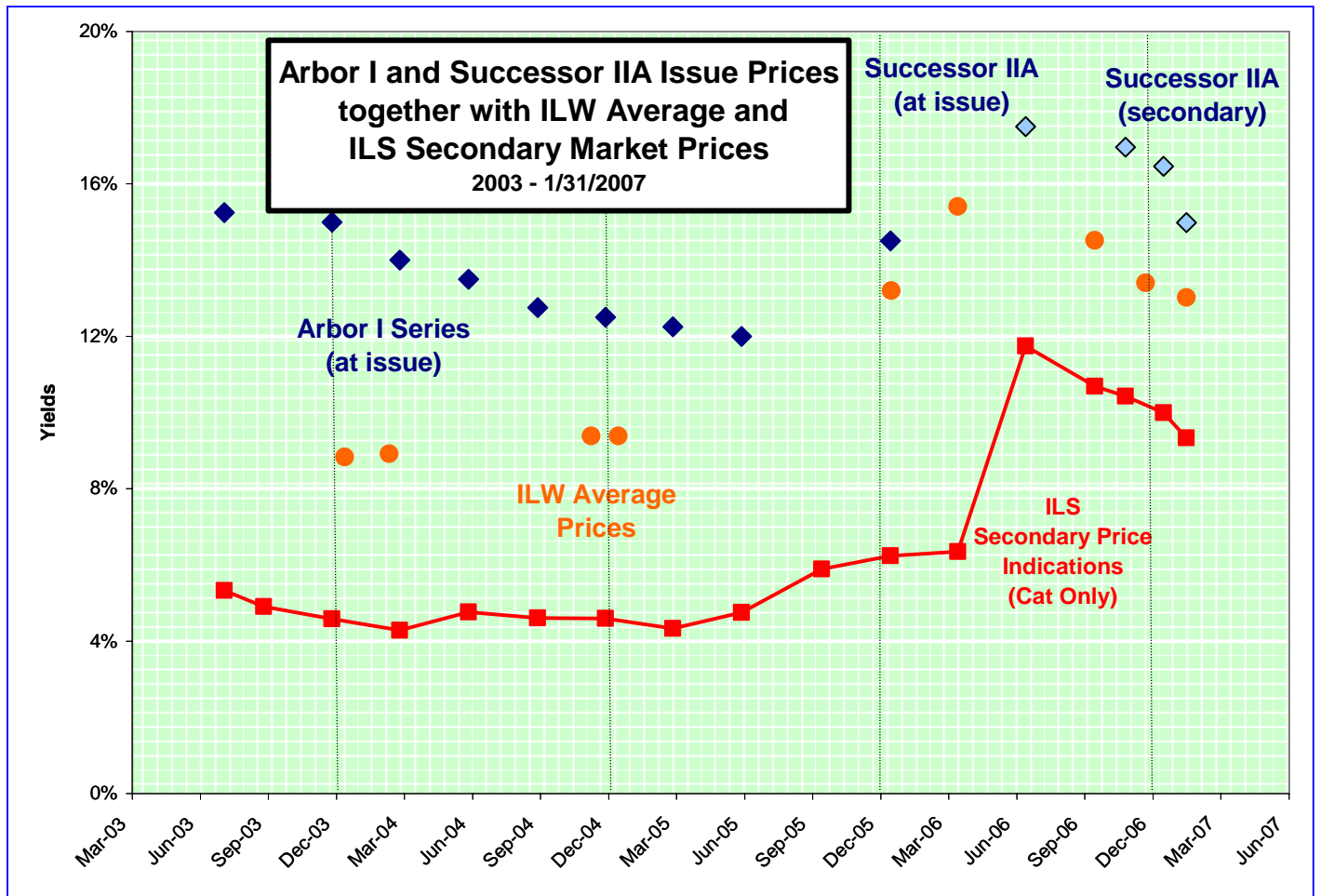
capital is the amount of new money that went into existing dedicated reinsurance hedge funds with the likes of Nephila, Fermat and Coriolis. Altogether, \$5 billion is not out of the ball park.

So, bottom line, the observed loss of capital seems to have been replenished. Question is, is the perceived risk component of the capital need also filled? While we cannot be sure,

our considered answer is, substantially yes. It has come from tax write offs, from increased retention, from improved risk management systems and most significantly perhaps the profits of 2006. As long as losses during 2007 are low or remain within anticipated bounds, additional new capital is not needed. Furthermore, we believe additional capital will begin to depress premiums. We believe that has already begun, and offer an updated version of our recent price chart (Figure 7). All show the peaking in June of 2006, a seasonal correction thereafter and then a gentle softening. What is clear is that prices were drifting lower by natural forces without the heavy ram-down effect of the recent regulations. Capital allocation will be distorted rather than efficiently distributed as a result.

Events such as hurricane Kyrill in Europe will slow any price decline, especially if losses are closer to \$10 billion than \$5 billion, the range of AIR’s initial estimate. Events such as the actions of the Florida regulator will push rates lower.

Figure 7



Essentially, they are injecting new subsidized capital at below market rates with the backing of citizen taxpayers. Question, will rating agencies give as much credit for Citizens reinsurance as from a collateralized reinsurer? Citizens was under funded in 2004 and 2005 and required assessments.⁶ Is a doubling of their capacity warranted? Whatever the case, even though much of the capacity will go to insurers, it will also affect reinsurance.

The odds are that 2007 losses will be neither as low as 2006, nor as high as 2005. That being the case reinsurance markets will remain adequately capitalized for the next year or so. ❄

⁶ Initially, Citizens was supposed to have been exclusively supported by insurance assessment. An assessment of 6.8% was enacted in 2004. The small assessment for 2005 of 1.2% was supplemented by a transfer from Florida's general revenues - putting to rest any idea that the taxpayer was not involved - together with a long term borrowing.