

That was the Year that was! The 2007 Review of the Insurance Securitization Market

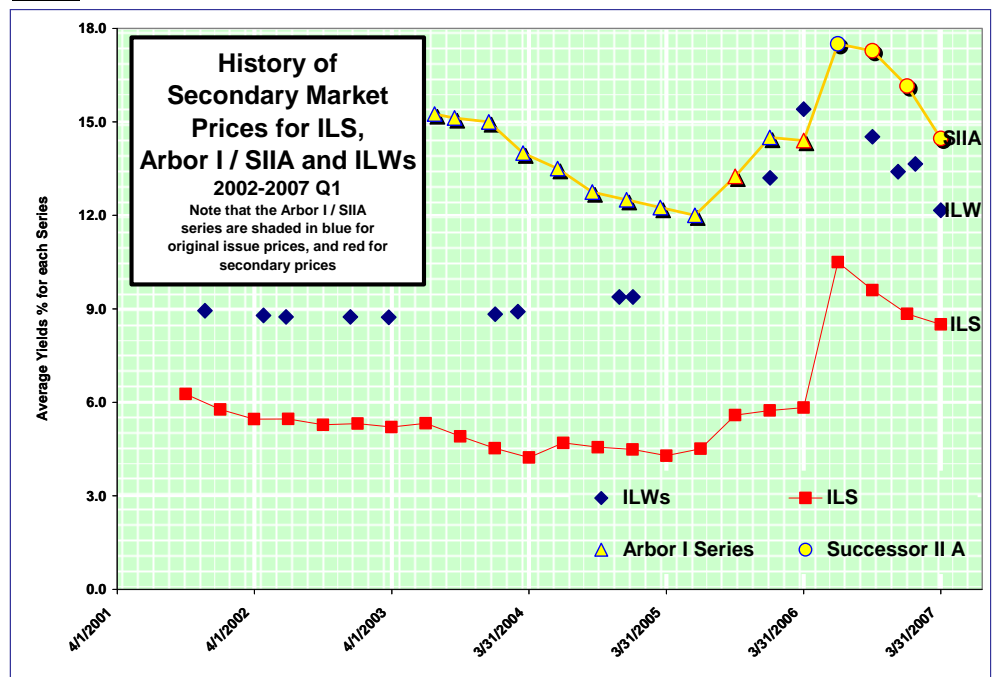
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The past 18 months of frenetic activity in the Insurance-Linked Securities (ILS) market seems to have come to an end. One is tempted to ask, is that all there is?

Is this a halt, or a pause that refreshes? The precipitating causes of the 2006 rush of activity were the losses from Katrina, Wilma and Rita. The end seems to have been precipitated by a) the absence of significant 2006 losses, b) the restoration of capital¹ equilibrium and finally, c) the actions of the state of Florida to abandon private markets and to nationalize (is that the correct word for state level application?) catastrophe risk. The first two of these reasons are to be expected, the last is a bit of a shock to the reinsurance body politic. And, worse, it may have been entirely unnecessary. Politicians were stampeded to action by high insurance prices within the state during 2006. However, a look at the chart

reproduced here as Figure 1 shows quite clearly that prices peaked in July last year and have been declining ever since. With another loss free year they show every prospect of a return to pre-Katrina levels. But if there is another violent year,

Figure 1



why should they? It will reflect a new reality, as subsidizing Florida taxpayers will no doubt learn to their cost.

Figure 1 shows month-to-month price shifts, but the longer view is shown in price shifts since 1985 in Figure 2. It also tells a story that

¹ See *Recapitalizing Reinsurance - a never ending story*, Lane Financial LLC, January 2007.

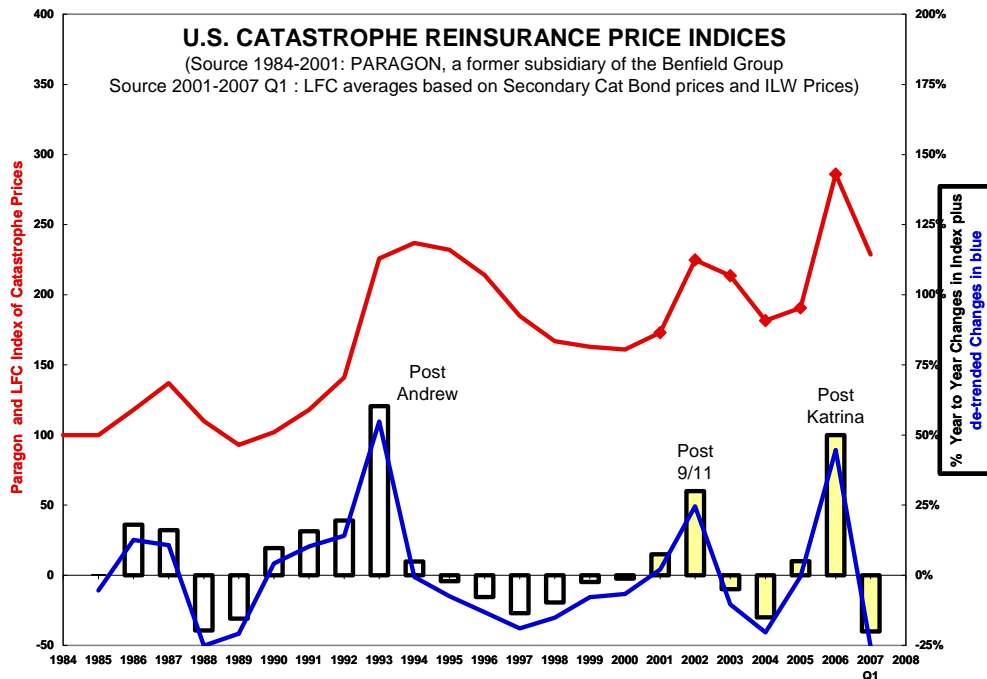
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seems to be worth reflecting on. The gap between peak prices and their subsequent softening is getting shorter. It lasted several years after Andrew, a couple of years after 9/11 and seems to have corrected in one year post Katrina. Now, to be sure, some of this is due to the magnitude of losses in years immediately following large events, but some of it is also due to the ease of

stimulate more such solutions, freely entered into by risk takers rather than by enforced subsidies from ill informed taxpayers. Our review may serve as a record of what is possible in that direction. The paper reviews the 2007 deals, the price trends and the secondary market activity. The Appendix records some important statistics and case studies.

Figure 2



Transaction Overview

Aside from the sheer volume of ILS issued last year - \$5.6 billion - there are several features of last year's activity that are worthy of special comment. First and foremost nearly 30% of last year's ILS were from first time issuers. This is testament to the vitality of the market. It's not just the same issuers. The first time issuers included Catlin, Dominion Resources, Liberty Mutual, Endurance and Balboa.

entry of new capital from the capital markets. ILS and sidecars² are part of this new entry mechanism and this annual review details the ILS market's astonishing activity and innovation over the past twelve months (April 2006 -March 2007)³. \$5.6 billion of new ILS were issued, representing almost one-half of the hybrid capital (ILS and sidecars) raised post Katrina. That \$5.6 billion represents a 30% growth over last year; however, if only cat bonds are considered, the year-to-year increase is an impressive 87%. Moreover, this capital has a limited life-span (maturity) that can disappear if it is not needed, unlike equity capital which has to be permanently serviced. Hybrid capital is one reason the cycle is shorter. Florida residents should want more ILS not less. State regulators would do well to

A second notable phenomenon was the fact that 70% of the issues came from "programs". A few years back we identified the beginnings of shelf registrations, wherein an issuer sought approval for issuance of more than he presently required, under a medium term note program, in order to be ready to respond to changing circumstances. Tracking those programs became a good indicator of potential pipeline supply. As of the present the available amount of pre-approved programs is several multiples of current outstanding. We will see many more ILS when circumstances require.

Third, as previously observed this is more than a "cat bond" game, cat bond being the popular name for deals that are exposed to pure natural catastrophes. That is why the term insurance linked securities (ILS) is used. In 2007, 20% of ILS were deals that exposed the investor to extreme mortality. The actual total of pure cat bonds was \$4.4 billion. Further, new perils such as winds in the Gulf of Mexico, earthquakes in

² See *Sidecars and Such*, Lane Financial LLC, January 2007

³ The LFC Review papers are 1st Quarter to 1st Quarter annual periods.

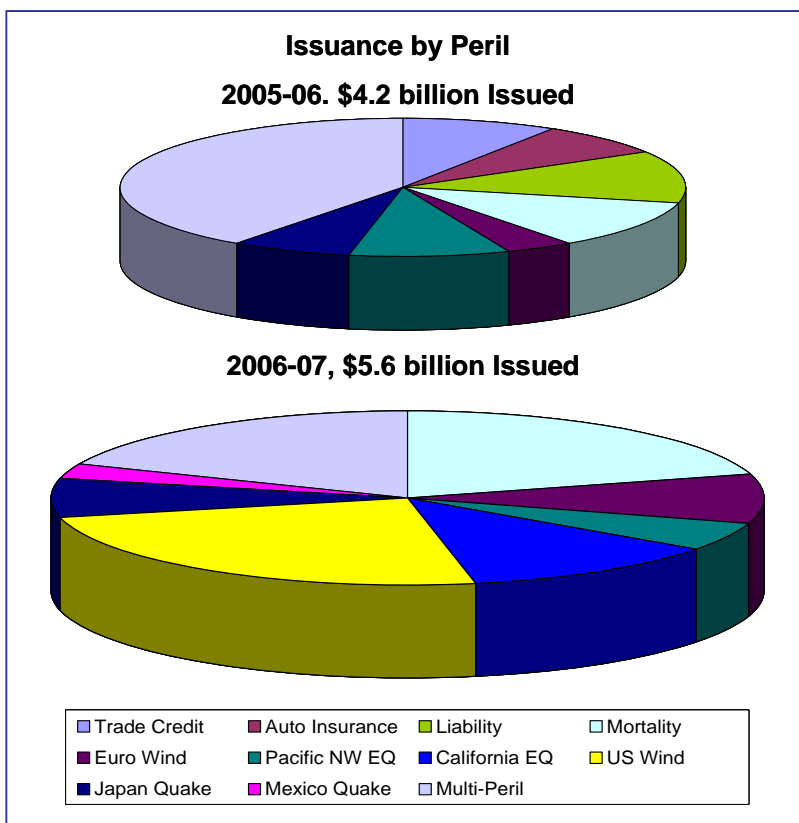
Mexico and winds in Australia provided an expansion of the peril set that investors were able to put in their portfolio.

Fourth, a significant amount of ILS matured in 2007. The new issue total included replacement of maturing issues as well as new amounts of exposure. As of the end of the first quarter of 2007 the amount outstanding in the capital markets was \$8 billion for cat bonds and in excess of \$10 billion for all ILS. The average maturity of these issues is now around three years. Significantly, had that amount been put into the traditional reinsurance markets, it would have been in the form of traditional annual coverage. Part and parcel of annual issuance is an insurance brokerage fee each year. That calculation has to be set against the investment banking fees charged to issue ILS. And given the comments above, there is considerable saving on legal fees through “program” issuance. Therefore, on balance we would contend that the placement of ILS has saved the issuers several hundred basis points. It is a more efficient market, cynics notwithstanding.

A fifth significant highlight of 2007 was its adaptability. Katrina had caused a great deal of loss and a great deal of statistical-model soul searching. Had the models been sufficiently accurate in allowing for a storm of Katrina’s intensity? The upshot was an extensive model revision by all three modeling companies during 2006. That is, by AIRWorldwide, EQECAT and RMS. They all adopted a similar convention to capture their re-evaluation of the risk – they produced long term probabilities and introduced short term (or sensitivity) probabilities for certain risks and let the investors choose which to believe. The reason short term probabilities are given is because of either higher sea surface temperatures or because of the phenomenon of a decadal Atlantic Oscillation. Naturally, investors gravitate to the more conservative (short term) figures for their evaluation, as do we in our analysis, but both numbers are presented in Tables 1 (Long Term) and 2 (Short Term) in the Appendix.

Finally, in this overview it is worth noting that despite the popularity of multi-peril deals in recent years (they represented 45% of the deals in our 2006 analysis), they dropped to under 20% in the current analysis. In our 2006 analysis nearly all the exposure due to US wind was captured in the multi-peril bonds. This year, the biggest single peril demand was for US wind coverage with some \$1.4 billion issued. Combined with the wind embedded in multi-peril bonds, almost half the exposure was for US wind, perhaps not an unexpected result in the year following Katrina. See Figure 3 for details.

Figure 3



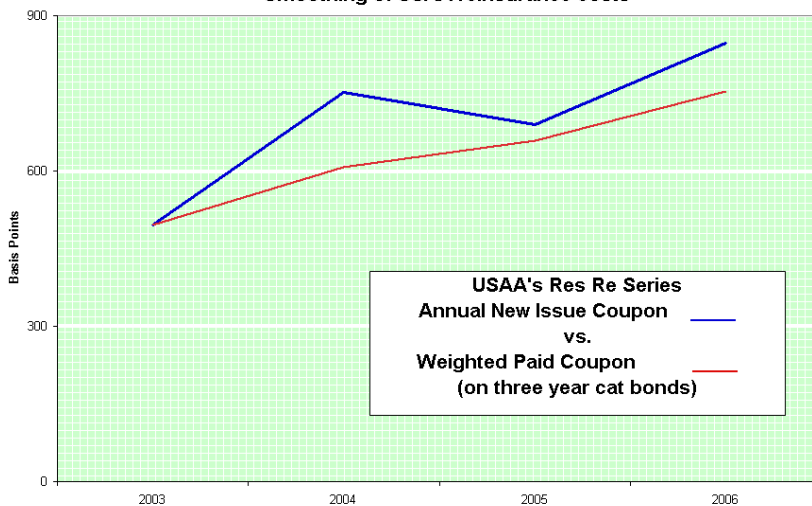
The Deals

Residential Re

Last year was the tenth issuance of Residential Re transactions from USAA. We focus on all of them in the Appendix, as they represent an almost perfect case study of ILS issuance. In recent years USAA has been sponsoring transactions with increasing probability of occurrence, as Figure 1, Appendix, shows. This year they reversed course and took more remote coverage from the capital markets. They

originally proposed a four tranche transaction, with some confusing labeling, but ended up only issuing two tranches and only for a total amount of \$122.5 million. Residential Re represents one of the persistent issuers of indemnity cat bonds. Figure 2, Appendix, shows how much indemnity issuance has dropped as a fraction of total issuance since the mid-nineties. It is not popular. This is especially true following the loss from Kamp in 2005. It appears that the capital markets put a premium on Res Re, and USAA responded by choosing not to pay that premium. Of course, that is part of the intelligent strategy. Get your coverage from both the traditional and capital markets and favor the one with the better deal.

Figure 4 Smoothing of USAA reinsurance costs



It is worth noting that the other benefit that USAA gets from their overlapping three year coverages is a smoothing of reinsurance costs. Figure 4 captures the effect of its issuance strategy. It did not feel the full brunt of the peak in premiums in 2006 simply because any such effect is ameliorated by their selection and is amortized over three years.

CAT-Mex Ltd.

FONDEN, an agency of the government of Mexico⁴, is the first “insured” to issue a cat bond in several years. It is also the first sovereign government to issue a cat bond. And, it introduced the investor market to a new cat bond

⁴ In the interests of full disclosure, Lane Financial LLC acted as advisor to the Ministry of Finance in the CAT-Mex transaction.

peril – Mexican earthquake. Evidently, the market appreciated the diversification benefits, paying up so that FONDEN got an incredibly good price.

The transaction was issued via the auspices of Swiss Re Capital Markets and Deutsche Bank Securities. Mexico required coverage for three areas (boxes) of earthquake exposure. They also wanted instant liquidity of payment in the event of a loss. A parametric trigger was designed based upon the epicenter of an offending earthquake and its depth. Verification of an eligible event will be very quick and payout, fully funded in a special purpose vehicle, will be immediate.

The entire transaction included a corresponding cover in the traditional market, actually twice as much as the cat bond. This is an interesting role that Swiss Re Capital Markets has also filled elsewhere. It places itself between the issuer and the capital markets. Sometimes that position is exactly matched as in the CAT-Mex case, and sometimes they take a basis risk.

CAT-Mex will undoubtedly prove to be a harbinger for other government sponsored cat bonds. The World Bank is currently working on coverage for the wind and earthquake exposure of the governments of the Caribbean⁵ basin. The Bank aggregates the risk of several governments and while this placement may well be in the traditional markets, it is parametric and there is no doubt that this and other exposures will be placed in the capital markets in the future.

Australis II

Another bond which brought a rare peril to the capital markets as it did originally in 2006 was Australis Re. The peril was Australian wind – typhoons – and Australian earthquake. The markets responded in similar fashion to the way it did to Cat-Mex, again according it a very aggressive price. Some cat bond investors will pay up for diversification especially in the highly rated universe. That same motivation does not

⁵ Lane Financial LLC also acts as consultant to the World Bank on this transaction.

extend to all hedge fund participants, especially for lower rated risks.

Drewcat Capital

The third new peril bond, and new issuer, was Drewcat. The insured was Dominion Resources with considerable exposure in the Gulf of Mexico. Lehman Bros was the investment banker. In 2005, companies with drilling rigs and pipelines in the Gulf lost an awful lot of money to Katrina, Rita and Wilma. It was unexpected (i.e. not priced in) and just as elsewhere marine coverage cost rocketed. The capital markets were explored. Several private deals were done but only two surfaced in the semi-public ILS markets. These were Grand Isle and Drewcat. They were not as successful as the private deals. Nor, it must be said, as the sidecar Petrel Re sponsored by Validus. Despite the fact that it was a new risk with a high premium, and despite the fact that both Grand Isle and Drewcat were parametric deals, they did not do well. In the end only \$50 million of the Drewcat deal was sold.

The coverage in Drewcat was for three boxes in critical locations in the Gulf and loss was to be determined by the incidence of high recorded wind speeds in the boxes. Any of the boxes could exhaust the limit, but the maximum loss would be the determinant in partial loss situations. EQECAT provided the modeled expected loss, and there is some reason to think that investors were suspicious of any new models for the Gulf. More likely was the fact that the Gulf wind risk was seen as an accumulating risk rather than a diversifying risk. Accordingly, the price was high. However, it was not as high as the casual observer might believe looking at the details in Table 2, Appendix, i.e., a 20.5 % coupon for an expected loss of 1.54%. Remember, the deal was for less than twelve months although the expected loss was for the season. The actual rate on line paid would be the seven months of premium, accrued at the annual rate, divided by the expected loss – a multiple of 7.7, high but not out of line.

Mystic Re

Liberty Mutual joined the ranks of ILS issuers in the last 12 months. It also joined the

growing class of insurers using the market. Its initial program was for total issuance of \$750 million of which it has issued \$525 million in three tranches, the first A tranche in June and a subsequent issue of A and B tranches in December. All classes cover North East hurricane risk, and while this was not an entirely new peril for the ILS market it was a welcome reappearance. It was somewhat surprising, then, that it did not get lower premiums for scarcity value.

Eurus Ltd.

The peril covered in the Eurus cat bond was Euro wind in the UK and Europe. Eurus was issued by Hannover Re, not exactly a first time participant in the ILS market because of their long time presence in the sidecar market, however it may be the first formal cat bond by them. Hannover is clearly a company that has managed their capital very efficiently through the use of capital markets. Eurus investors suffered an early scare from the appearance of storm Kyril in northern Europe in January; the bond was put on ratings watch, but they are likely to survive that storm unscathed. The premium was 625 basis points on an expected loss 1.56%.

Cascadia II

FM Global issued their second cat bond for coverage of Pacific North West earthquake. It was one of the few deals that was not part of a program. Interestingly, the premium paid was 400 basis points for an expected loss of 0.76%. In their inaugural issue in 2005 the price was 300 basis points on an expected loss of 0.71%. This seems to be a case of unfortunate timing (August) in a tight market. One would normally expect rarer perils (Pacific North West quake) to enjoy a scarcity premium rather than the reverse.

Shackleton Re

Endurance Re became a first time issuer with Shackleton⁶ Re. Interestingly, Shackleton Re

⁶ The naming of Shackleton Re is interesting - Endurance was the ship that Shackleton used to begin his South Pole expedition. It met tragedy but

was issued in three tranches, only one of which, the A tranche, was as a cat bond. The other two tranches were described as "term loans". The term loans were to all intents and purposes identical to senior tranches of cat bonds, with expected loss measures and similarly priced premiums. Obviously, as loans they are not securities and do not have secondary markets, and are not quoted on any of the price sheets. In many respects these loans are similar to loans made in sidecar arrangements. The coverage in Shackleton A (the cat bond) is for California earthquake. The two loan tranches were for US wind and for second event of either wind or quake.

Redwood IX

Another of the regulars among cat bond issuers is the Redwood series. We are on the ninth one, although sometimes two issues have been made in the same year. All issues are associated with a layer of the California Earthquake Authority (CEA) but the CEA does not issue directly. This year, in something of a departure, Redwood IX is issued with 5 tranches. For tranches A, B, C, D and E the amounts raised were respectively, \$125 million, \$125 million, \$18 million, \$20 million and \$12 million. Evidently the issuer was tapping into and accommodating different risk appetites in the capital markets. Confusingly, perhaps, the junior tranche was the E tranche, but the most senior was the C tranche. In a further departure the index of loss will be calculated using USGS measures, making this deal a pure parametric deal. It is likely that some of these tranches and changes were designed to

Shackleton survived, with all hands, after incredible obstacles. It is a truly inspiring story. Unfortunately, the Endurance was crushed in the southern ice. We are sure that the naming of Endurance Re was intended to allude to the inspiring part, not the demise of the ship.

It reminds us of the story that Clem Dwyer used to tell about leading Marsh McLennan's first venture into the cat bond and ILS markets in the mid-1990's. He said he felt very excited, and described himself as like Magellan voyaging off to new worlds and the first global circumnavigation. It was only later, he said, he realized that Magellan did not make it, although his voyage was a success, an outcome that mirrored his own.

accommodate specific investors, a perfect example of how the capital markets can influence insurance structures rather than the reverse.

Lakeside Re

Munich Re made a return visit to the cat bond market two times in the last year. Their previous issue, Prime, was one of the largest of issues but it had matured in January 2004. Lakeside Re was issued to cover California earthquake risk for the next 3 years. Rated BB+ the bond paid 650 basis points over LIBOR and had an annual risk of 0.42%.

Carillon Re

Munich Re's second foray into the markets was a small program to cover US wind in the Gulf and East coast. Three tranches were issued. Two, A-2 and B, have already matured, having been issued only for the wind season. The A-2 tranche was a proportionate payout, the B tranche binary. Of note is that these two were issued on a discount basis, in the manner of US treasury securities with maturities less than one year, i.e., T-Bills vs. T-Notes. Thus, A-2 had a discount price of 90 and B had a discount price of 84 1/8th. Obviously the yield-equivalent price is higher than the complement of the price, 10% and 15 7/8ths respectively, because the investor put up less cash. The first bond Lane Financial LLC was involved with in 1996, Reliance Re I, was issued on a discount basis even though its term was longer than 12 months, but the practice has not been repeated until now. Actually, it is not just in Carillon that we have seen its reappearance. During 2006 most sidecars were funded only to the difference between the limit and the premium, and that was also true of certain private transactions as well. In part this may have been the result of some very high premiums where the consequence to the investor of putting up the full limit or the discount amount can be dramatic.

In the third tranche issued by Munich, the A-1 tranche, the term was for three years. It priced at 1000 basis points for an estimated expected loss of 1.79%. Intriguingly, Munich may not have been sure that they wanted the coverage for more than one season, perhaps at paid prices,

because they built in certain call⁷ provisions that would allow them to cancel early. The bond allowed for calls in September, December or March at call premiums of 7.5%, 5.0% and 2.5% respectively. All deadlines passed without call, perhaps indicating that while pricing may have softened it was not enough to compete with refinancing and call price.

Vasco Re

Balboa Insurance Company represents several smaller insurers; it is owned by Countrywide. Its inaugural ILS issue was named Vasco in honor of its sponsoring company's full namesake (Vasco Nunez de Balboa, who was the Spanish explorer first to stand on the eastern shore of the Pacific.) Balboa planned to issue three tranches to raise \$150 million covering Gulf and East coast wind. It chose to issue an indemnity bond and may have suffered, as did USAA, in that loss measure's unpopularity in the capital market. In the end, only \$50 million of one tranche was issued at a premium of 850 basis points on an expected loss 0.82%. Maybe like its namesake it failed to get the big prize. Vasco ended up beheaded, and naming of the Pacific fell to the aforementioned Magellan.

Fhu-Jin

Tokio Marine Insurance Company issued \$200 million of collateralized cover against wind risk in Japan under its Fhu-Jin program. Tokio Marine set the standard for parametric securitizations some 10 years ago with the eponymous Parametric Re for Japanese

⁷ The matter of call provisions cannot pass without some reference to Atlantic and Western II, PXRE's last issued cat bond. A&W II was based on a modeled portfolio that PXRE was obliged to service, even though if was effectively forced to exit the corresponding lines during 2006. In order to cancel and avoid the interest obligation PXRE had to pay a substantial call premium to cancel the bond. Investors were thereby somewhat compensated for early termination. It is likely that investors will want to insist on some call premiums in all bonds going forward, having experienced PXRE and before that, in 2004, the exit of Converium from covered lines. They are now sensitized to the possibility of issuer default or demise.

earthquake. Fhu-Jin now sets similar standards for Japanese wind. The payout is based on a parametric index that takes the average wind speed at 10 minute intervals from 900 metrological stations in Japan. Unlike some of this year's other parametric deals the price was a good one - 390 basis point on 1.24% expected loss.

Foundation II

Hartford Insurance started its second program last year, having done its inaugural issue in 2005. The second program was for up to \$750 million of which tranches A and G were issued for \$180 million and \$67.5 million, respectively. The A tranche covers Gulf and East coast wind on an occurrence basis. Tranche G, on the other hand, is an aggregate cover. It includes US wind and US earthquake as well as US tornado and hail. Evidently, Hartford has exposure all over the US including mid-west tornado - a risk not seen since the days of the CBoT indices. Anyway, the G tranche aggregates all PCS measures (customized for Hartford) counting all event losses greater than \$100 million and less than \$29.5 billion, provided no single event contributed more than \$150 million to the loss. One can deduce that Hartford has coverage on an event basis above \$30 billion, because these kick out of the G tranche.

Bay Haven Ltd.

Most cat bonds address coverage for the severity of a loss. It may be sliced into various layers and tranches but generally they will all be concerned with severity. Bay Haven is concerned with frequency instead. Of course, it is not entirely alone in considering frequency. Second event covers such as the (term loan) C tranche of Shackelton Re, or Atlas III, and also the aggregate cover Foundation II G tranche address some aspects of frequency. Bay Haven, on the other hand, specifically addresses large event severity. It specifies 7 large event definitions for US wind, Euro wind, Japan wind, and UK wind together with California quake, New Madrid quake and Japan quake. The definitions are such that the average annual probability of any one event occurring is around 4%, although it is heavily skewed by the US wind event (at \$18 ¾ billion

PCS measure) which is about 4 times that average. The coverage is for 6 events over a three year period excess the first 3 qualifying events. A binary payout is made for each eligible event. The coverage is then divided into a senior piece, the A tranche, the last 4 events, and a junior piece, for the 4th and 5th events. Obviously the size of the A tranche is twice that of the B tranche since all event payouts are of equal size.

Catlin is the sponsor and ABN AMRO the investment banker on this novel transaction. ABN AMRO says that this is not a cat bond but a CDO. The distinction is made to access a different class of ILS investors, namely CDO buyers. Each event is covered by a "Natural Cat Swap" such as those traded by Swiss Re Capital Markets or by Deutsche Bank. Also, the tranching is similar to credit CDOs that cover, say, the second default out of a portfolio of 10 credits. To us that seems an unnecessary distinction, but what this does underscore is the continuing convergence of insurance and capital markets not only in their form but their substance.

As a cover that depends on other preceding events we can also call this a contingent cover and they are worthy of some special comments. (We have made these before - see last year's Review). Contingent covers that do not have contingent payments run the risk of having severe mark-to-market downgrades as contingencies erode - see, e.g., what happened to Phoenix Quake Wind II. In Bay Haven the same is liable to happen. If, for example, Kyril had been a more devastating storm, the B tranche holders would be one event closer to the fire and the deal would be worth a lot less. ABN says that this "credit migration" can be orderly - and illustrates how in its marketing material - but that may be little comfort to a mark-to-market fund investor. To see further illustration of this effect follow the description of Avalon below. Avalon has still to suffer a loss but has been severely marked down. Avalon covers the frequency of excess liability claims, three excess of two in ABN speak.

The traditional reinsurance market handles these frequency covers differently - by making the payments contingent. This is done most notably in re-instatement provisions in ILWs or traditional covers. A re-instateable cover does not charge for the second event until the first has happened. A similar payment mechanism was

used in Lane Financial's 1998 optionable note⁸, Reliance III, the Allianz 1998 Gemini option with option payments rather than prepayments and the Converium Trinom transaction. The full on-risk payments are made only after the event risk deductible is eroded. To be sure, there is a credit risk but it is a manageable one. Most importantly, a two-stage or contingent payment, whether by option or not, avoids after-market security valuation. Calling it a cash flow CDO does not, we think, avoid the problem.

On the other hand, the disadvantages of mark-to-market can accrue to the sponsor of the deal if he has bought cover in derivative form, e.g., in swap form, as Catlin has done in Bay Haven. As deductible events occur, the mark-to-market price falls. This is a disadvantage to the investor but to the sponsor it represents a benefit - he sold something at \$100 that can be purchased at \$90. That will be taken into income, offsetting any perceived increase in the cost of protection. Over time, of course, if no further events occur the mark-to-market will rise again to par. This process can represent an income smoothing to the sponsor. Much more about these effects will be discussed in future papers but for the present review suffice it say that the effect will not occur if the sponsor has bought a reinsurance as opposed to a derivative cover. We will see this in the secondary market discussion of Avalon below. To get the benefit in this circumstance the sponsor will actually have to buy back the issued securities.

Atlas III

SCOR made its third visit to the ILS market with a €120 million issue covering second events from either Euro wind or Japanese quake. The coverage was for 3 years at a rate of 400 basis points over LIBOR. See comments in Bay Haven for the mark-to-market risks.

Calabash Re

Swiss Re Capital Markets is a registered broker dealer working on behalf of third parties

⁸ A description of the mechanics of this transaction is available on our web site - *The Optional Note: The Reliance III Case Study*. Feb 1, 1998.

as well as its parent's exposure. As such it competes with the likes of Goldman Sachs, Lehman Bros, BNP Paribas and other investment banks. Too often it gets confused in the public's perception that its role is purely for the benefit of Swiss Re. It does not get enough credit for its third party activity. Calabash may change that perception. It was issued by Swiss Re on behalf of ACE America, who one might otherwise expect to use a non insurance related investment banker.

Further influence of Swiss Re Capital Markets can be seen in the program it constructed for ACE America. The program is almost a mini version of the very successful Arbor or Successor programs, although it came out a little earlier than the full blown Successor. It contains five classes (A through E) and two levels of series. The classes are for US wind, California quake, Central and North West quake, US quake and finally, all of the above. The two series in each class are Series 1 on an occurrence basis and Series 2 on an aggregate basis. The loss measure is a modeled portfolio. In May, \$100 million of the A-1 series was issued. The modeled portfolio is heavily

modeled portfolio. Exactly similar classes were allowed but only for the occurrence series. On this occasion, \$100 million Class A, \$50 million Class D and \$100 million Class E were issued at prices of 840, 960 and 1090 basis points, respectively. The second program attached at a slightly lower level than the modeled portfolio in Calabash Re.

Successor

The biggest deal of the year and the biggest program was Swiss Re's Successor program. It was named no doubt for the fact that it succeeded the Pioneer and Arbor programs. In June 2006 many of those issues were maturing and so Swiss Re redesigned their program (they could have issued anew under their old programs) and used Successor to replace them. Approximately \$700 million of the old deals matured and this was replaced by nearly \$900 million of the new issue. Since June, new open window transactions in August and December have increased the outstanding of Successor to \$1.2 billion.

Table 1

Successor Coverages	Succ I Class A	Succ I Class B	Succ II Class A	Succ II Class B	Succ II Class C	Succ II Class D	Succ II Class E	Succ III Class A	Succ III Class B	Succ IV Class A	Succ IV Class B	Succ V Class A	Succ V Class B
Successor Hurr Ind Class A													
Successor Hurr Ind Class B													
Successor Hurr Ind Class C								X		X			
Successor Hurr Ind Class D	X											X	
Successor Hurr Ind Class E		X											
Successor Hurr Ind Class F									X				
Successor Hurr Mod Class A			X										
Successor Hurr Mod Class B				X									
Successor Hurr Mod Class C					X								
Successor Hurr Mod Class D						X							
Successor Hurr Mod Class E							X						
Successor CalQuake Industry A	X	X	X	X	X	X	X						
Successor CalQuake Industry B													
Successor CalQuake Industry C													
Successor CalQuake Para CI A												X	
Successor CalQuake Para CI B													X
Successor CalQuake Para CI C													
Successor JapQuake CI A	X	X	X	X	X	X	X	X	X			X	
Successor JapQuake CI B													X
Successor JapQuake CI C													
Successor EuroWnd CI A			X	X						X		X	
Successor EuroWnd CI B	X				X			X	X		X		X
Successor EuroWnd CI C		X					X	X					

weighted to Florida (92%) with 42% of that concentrated in Miami Dade County.

Calabash Re II

Later in the year a second program was approved, presumably with a slightly different

The deal offered investors an incredible menu of alternatives, certainly enough for them to shape their own portfolios if they chose to do so. The perils were familiar enough, US wind, California quake, Japanese quake and Euro-wind. However, in an intriguing twist the investor was offered not only the chance to choose his level of

attachment (preferred riskiness), but also whether the risk should be parametric, industry or modeled. Successor came at the same time as the reluctant reception of the Res Re indemnity bonds, so this presented a chance to gauge price differentials, if any, between indemnity and parametric risk. The market chose parametric.

Intriguingly, Swiss Re also offered one tranche that had a kick-out character to the risk. In other words, as losses rose the payout from the investor rose, but if the losses exceeded a certain size the investor payout dropped to zero. The attraction of this tranche was that it allowed investors to assume a risk that did not accumulate with concentrations of risk they may already have from high level coverages elsewhere.

Finally, to satisfy multi-peril investors Swiss Re offered combined risks in any number of combinations again to tap markets of investors who were trying shape their portfolios of exposures. The complexity of offerings can be seen in a matrix in Table 1 above. In this table the individual or single peril tranches are listed in the left hand column and the multi-peril tranches are listed along the top. Reading the matrix, for example in the Successor V A column, it should be clear that this bond is exposed to California quake, Japanese quake and Euro wind, all at the A tranche level. Successor V B on the other hand is exposed to the same set of risks, but at the B tranche level. In the end no one subscribed, or did not find a clearing price for these particular bonds, but they may do in the future. The exact issuance in each tranche is captured in the Appendix in Table 4. This shows that investors chose to underwrite \$1.2 billion of Swiss Re's exposure including almost \$300 million of multi-peril offerings.

From Swiss Re's point of view they gained coverage so that as much as the following amounts could be recovered from each peril: \$575 million of US wind, \$303 million of California quake, \$466 million of Japanese quake and \$658 million of Euro-wind, roughly half a billion in each peril. Not bad for a program that some people sneered at a few years back when consecutive issuances were of the order of \$20 million a time as not worth bothering with. Exactly how that growth has occurred in the case of US wind is shown in Figure 6, Appendix. This graph overlays the cumulative Pioneer, Arbor and

Successor issues since inception. It is impressive to say the least.

Non-Cat ILS - Life

Osiris

AXA issued its first extreme mortality bond in November 2006. Named for the Egyptian God of life, death and fertility, it covered extreme mortality in France, Japan and the US. Its initial program has authorized a potential issuance of €1 billion. Extreme mortality is defined as a departure from expected mortality statistics, from whatever cause, by more than a specified % over the base years of 2004 and 2005. The loss is for the worst two consecutive years in the term of the note. This may include loss of life from terrorism, bird flu or pandemic. The threshold levels for each tranche are 106%, 110%, 114%, 119% for classes D, C, B and A.

Interestingly, the tranches were offered to a Eurodollar universe (Classes B-1 and B-2) and to a dollar universe (Classes C and D). Also, the Eurodollar investors were able to take the bonds with a financial guaranty (AAA rated) paying 20 basis points or on a non-guaranteed basis (A-rated) paying 120 basis points. Twice as many chose to take the wrap, which perhaps shows that this market is still young. US investors, on the other hand, took no guarantees and lower attachment points to receive coupons of 285 and 500 basis points on classes C and D, respectively.

Vita III

Swiss Re issued its third version of its extreme mortality needs in Vita III. This program covers mortality in Canada, USA, UK, Germany and Japan. It has made two issuances, in December and January, for an equivalent total of \$711.15 million dollars. Like the Osiris issue it is possible to buy the Vita III bonds in Eurodollars or in dollars, on a wrapped or non-guaranteed basis and for different maturities of 4 to 5 years. And, similar to Osiris the loss measure is for two consecutive years above the specified thresholds. In Vita's case the levels are 110%, 115%, 120% and 125% above the 2004 and 2005 base levels. Wrapped prices were around 20 basis points;

unwrapped senior pieces were 110 basis points. Most takers took the wrapped tranches, perhaps because that market is larger and perhaps because those buyers had been attracted to prior Vita offerings but had passed because of the lack of a AAA rating.

It is interesting that now there are at least two life insurers who want to reduce their capital requirements by reducing their extreme mortality exposures. As more and more companies are being forced to evaluate their liabilities on a stochastic basis we expect more companies to join the ranks of issuers. As more issues come forward investors will want to start to observe their accumulations more accurately, as they do in cat. While a pandemic can affect all zones, terrorism is more localized. It will be interesting to see the emergence of modeling in this area.

Secondary Markets and Pricing

We forego our usual practice of fitting models to all ILS current prices to instead concentrate on two aspects of last year's activity: contemporaneous pricing and opportunities in the secondary market. In short, we focus on Successor and on Avalon. One of the defects we have always known about in our model fitting exercises is that they either used all issue prices during the year, in which case intra-year shifts would be lost, or they used contemporaneous secondary market prices, in which case they risked using out of date expected loss information, which is strictly accurate only at the moment of issue. Notwithstanding these defects, in most years there was no significant intra-year price shift and by measuring at the end of the first quarter we avoided the seasonal movements in expected losses that could distort our models. The first quarter is after the Euro wind season and before the US wind season. Our models, while not completely accurate, were pretty good and certainly accurate enough for government work. We did, however, long for a more robust market to get better handles on prices. The last twelve months have given us the opportunity.

Successor, as described above, gave us a raft of issues that were priced simultaneously and so allowed us to get a one time insight into pricing. Unfortunately, or perhaps fortunately,

that one time insight occurred at the peak price point in the market, June 2006.

We can, nevertheless, use fits made at that time to illustrate maximum prices that might exist in any future market. The result of our fit is shown in Figure 5 and is listed in Table 2. And we are fortunate, indeed, to be able to separate out the models for each of the perils. This is something that was difficult to do without dummy variables in previous year's analysis. Note also that we have confined our fitting exercise to what we have previously called the Kreps and Major model from their successful use of it for reinsurance pricing. It is the log linear model using expected loss as the independent variable. We have not abandoned our attempts to isolate the expected loss and second order influences on price through the use of the LFC model, but it is not the focus of this year's analysis.

Figure 5 shows three relationships, for US wind, Japan quake and Euro wind. Any other issuer observing those relationships at that time had a pretty good idea of what price he could command. Note that these are based on the short term probabilities, although they are as easily obtainable using long term ones as well. (Notice also that the multi-peril deals, the Successor series, lines up pretty well with the US wind model although it was not part of that fit.)

By the end of the first quarter prices had drifted lower from the June highs. To capture the current relationship we use our old trick and use secondary market prices, again taking refuge in the fact that expected loss rate in March will not be too far from issue rates. The relationship is shown in Figure 5 which is placed alongside the June fit. To further stress the decline consider Table 2 in which we trace out the price implied by the two models, in premium and in multiple terms, for several levels of expected loss. There has been a price decline, but it occurs more in non US wind than in US wind. Evidently there is still wind demand, or at least a caution that there is still a lot of wind risk to be covered. Investors or underwriters have, therefore, tried to mitigate the US wind risk by bidding up the prices of the other perils, in this case Japan quake and Euro wind. The effect (a price drop of 20%) is quite dramatic; after all there have been no significant losses in

Figure 5

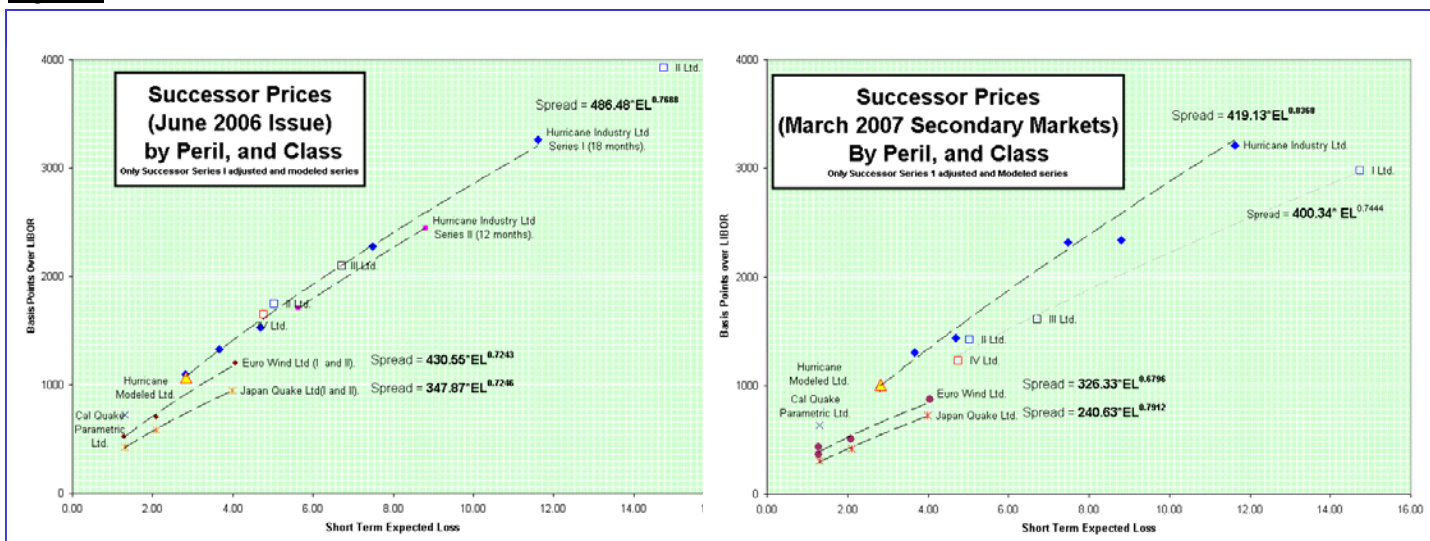


Table 2

Shift in Fitted Price Curves of Successor Issues

	Jun-06		Mar-07	
	Gamma	Alpha	Gamma	Alpha
Hurricane	486.48	0.7688	419.13	0.8368
Euro Wind	430.55	0.7243	326.33	0.6796
Japan Quake	347.87	0.7246	240.63	0.7912

Exp Loss%	2	4	6	8
Hurricane				
Jun-06	829	1412	1929	2406
Mar-07	749	1337	1877	2388
	-9.69%	-5.33%	-2.68%	-0.76%

Euro Wind				
Jun-06	711	1175	1576	1941
Mar-07	523	837	1103	1341
	-26.52%	-28.76%	-30.04%	-30.93%

Japan Quake				
Jun-06	575	950	1274	1570
Mar-07	416	721	993	1247
	-27.56%	-24.14%	-22.06%	-20.55%

Multiples implied by Fitted Curves

Hurricane				
Jun-06	4.1	3.5	3.2	3.0
Mar-07	3.7	3.3	3.1	3.0

Euro Wind				
Jun-06	3.6	2.9	2.6	2.4
Mar-07	2.6	2.1	1.8	1.7

Japan Quake				
Jun-06	2.9	2.4	2.1	2.0
Mar-07	2.1	1.8	1.7	1.6

either zone so demand for coverage has been static.

We have qualms about the quality of secondary market price information in quiet markets, of which more below, but contend that the information contained in these models is still superior to much of the speculation about where prices are. For one thing secondary markets can

indicate where opportunities lie. We believe that Avalon is an overlooked case in point.

Avalon Re

Avalon Re was issued in June of 2005 in three tranches. It was the first transaction to embed liability risk in an insurance linked security (ILS). The particular liability was excess third party liability protected by Oil Casualty Insurance Limited (OCIL), an industry mutual serving members of the oil services industry. The bonds⁹ covered full limit losses for \$150 million event claims, excess the first two limit losses. Since issue, the first two limit losses appear to have occurred (at Murphy Oil during Katrina and following the explosion at Buncefield in the UK). As a result, the C tranche is now at a ground-up exposure position and the C tranche price has fallen dramatically. According to secondary market price indications the recorded low prices were, respectively, \$88, \$70 and \$35 for the A, B and C tranches – see Figure 6.

As of the present, the prices are indicated offered at \$91.26, \$70.91 and \$40.33, respectively, promising returns of yields to maturity of 9.70%, 32.75% and 94%. With only fifteen months to maturity, prices have turned up indicating some investors think it may be an opportune time to buy.

⁹ For a fuller description see, *A look at Avalon Re and ILS pricing at Mid Year, Sept. 1, 2005* on our web site.

Figure 6

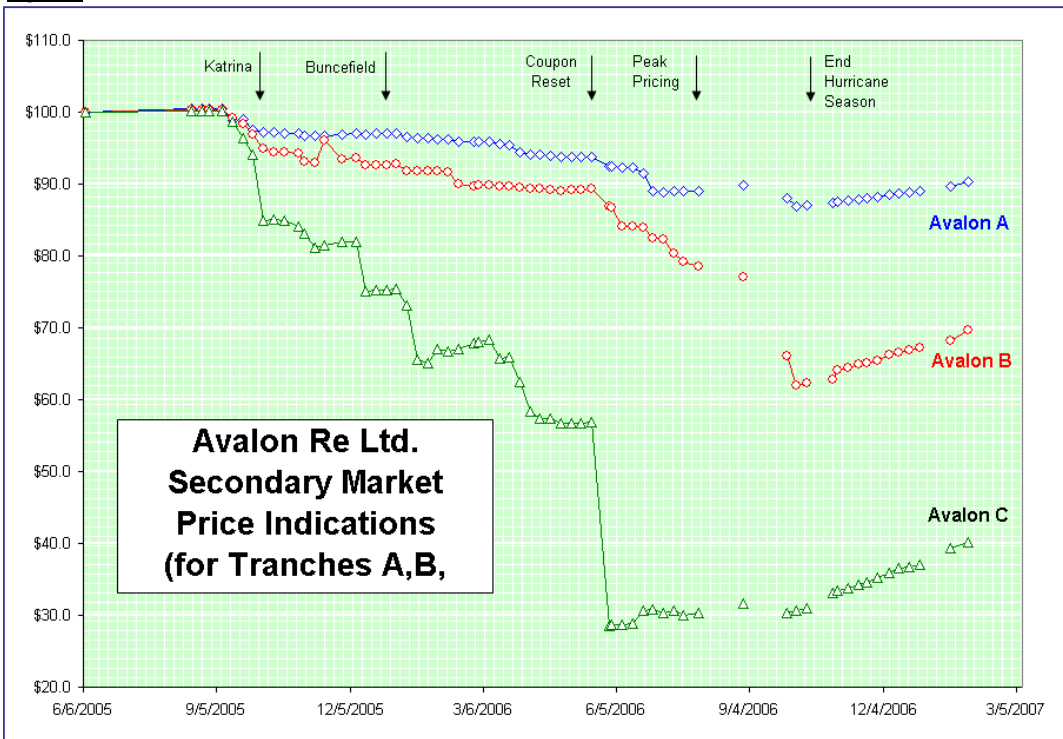


Table 3¹⁰ shows the returns that can be expected from a current purchase of the Avalon tranches. It lists the coupons to be received by the holder of the securities in future quarters (over and above LIBOR) but notice that the coupon changes.

In the original specifications there is a provision to revise the interest rate received if the underlying exposure of the subject portfolio of OCIL changes. This could be the case if the OCIL membership changed, if the assessment of risk changed or if the underlying policies changed. Evidently, during 2006 such changes occurred and the calculator firm, Paterson Martin, changed the premium due (interest payable). This is always an item to consider with multi-year deals. The A tranche exposure went up by 12%, the B tranche by 18% and the C tranche by 23% according to the coupon shift. That adjustment took place in June 2006 and apparently caused the last great down shift in prices. Investors apparently had not expected such a big shift.

In Table 4 we have assumed that the same shift in coupon will take place this year. It seems

¹⁰ For convenience, the table rounds the prices that may be available to \$91, \$71 and \$40 as of March this year.

to be the conservative thing to do. (See the pink highlighted bars for the shifted coupons.)

The table also assumes no loss to a current investment and return of principal at maturity, with no extension.

Notice, finally, that the yield to maturity and the internal rate of return are both calculated. The former is generally the number that is quoted for bonds.

While the secondary market offers potentially handsome returns they do not tell what are the risks that go with that return. This has to be estimated or inferred. The issuer, OCIL, has communicated that exposures have

Table 3

2006 Original Coupon		2.125%	3.600%	7.750%	
2007 Adjusted Coupon		2.386%	4.255%	9.534%	
2008 Adjustment (assumed)		12%	18%	23%	
2008 Coupon (Assumed)		2.679%	5.029%	11.729%	
Purchase Price	mar	3/6/2007	-\$91.00	-\$71.00	-\$40.00
Coupon	jun	6/6/2007	\$0.597	\$1.064	\$2.384
	sep	9/3/2007	\$0.670	\$1.257	\$2.932
	dec	12/6/2007	\$0.670	\$1.257	\$2.932
	mar	3/6/2008	\$0.670	\$1.257	\$2.932
	jun	6/6/2008	\$100.670	\$101.257	\$102.932
	Principal			\$100.00	\$100.00
		IRR	10.757%	38.865%	144.494%
		Y-T-M	10.32%	35.37%	98.68%

increased with their revision of the annual coupon. We also know that the C tranche is in a ground-up or first loss position, but we do not know the riskiness of that position. It was not revealed to investors at the original issue point, although it was known that reinsurance covered that layer. In the investor material there was an estimate of the frequency of claims from a

ground-up level to the industry. There was also an estimate of severity of loss; approximately 90% were less than \$50 million. We also know that OCIL writes policies excess \$50 million, so that not all ground-up claims inure to it.

Furthermore, of the claims above \$50 million only about one third are expected above \$100 million so that most of the time even when there is a claim, it will not be a limit loss. Indeed, in their original documentation of losses paid in the preceding 18 years, of which there were nine, none was a limit loss. The average was \$44 million.

Table 4

	Range of Expected Losses implied by Current Prices		Implied Multiples	
A	2.70%	3.40%	3.82	3.04
B	13.20%	16.50%	2.68	2.14
C	50.00%	62.00%	1.97	1.59

That said, the two recent claims appear to have been limit losses.

The question remains how to assess the remaining risks? Given the exposure base shift it seems unrealistic to re-simulate the layers based on original data.

The rating agencies are one place to start. They, at least, are shown recent data. The revised ratings are B+, CCC, CCC-, respectively, and the default rates associated with those letter ratings are "approximately", 3.6%, 15-20%, and 20-25%. The word has to be "approximately" because the agencies are quite loose with the numbers for CCC level risks. And, depending on the agency, some refer to default probabilities - others talk of expected loss. Finally, by way of final caution with using the rating agency as risk assessor the last adjustment was March 22 of 2006. Ratings were not revised after the coupon adjustment and have not been revised since.

Another approach to risk assessment is to try to gauge what the market is implying. By looking at the pricing of the other securities at mid-year and presently, the following table lays out potential market implied risk.

The implication of the two risk estimates is that the C tranche risk could be anywhere from 25% to 60% for which the reward would be 98%. On the other hand, the B tranche seems to be more consistently estimated to have a risk of around 15-20% for which the reward is 35%. Also,

with the B tranche there is less risk of extension - see below.

OCIL has the right to extend the time at which they release funds to investors. Ordinary maturity is June 2008, three years after issue. If no loss events or claims occur OCIL will return funds to investors at maturity. However, if claims occurred during the on-risk period that OCIL believes will develop to a size that would penetrate one or all of the tranches, it has the right to extend the date of final repayment. It can extend any of the tranches for three months, but the process can be repeated up to eight times, for a total of two years.

There are two types of extension, Type I and Type II. Under the first type OCIL can extend at their discretion. However, if they so elect they must pay the A tranche holders full coupon, and if they extend the B and C tranches they must pay a coupon of 2.5%. Obviously, the intent of the coupon payment post risk period is to prevent capricious extension. The second type of extension allows a lower coupon payment of only 10 basis points by OCIL, but can be enacted if and only if the estimate of losses is 75% of the tranche attachment point.

What this means is that as of now, it is estimated that both Murphy Oil and Buncefield are full limit losses, i.e., \$300 million. Accordingly, tranche C can be extended by a Type II extension if OCIL desires it. However, for tranche B a further loss of \$37.5 or more million must be independently assessed to have happened to allow a Type II extension (75% of \$450 million equals \$337.5 million).

As of now we can perhaps conclude that the senior tranche will not be extended, that the junior tranche will be extended under any significant claim and that for the B tranche there will have to be one or more significant events that lead to a full limit loss before it is extended. Unfortunately, OCIL has discontinued the practice it started just after issue of posting claims to its web site, although presumably it provides this to bondholders. Secondary market buyers will want to receive that information before consummating any deal.

Extension can still occur and not cause a loss. Assuming there is an extension for the full two years and no loss, this affects the returns as shown in Table 5.

Our analysis of Avalon has been rather long, but it serves to illustrate the gyrations that investors will often have to go through to make value judgments in an after-market. OCIL itself could have made these judgments and bought back the bonds at their lowest points (effectively getting 70% of their limit with or without a loss!) but they chose not to. However, in order to

Table 5

Internal Rates of Return under different, no-loss repayment scenarios				
At maturity	IRR	10.76%	38.86%	144.42%
Type I	IRR	5.82%	15.81%	48.65%
Type II	IRR	4.14%	13.97%	45.84%

promote a liquid secondary market it is in the interest of companies to disclose as much as possible to reveal the true price of risk. Failing to provide information in the after-market does not promote this.

Concluding Remarks

The total outstanding ILS as of April 1, 2007 is \$10.3 billion (no fooling). This is quite a benchmark. Eighty percent of this total is natural catastrophe risk; the largest part of the remainder is mortality. Put another way a clustering of catastrophic events could cause the capital market a \$10 billion loss. This is a far cry from the market as it was ten years ago. Then the market had less than one billion annual issuance. It has been a long time coming but believers expect that sort of growth to continue. One such believer is Jacques Aigrain, CEO of Swiss Re. In a January speech¹¹ observed that the compound annual rate of growth of the last 10 years has been 39.75%, and assuming a future compound annual rate of growth of 25% to 40% the next 10 years, he foresees a market size of between \$250 billion to \$750 billion¹². While our own estimates are optimistic they are not as bold as that. Then again, Aigrain also has the power to be self fulfilling, which we do not - more power to him.

There are other reasons to be optimistic about the ILS market, even if we are in pause.

¹¹ UBS Swiss Alpine Summit, Gstaad, January 19, 2007

¹² Aigrain starts with a current outstanding of \$25 billion and evidently includes many other insurance related instruments (such as sidecars) beyond ILS total of \$10 billion.

One reason is the new deals currently in the market which will fall outside of our review period. This plus the “pipeline” promises to make 2007 a \$3-4 billion issue year, assuming a normal loss year. A second reason is the proliferation of new ideas for trading insurance. Within five months of hurricane Andrew in 1992 the Chicago Board of Trade (CBoT) listed a futures contract based on an index of insurance losses measured by the Insurance Services Office (ISO). That contract morphed into a Property Claims Service (PCS) measured option. Activity was slow, but an idea was born. Specifically, the CBoT contracts traded for 5 years and

assumed an aggregate risk of \$100 - 250 million of risk over the five years. The contract died in the soft, soft market of 1999, but also because of the lack of nourishment by its parent, the CBoT itself, whose attention was focused elsewhere. Before it died the CBoT attracted imitators: Catex, the Bermuda Commodity Exchange, a Guy Carpenter index¹³. Even the Industry Loss Warranty (ILW) market can trace its take-off to the exchange years. Each of these vehicles had a different idea of what would succeed with users, but in the end they all, except ILWs, succumbed to said soft 1990 market.

Now history is repeating itself.

Eighteen months after Katrina, Gallaghers have linked up with Nymex and Carville has linked up with the Chicago Mercantile Exchange. Both are promoting different indices and contract specifications. Deutsche Bank trades natural cat swaps as Swiss Re Capital Markets has for sometime. Other exchanges, IFEX and ISE, are also exploring this space. And several private initiatives are mulled. Guy Carpenter has a Nat Cat facility and several ideas are bandied about but are subject to non disclosure requirements. All in all, this is encouraging and will be the subject of a subsequent paper. As a past Chairman of the CBoT insurance products development committee, and a trader in CBoT options in the nineties, we have some strong views of what might and might not work. But we are humbled enough by experience to know that

¹³ Readers interested in this history might well review some early papers on the Lane Financial web site, in particular, *The Perfume of Premium II*, Dec. 19, 1998.

no one has a lock on wisdom in this area. For the present, suffice it to say that there is no doubt that the market is better placed to trade insurance than it was in the 1990's. We believe one of these mechanisms will eventually succeed. It will succeed if all the parties (buyers, sellers and brokers) want it and all the parties profit from its existence. ✖

APPENDIX

ILS Tables - Long Term and Short Term - 2006/06

USAA/Residential Re Issue Case Study

Successor Group - Specifications and Coverages

Term to Maturity Summary

Credit Ratings Summary

Investment Bankers/Co-Managers

Review of Market Trends

Potential Perils

ILS Secondary Market Price Summary

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, Part 2, Appendix

2006-2007 ILS FINANCIAL STATISTICS LONG TERM PROBABILITIES

SPV	Cedent	Lead Underwriters	Amount (US \$M)	S&P Rating	Moody's Rating	Fitch Rating	Issue Date	Maturity	Maturity Term	Exposure Term	Spread Premium to LIBOR (bps)	Adjusted Spread Premium (Annual)	Expected Loss (Annual)	Probability of 1st \$ Loss (Annual)	Probability of Exhaust (Annual)	Expected Excess Return (Annual)	Conditional Expected Loss
1. Analyzed Securities																	
#	Successor Hurr Ind B-1	Swiss Re	14.0	BB-	B1	--	Jun-06	Dec-07	18	18	1100	1115	1.36%	1.7900	1.0200	979	0.76%
#	Successor Hurr Ind C-1	Swiss Re	7.3	B	B2	--	Jun-06	Dec-07	18	18	1530	1551	2.35%	3.0600	1.7900	1316	0.77%
#	Successor Hurr Ind D-1	Swiss Re	34.3	B	--	--	Jun-06	Dec-07	18	18	2275	2307	3.89%	4.8900	3.0600	1918	0.80%
#	Successor Hurr Ind E-1	Swiss Re	5.0	B	--	--	Jun-06	Dec-07	18	18	3260	3305	6.25%	7.9300	4.8900	2680	0.79%
#	Successor Hurr Ind F-1	Swiss Re	54.0	B	B2	--	Jun-06	Dec-07	18	18	1330	1348	2.00%	5.0400	0.0000	1148	0.40%
#	Successor Hurr Ind D-2	Swiss Re	10.3	B	--	--	Jun-06	Dec-07	12	12	1710	1734	3.89%	4.8900	3.0600	1345	0.80%
#	Successor Hurr Ind E-2	Swiss Re	35.0	BB+	--	--	Jun-06	Jun-07	12	12	2460	2484	6.25%	7.9300	4.8900	1859	0.79%
#	Successor Hurr Ind E-3	Swiss Re	50.0	--	--	--	Aug-06	Jan-07	5	5	4920	4988	6.25%	7.9300	4.8900	4363	0.79%
#	Successor Hurr Ind E-4	Swiss Re	4.0	--	--	--	Jan-06	Jan-07	12	12	2250	2281	6.25%	7.9300	4.8900	1656	0.79%
#	Successor Hurr Ind E-5	Swiss Re	26.0	--	--	--	Jan-06	Jan-08	24	24	2250	2281	6.25%	7.9300	4.8900	1656	0.79%
#	Successor Hurr Mod B-1	Swiss Re	42.3	BB-	B1	--	Jun-06	Dec-07	18	18	1065	1080	2.13%	2.7300	1.6100	867	0.78%
#	Successor EuroWind A-1	Swiss Re	97.1	BB	Ba3	--	Jun-06	Jun-08	24	24	525	532	1.29%	1.6000	1.0000	403	0.81%
#	Successor EuroWind B-1	Swiss Re	18.5	BB-	B1	--	Jun-06	Jun-08	24	24	700	710	2.09%	2.7100	1.6000	501	0.77%
#	Successor EuroWind C-1	Swiss Re	110.8	B	B3	--	Jun-06	Jun-08	24	24	1200	1217	4.06%	6.0000	2.7100	811	0.68%
#	Successor EuroWind A-2	Swiss Re	3.0	BB	Ba3	--	Jun-06	Jun-07	12	12	525	532	1.29%	1.6000	1.0000	403	0.81%
#	Successor EuroWind C-2	Swiss Re	3.0	B	B3	--	Jun-06	Jun-07	12	12	1200	1217	4.06%	6.0000	2.7100	811	0.68%
#	Successor EuroWind A-3	Swiss Re	118.0	BB	Ba3	--	Dec-06	Dec-08	24	24	575	583	1.29%	1.6000	1.0000	454	0.81%
#	Successor EuroWind C-3	Swiss Re	15.0	B	B3	--	Dec-06	Dec-08	24	24	1075	1090	4.06%	6.0000	2.7100	684	0.68%
#	Successor Calqk Par A-1	Swiss Re	47.5	BB	Ba3	--	Jun-06	Jun-08	24	24	725	735	1.30%	1.6300	1.0200	605	0.80%
#	Successor JpnQk A-1	Swiss Re	103.5	BB	Ba3	--	Jun-06	Jun-08	24	24	425	431	1.30%	1.6100	1.0000	301	0.81%
#	Successor JpnQk B-1	Swiss Re	26.3	BB-	B1	--	Jun-06	Jun-08	24	24	585	593	2.10%	2.7200	1.6100	383	0.77%
#	Successor JpnQk C-1	Swiss Re	70.8	B	B3	--	Jun-06	Jun-07	24	24	950	963	3.89%	6.0400	2.7200	565	0.66%
#	Successor JpnQk C-2	Swiss Re	3.0	B	B3	--	Jun-06	Jun-07	12	12	950	963	3.89%	6.0400	2.7200	565	0.66%
#	Successor I B-1	Swiss Re	40.0	B	B3	--	Dec-06	Dec-07	12	12	3600	3650	12.34%	16.2000	9.4200	2416	0.76%
#	Successor I B-2	Swiss Re	24.5	--	--	--	Dec-06	Dec-08	24	24	3600	3650	12.34%	16.2000	9.4200	2416	0.76%
#	Successor II A-1	Swiss Re	73.2	B	B3	--	Jun-06	Jun-08	24	24	1750	1774	4.62%	5.7300	3.6200	1312	0.81%
#	Successor II E-1	Swiss Re	154.3	--	--	--	Jun-06	Jun-08	24	24	3925	3980	12.75%	16.6100	9.7900	2705	0.77%
#	Successor III A-1	Swiss Re	7.2	B	B3	--	Jun-06	Jun-08	24	24	2100	2129	5.57%	7.1400	4.3000	1572	0.78%
#	Successor IV A-1	Swiss Re	30.0	B	B3	--	Jun-06	Jun-08	24	24	1650	1673	3.60%	4.6000	2.7700	1313	0.78%
*	Vasco Re 2006	Aon Capital Markets	50.0	BB+	--	--	Jun-06	Jun-09	36	36	300	304	0.54%	0.9900	0.3100	250	0.55%
2. Life Securities																	
#	OSIRIS Capital Plc C1 B Ser 1	AXA Cessions	128.0	AAA	Aaa	--	Nov-06	Jan-10	38	38	20	20	0.07%	0.1170	0.0460	13	0.62%
#	OSIRIS Capital Plc C1 B Ser 2	IXIS Corp. & Inv. Bk./ Lehman Bros.	64.0	A-	A3	--	Nov-06	Jan-10	38	38	120	122	0.07%	0.1170	0.0460	114	0.62%
#	OSIRIS Capital Plc C1 Ser 1	AXA Cessions	150.0	BBB	Baa2	--	Nov-06	Jan-10	38	38	285	289	0.18%	0.2550	0.1170	271	0.70%
#	OSIRIS Capital Plc C1 D Ser 1	AXA Cessions	100.0	BB+	Ba1	--	Nov-06	Jan-10	38	38	500	507	0.37%	0.3260	0.2550	470	0.71%
#	Vita Capital III A-4	Swiss Re	100.0	AAA	Aaa	--	Jan-07	Jan-11	48	48	21	21	0.03%	0.0400	0.2800	18	0.75%
#	Vita Capital III A-5	Swiss Re	100.0	AAA	Aaa	--	Jan-07	Jan-12	60	60	20	20	0.03%	0.0400	0.0310	17	0.75%
#	Vita Capital III A-6	Swiss Re	74.0	AAA	Aaa	--	Jan-07	Jan-11	48	48	21	21	0.03%	0.0400	0.2800	18	0.75%
#	Vita Capital III A-7	Swiss Re	134.0	AA-	Aa2	--	Jan-07	Jan-12	60	60	80	81	0.03%	0.0400	0.3100	78	0.75%
#	Vita Capital III B-1	Swiss Re	90.0	A	A1	--	Dec-06	Jan-11	48	48	110	112	0.04%	0.0420	0.0370	108	0.93%
#	Vita Capital III B-2	Swiss Re	50.0	A	A1	--	Dec-06	Jan-12	60	60	113	115	0.04%	0.0390	0.0360	111	0.95%
#	Vita Capital III B-3	Swiss Re	39.5	A	A1	--	Dec-06	Jan-11	48	48	110	112	0.04%	0.0420	0.0370	108	0.93%
#	Vita Capital III B-4	Swiss Re	50.0	AAA	Aaa	--	Jan-07	Jan-11	60	60	21	21	0.04%	0.0420	0.0370	17	0.93%
#	Vita Capital III B-5	Swiss Re	74.0	AAA	Aaa	--	Jan-07	Jan-11	48	48	22	22	0.04%	0.0420	0.3900	18	0.93%
3. Other - Term Loans																	
*	Shackleton Re Ltd. B	Endurance Sp. Ltd.	60.0	BB+	Ba3	--	Aug-06	Aug-08	24	24	800	811	0.98%	1.4900	0.9600	713	0.66%
*	Shackleton Re Ltd. C	Endurance Sp. Ltd.	50.0	BB+	Ba2	--	Aug-06	Aug-08	24	24	750	760	0.51%	0.9600	0.9600	709	0.53%

Notes to Table 1

- The table displays securities/franchises issued between April 2006 and March 2007. Section 1 shows 61 natural catastrophe issues/franchises that are analyzed in this paper. Section 2 shows 13 mortality based securities. Section 3 records 2 other related issues.
- All deals are converted to a 365-day year as LIBOR convention uses a 360-day year but CAT risk is a 365-day year. Adjusted spreads are therefore comparable to reinsurance pricing.
- Expected Excess Return is defined as Adjusted Spread Premium less Expected Loss. Conditional Expected Loss is defined as Expected Loss divided by the Probability of First Dollar Loss.
- # indicates program offerings allowing periodic issues in each Class.
- Transaction marked (*) are by first time issuers.
- OSIRIS B.1 carries a financial guaranty. B2 does not, resulting in different rating and spread.

Table 2, Part 2, Appendix

2006-2007 ILS FINANCIAL STATISTICS

SHORT TERM PROBABILITIES

New Issuer	SPV Program	Cedent	Lead Underwriters	Amount (US \$Mill)	S&P Rating	Moody's Rating	Fitch Rating	Issue Date	Maturity	Maturity Term	Exposure Term	Spread Premium to LIBOR (bps)	Adjusted Spread Premium (Annual)	Expected Loss (Annual)	Probability of Excess 1st \$ Loss (Annual)	Expected Return (Annual)	Conditional Expected Loss	
1. Analyzed Securities																		
#	Successor Hurr Ind B-1	Swiss Re	Swiss Re Cap. Mkts.	14.0	BB-	B1	--	Jun-06	Dec-07	18	18	1100	1115	2.12%	2.7200	1.6100	903	0.78%
#	Successor Hurr Ind C-1	Swiss Re	Swiss Re Cap. Mkts.	7.3	B	B2	--	Jun-06	Dec-07	18	18	1530	1551	3.53%	4.4900	2.7200	1198	0.79%
#	Successor Hurr Ind D-1	Swiss Re	Swiss Re Cap. Mkts.	34.3	B	--	--	Jun-06	Dec-07	18	18	2275	2307	5.64%	7.0100	4.4900	1743	0.80%
#	Successor Hurr Ind E-1	Swiss Re	Swiss Re Cap. Mkts.	5.0	--	--	--	Jun-06	Dec-07	18	18	3260	3305	8.81%	10.9000	7.0100	2424	0.81%
#	Successor Hurr Ind F-1	Swiss Re	Swiss Re Cap. Mkts.	54.0	B	B2	--	Jun-06	Dec-07	18	18	1330	1348	2.76%	6.7200	0.0000	1072	0.41%
#	Successor Hurr Ind D-2	Swiss Re	Swiss Re Cap. Mkts.	10.3	B	--	--	Jun-06	Jun-07	12	12	1770	1734	5.64%	7.0100	4.4900	1170	0.80%
#	Successor Hurr Ind E-2	Swiss Re	Swiss Re Cap. Mkts.	35.0	--	--	--	Jun-06	Jun-07	12	12	2450	2484	8.81%	10.9000	7.0100	1603	0.81%
#	Successor Hurr Ind E-3	Swiss Re	Swiss Re Cap. Mkts.	50.0	--	--	--	Aug-06	Jan-07	5	5	4920	4988	8.81%	10.9000	7.0100	4107	0.81%
#	Successor Hurr Ind E-4	Swiss Re	Swiss Re Cap. Mkts.	4.0	--	--	--	Jan-06	Jan-07	12	12	2250	2281	8.81%	10.9000	7.0100	1400	0.81%
#	Successor Hurr Ind E-5	Swiss Re	Swiss Re Cap. Mkts.	26.0	--	--	--	Jan-06	Jan-08	24	24	2250	2281	8.81%	10.9000	7.0100	1400	0.81%
#	Successor Hurr Mod B-1	Swiss Re	Swiss Re Cap. Mkts.	42.3	BB-	B1	--	Jun-06	Dec-07	18	18	1085	1080	2.13%	2.7300	1.6100	867	0.78%
#	Successor EuroWind A-1	Swiss Re	Swiss Re Cap. Mkts.	97.1	BB	Ba3	--	Jun-06	Jun-08	24	24	525	532	1.29%	1.6000	1.0000	403	0.81%
#	Successor EuroWind B-1	Swiss Re	Swiss Re Cap. Mkts.	18.5	BB-	B1	--	Jun-06	Jun-08	24	24	700	710	2.09%	2.7100	1.6000	501	0.77%
#	Successor EuroWind C-1	Swiss Re	Swiss Re Cap. Mkts.	110.8	B	B3	--	Jun-06	Jun-08	24	24	1200	1217	4.06%	6.0000	2.7100	811	0.68%
#	Successor EuroWind A-2	Swiss Re	Swiss Re Cap. Mkts.	3.0	BB	Ba3	--	Jun-06	Jun-07	12	12	525	532	1.29%	1.6000	1.0000	403	0.81%
#	Successor EuroWind C-2	Swiss Re	Swiss Re Cap. Mkts.	3.0	B	B3	--	Jun-06	Jun-07	12	12	1200	1217	4.06%	6.0000	2.7100	811	0.68%
#	Successor EuroWind A-3	Swiss Re	Swiss Re Cap. Mkts.	118.0	BB	Ba3	--	Dec-06	Dec-08	24	24	575	583	1.29%	1.6000	1.0000	454	0.81%
#	Successor EuroWind C-3	Swiss Re	Swiss Re Cap. Mkts.	15.0	B	B3	--	Dec-06	Dec-08	24	24	1075	1090	4.06%	6.0000	2.7100	684	0.68%
#	Successor CatQk Par A-1	Swiss Re	Swiss Re Cap. Mkts.	47.5	BB	Ba3	--	Jun-06	Jun-08	24	24	725	735	1.30%	1.6300	1.0200	605	0.80%
#	Successor JpnQk A-1	Swiss Re	Swiss Re Cap. Mkts.	103.5	BB	Ba3	--	Jun-06	Jun-08	24	24	425	431	1.30%	1.6100	1.0000	301	0.81%
#	Successor JpnQk B-1	Swiss Re	Swiss Re Cap. Mkts.	26.3	BB-	B1	--	Jun-06	Jun-08	24	24	585	593	2.10%	2.7200	1.6100	383	0.77%
#	Successor JpnQk C-1	Swiss Re	Swiss Re Cap. Mkts.	70.8	B	B3	--	Jun-06	Jun-08	24	24	950	963	3.98%	6.0400	2.7200	565	0.66%
#	Successor JpnQk C-2	Swiss Re	Swiss Re Cap. Mkts.	3.0	B	B3	--	Jun-06	Jun-07	12	12	950	963	3.98%	6.0400	2.7200	565	0.66%
#	Successor IB-1	Swiss Re	Swiss Re Cap. Mkts.	4.0	B	B3	--	Dec-06	Dec-07	12	12	3600	3650	12.34%	16.2000	9.4200	2416	0.76%
#	Successor IB-2	Swiss Re	Swiss Re Cap. Mkts.	73.2	--	--	--	Dec-06	Dec-08	24	24	3600	3650	12.34%	16.2000	9.4200	2416	0.76%
#	Successor II A-1	Swiss Re	Swiss Re Cap. Mkts.	24.5	B	B3	--	Jun-06	Jun-08	24	24	1750	1774	5.04%	6.2200	3.9700	1270	0.81%
#	Successor II E-1	Swiss Re	Swiss Re Cap. Mkts.	154.3	--	--	--	Jun-06	Jun-08	24	24	3925	3980	14.75%	18.9100	11.4900	2505	0.78%
#	Successor IV A-1	Swiss Re	Swiss Re Cap. Mkts.	7.2	--	--	--	Jun-06	Jun-08	24	24	2100	2129	6.72%	8.5200	5.2200	1457	0.79%
#	Successor IV A-1	Swiss Re	Swiss Re Cap. Mkts.	30.0	B	B3	--	Jun-06	Jun-08	24	24	1650	1673	4.76%	6.0200	3.6900	1197	0.79%
*	Vasco Re 2006	Balboa Ins. & Subs.	Aon Capital Markets	50.0	BB+	--	--	Jun-06	Jun-09	36	36	300	304	0.82%	1.3600	0.4400	222	0.59%
2. Life Securities																		
#	OSIRIS Capital Pk CIB Ser 1	AXA Cessions	Swiss Re Cap. Mkts./	128.0	AAA	Aaa	--	Nov-06	Jan-10	38	38	20	20	0.07%	0.1170	0.0460	13	0.62%
#	OSIRIS Capital Pk CIB Ser 2	AXA Cessions	IXIS Corp. & Inv. Bk./	64.0	A-	A3	--	Nov-06	Jan-10	38	38	120	122	0.07%	0.1170	0.0460	114	0.62%
#	OSIRIS Capital Pk C1 Ser 1	AXA Cessions	Lehman Bros.	150.0	BBB	Baa2	--	Nov-06	Jan-10	38	38	285	289	0.18%	0.2550	0.1170	271	0.70%
#	OSIRIS Capital Pk C1 D Ser 1	AXA Cessions		100.0	BB+	Ba1	--	Nov-06	Jan-10	38	38	500	507	0.37%	0.5260	0.2550	470	0.71%
#	Vita Capital III A-4	Swiss Re	Swiss Re Cap. Mkts.	100.0	AAA	Aaa	--	Jan-11	Jan-11	48	48	21	21	0.03%	0.0400	0.2800	18	0.75%
#	Vita Capital III A-5	Swiss Re	Swiss Re Cap. Mkts.	100.0	AAA	Aaa	--	Jan-12	Jan-12	60	60	20	20	0.03%	0.0400	0.0310	17	0.75%
#	Vita Capital III A-6	Swiss Re	Swiss Re Cap. Mkts.	14.0	AAA	Aaa	--	Jan-11	Jan-11	48	48	21	21	0.03%	0.0400	0.2800	18	0.75%
#	Vita Capital III A-7	Swiss Re	Swiss Re Cap. Mkts.	134.0	AA-	Aa2	--	Jan-12	Jan-12	60	60	80	81	0.03%	0.0400	0.3100	78	0.75%
#	Vita Capital III B-1	Swiss Re	Swiss Re Cap. Mkts.	90.0	A	A1	--	Dec-06	Jan-11	48	48	110	112	0.04%	0.0420	0.0370	108	0.93%
#	Vita Capital III B-2	Swiss Re	Swiss Re Cap. Mkts.	50.0	A	A1	--	Dec-06	Jan-12	60	60	113	115	0.04%	0.0390	0.0360	111	0.95%
#	Vita Capital III B-3	Swiss Re	Swiss Re Cap. Mkts.	39.5	A	A1	--	Dec-06	Jan-11	48	48	110	112	0.04%	0.0420	0.0370	108	0.93%
#	Vita Capital III B-4	Swiss Re	Swiss Re Cap. Mkts.	50.0	AAA	Aaa	--	Jan-12	Jan-12	60	60	21	21	0.04%	0.0420	0.0370	17	0.93%
#	Vita Capital III B-5	Swiss Re	Swiss Re Cap. Mkts.	74.0	AAA	Aaa	--	Jan-11	Jan-11	48	48	22	22	0.04%	0.0420	0.3900	18	0.93%
3. Other - Term Loans																		
#	Shackleton Re Ltd. B	Endurance Sp. Ltd.	Goldman Sachs	60.0	BB+	Ba3	--	Aug-06	Aug-08	24	24	800	811	0.98%	1.4900	0.9600	713	0.66%
#	Shackleton Re Ltd. C	Endurance Sp. Ltd.	Goldman Sachs	50.0	BB+	Ba2	--	Aug-06	Aug-08	24	24	750	760	0.51%	0.9600	0.9600	709	0.53%

Notes to Table 1

- The table displays securities/tranches issued between April 2006 and March 2007. Section 1 shows 61 natural catastrophe issues/tranches that are analyzed in this paper. Section 2 shows 13 mortality based securities. Section 3 records 2 other related issues.
- All deals are converted to a 365-day year as LIBOR convention uses a 360-day year but CAT risk is a 365-day year. Adjusted spreads are therefore comparable to reinsurance pricing.
- Expected Excess Return is defined as Adjusted Spread Premium less Expected Loss. Conditional Expected Loss is defined as Expected Loss divided by the Probability of First Dollar Loss.
- # indicates program offerings allowing periodic issues in each Class.
- Transaction marked (*) are by first time issuers.
- OSIRIS B 1 carries a financial guaranty. B2 does not, resulting in different rating and spread.

Table 3, Appendix

Residential Re Issues - 1997 to 2006

Issue	Lead Underwriters	Amount (US \$Mill)	S&P Rating	Moody's Rating	Fitch/DCR Rating	Issue Date	Maturity Term	Maturity Date	Exposure Term	Spread Premium to LIBOR (bps)	Adjusted Spread Premium (Annual)	Expected Loss (Annual)	Probability of 1st \$ Loss (Annual)	Probability of Exhaust (Annual)	Expected Excess Return (Annual)	Conditional Expected Loss
Residential Re I Class A-1	Goldman Sachs Merrill, Lynch, Lehman Bros.	163.8	AAA	Aaa	AAA	Jun-97	12	Jun-98	12	250	253	0.00%	0.0000	0.0000	253	0.00%
Residential Re I Class A-2	Goldman Sachs Merrill, Lynch, Lehman Bros.	313.2	BB	Ba2	BB	Jun-97	12	Jun-98	12	576	584	0.63%	1.0000	0.4200	521	0.63%
Residential Re II	Goldman Sachs Merrill, Lynch, Lehman Bros.	450.0		Ba2	BB	Jun-98	12	Jun-99	12	416	422	0.58%	0.8700	0.3200	364	0.67%
Residential Re III	Goldman Sachs Merrill, Lynch, Lehman Bros.	200.0	BB	Ba2		Jun-99	12	Jun-00	12	366	371	0.44%	0.7600	0.2600	327	0.58%
Residential Re 2000 Ltd.	Goldman Sachs Merrill, Lynch, Lehman Bros.	200.0	BB+	BB+	BB	May-00	12	Jun-01	12	410	416	0.54%	0.9500	0.3100	362	0.57%
Residential Re 2001 Ltd.	Goldman Sachs Merrill, Lynch, Lehman Bros.	150.0	BB+	Ba2		May-01	36	Jun-04	36	499	506	0.68%	1.1200	0.4100	438	0.61%
Residential Re 2002 Ltd.	Goldman Sachs Merrill, Lynch, Lehman Bros.	125.0	BB+	Ba3		May-02	36	Jun-05	36	490	497	0.67%	1.1200	0.4000	430	0.60%
Residential Re 2003 Ltd.	Goldman Sachs BNP Paribas	160.0	BB+	Ba2		May-03	36	Jun-06	36	495	502	0.48%	1.1000	0.2800	454	0.44%
Residential Re 2004 A	Goldman Sachs & BNP Paribas	127.5	BB	--	--	May-04	36	Jun-07	36	595	603	1.21%	1.8800	0.7100	482	0.64%
Residential Re 2004 B	Goldman Sachs & BNP Paribas	100.0	B	--	--	May-04	36	Jun-07	36	950	963	3.16%	5.0300	1.9000	647	0.63%
Residential Re 2005 A	Goldman Sachs & BNP Paribas	91.0	BB	--	--	May-05	36	Jun-08	36	545	553	1.43%	2.1700	0.9300	410	0.66%
Residential Re 2005 B	Goldman Sachs & BNP Paribas	85.0	B	--	--	May-05	36	Jun-08	36	845	857	3.41%	5.2700	2.1800	516	0.65%
Residential Re 2006 A	Goldman Sachs & BNP Paribas	47.5	B	--	--	Jun-06	36	Jun-09	36	1000	1014	2.66%	3.7000	1.9600	748	0.72%
Residential Re 2006 B	Goldman Sachs & BNP Paribas	0.0	B	--	--	Jun-06	36	Jun-09	36	750	760	5.42%	8.1600	3.3700	686	0.70%
Residential Re 2006 C		75.0	BB+	--	--	Jun-06	36	Jun-09	36	750	760	0.74%	1.0600	0.5100	686	0.70%
Residential Re 2006 D		0.0	BB	--	--	Jun-06	36	Jun-09	36	750	760	1.44%	2.0300	1.0600	686	0.70%

Notes to Table 1

Indicated probabilities are based on the short term (sensitivity case) risk analysis for US Wind exposure.

Residential Re 2006 Classes B and D were proposed but never issued. Combined proposed issuance over four classes would have been \$122.5 million. Actual issuance in two classes was \$122.5 million. Classes A and B were per occurrence coverages.

Classes C and D were aggregate coverages and thus more consistent with prior single class or Class A Residential Re issues.

All deals are converted to a 365-day year as LIBOR convention uses a 360-day year but CAT risk is a 365-day year. Adjusted spreads are therefore comparable to reinsurance pricing.

Expected Excess Return is defined as Adjusted Spread Premium less Expected Loss. Conditional Expected Loss is defined as Expected Loss divided by the Probability of First Dollar Loss.

Figure 1, Appendix

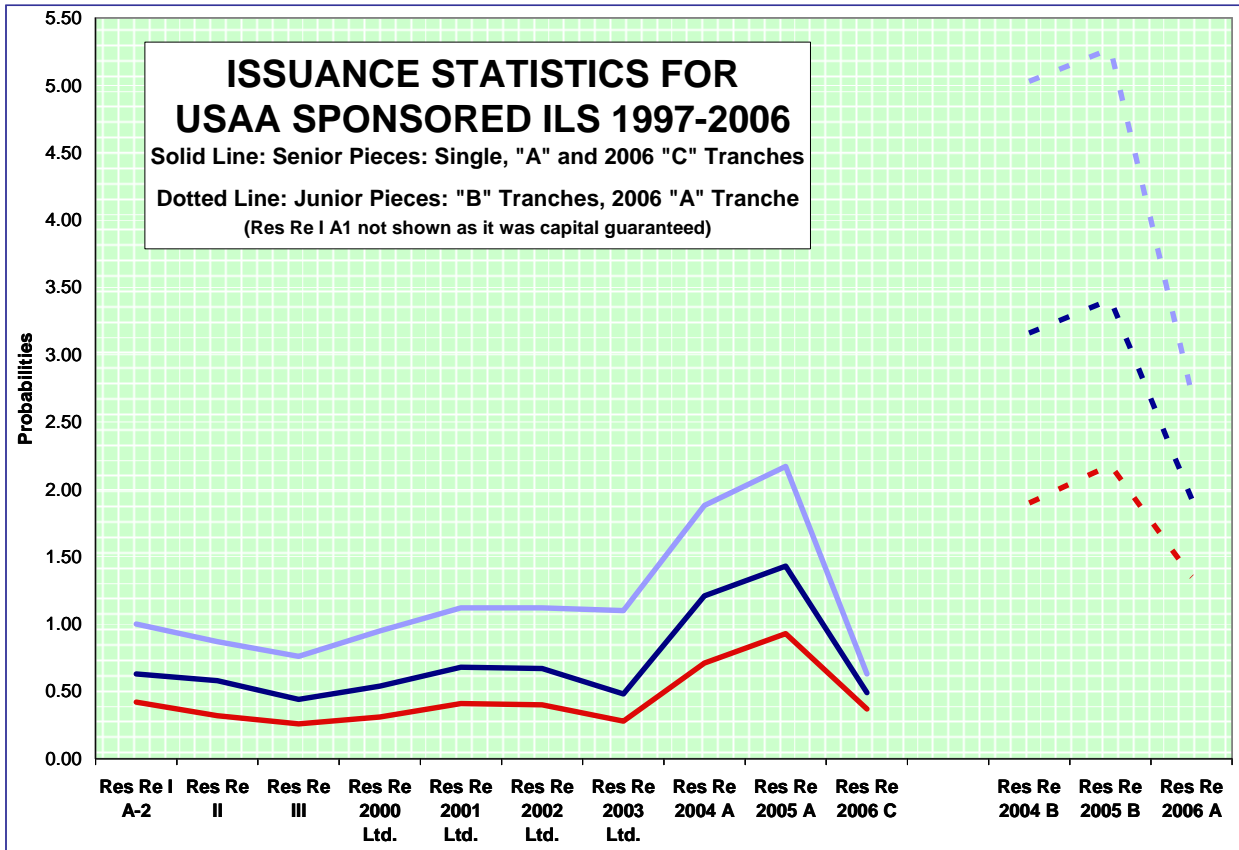


Figure 2, Appendix

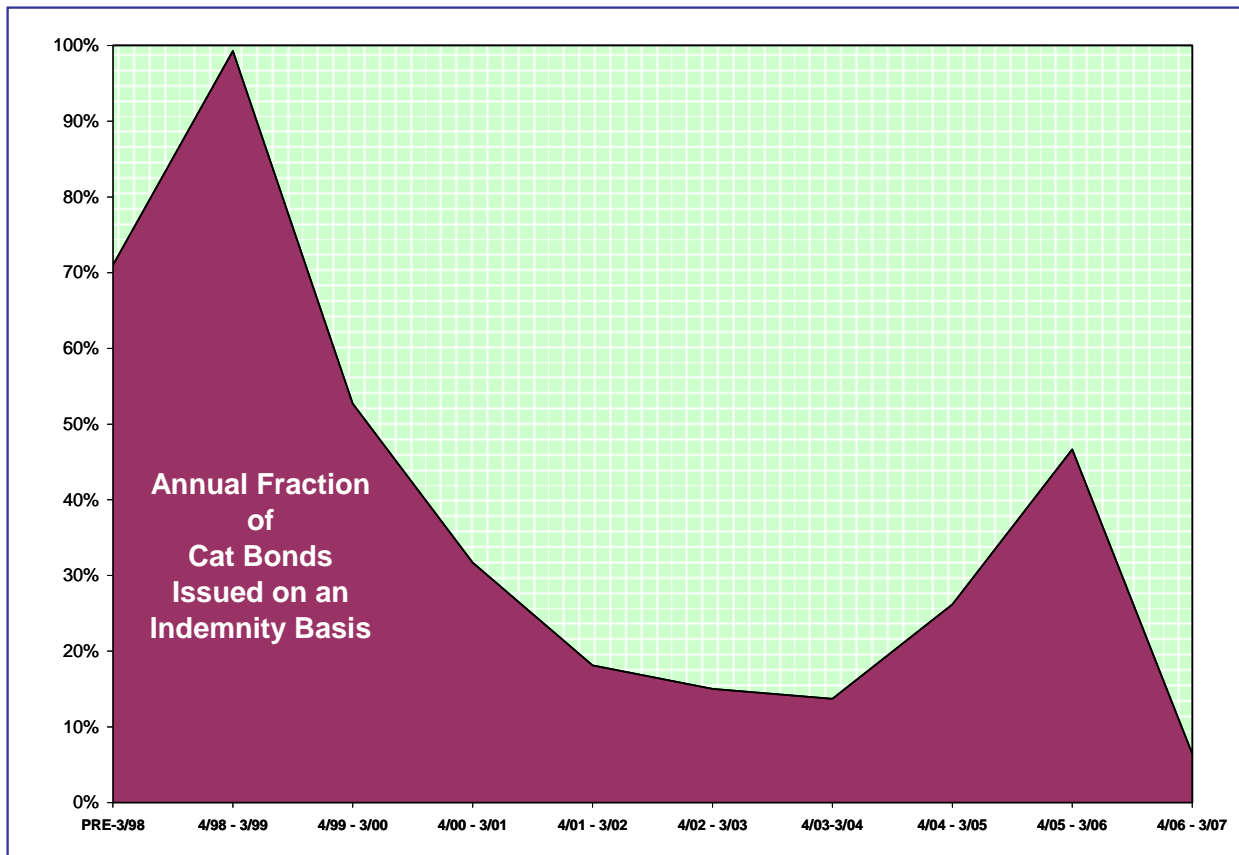


Figure 3, Appendix

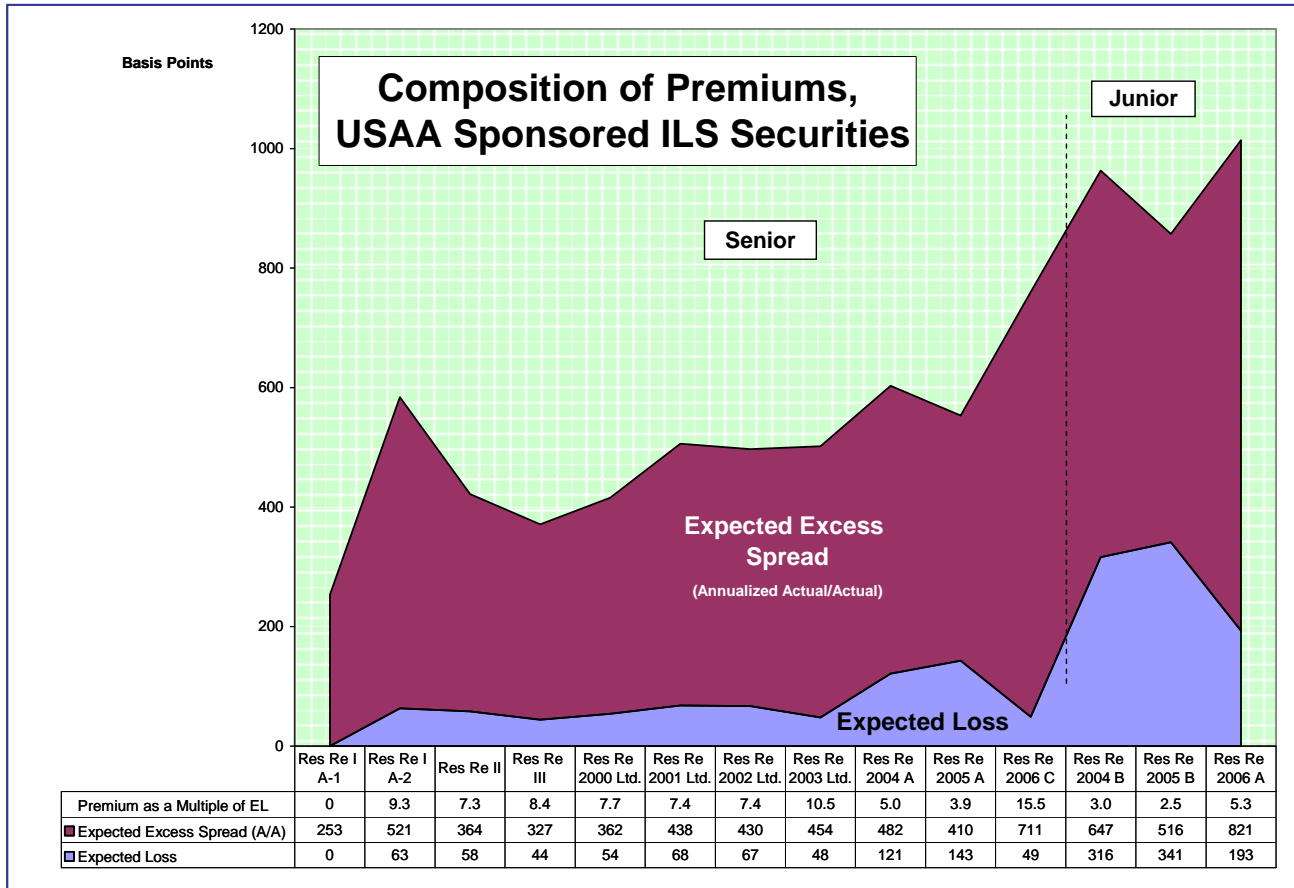


Figure 4, Appendix

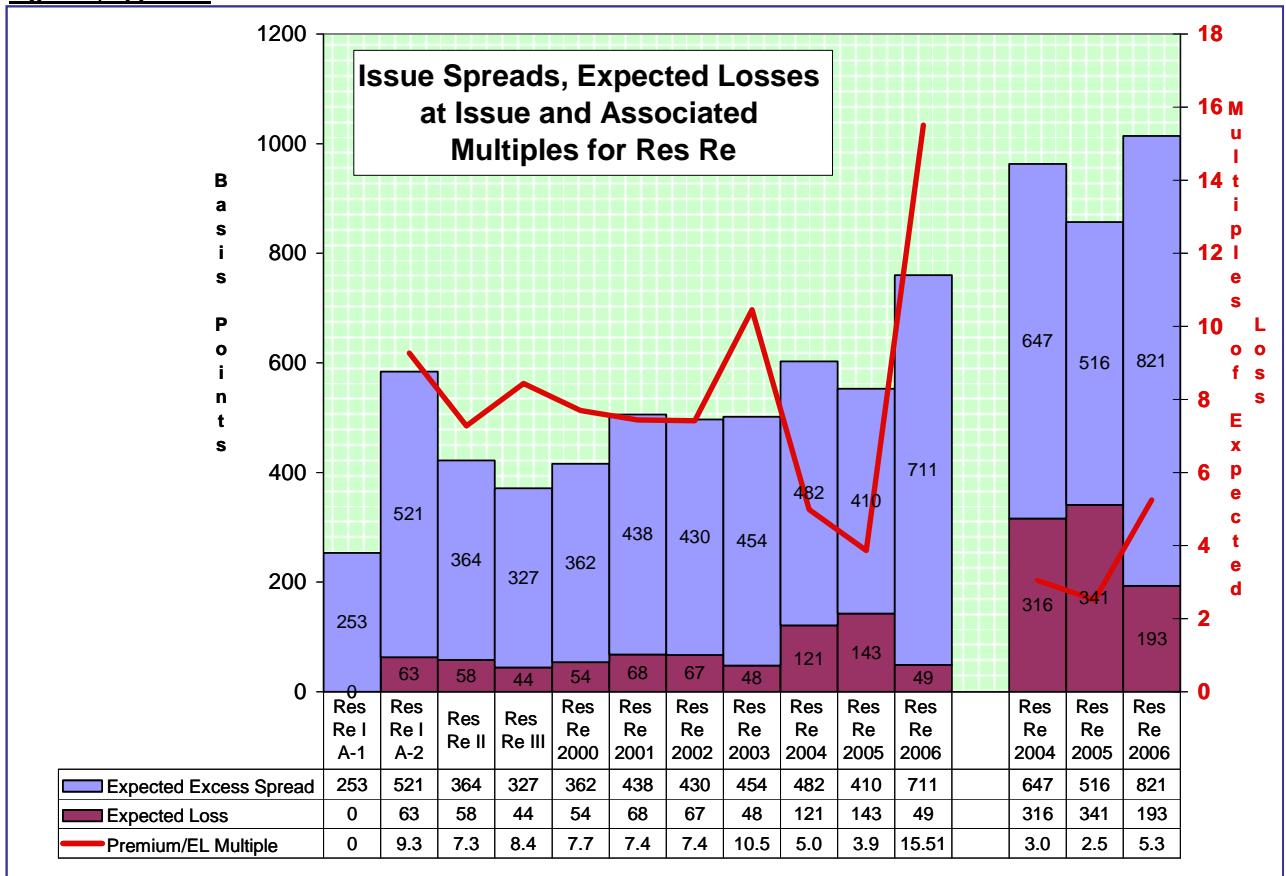


Figure 5, Appendix

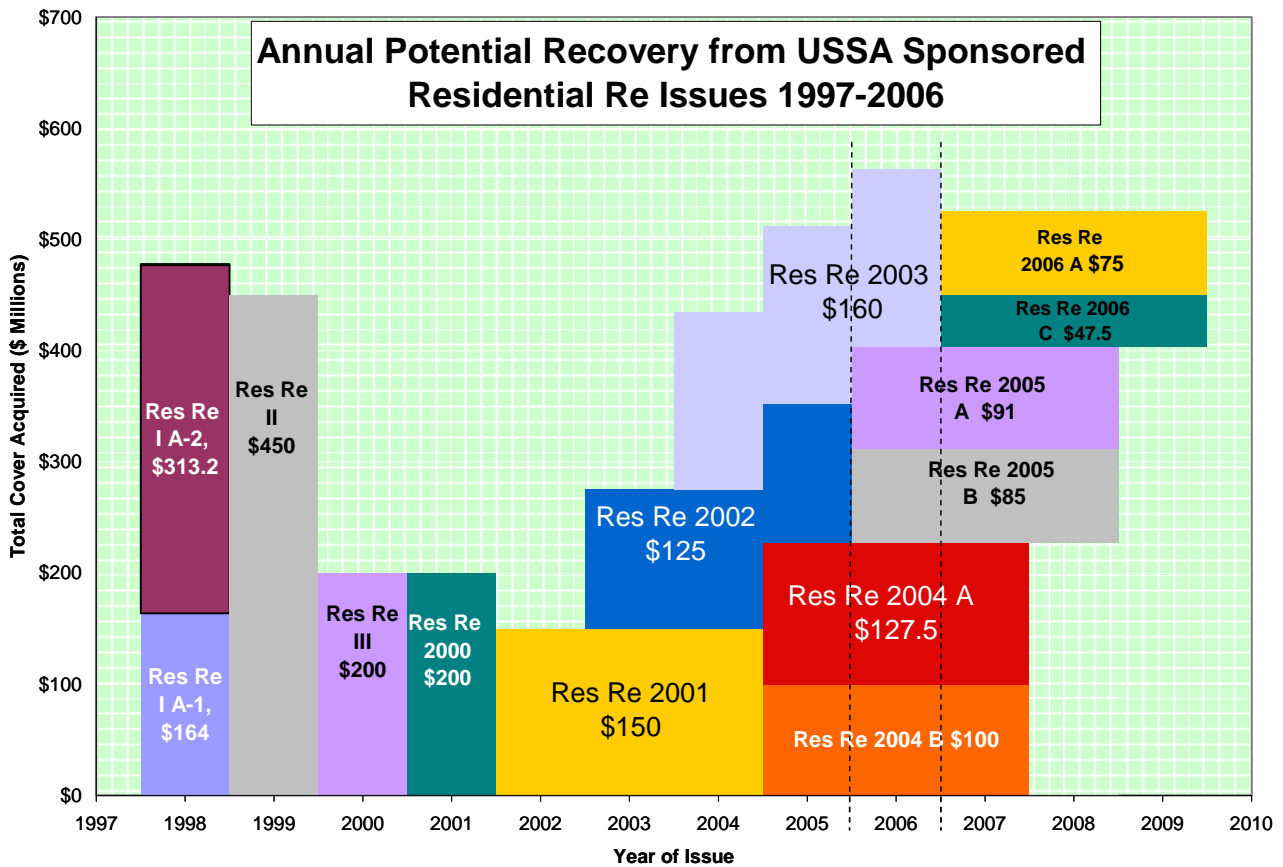


Figure 6, Appendix

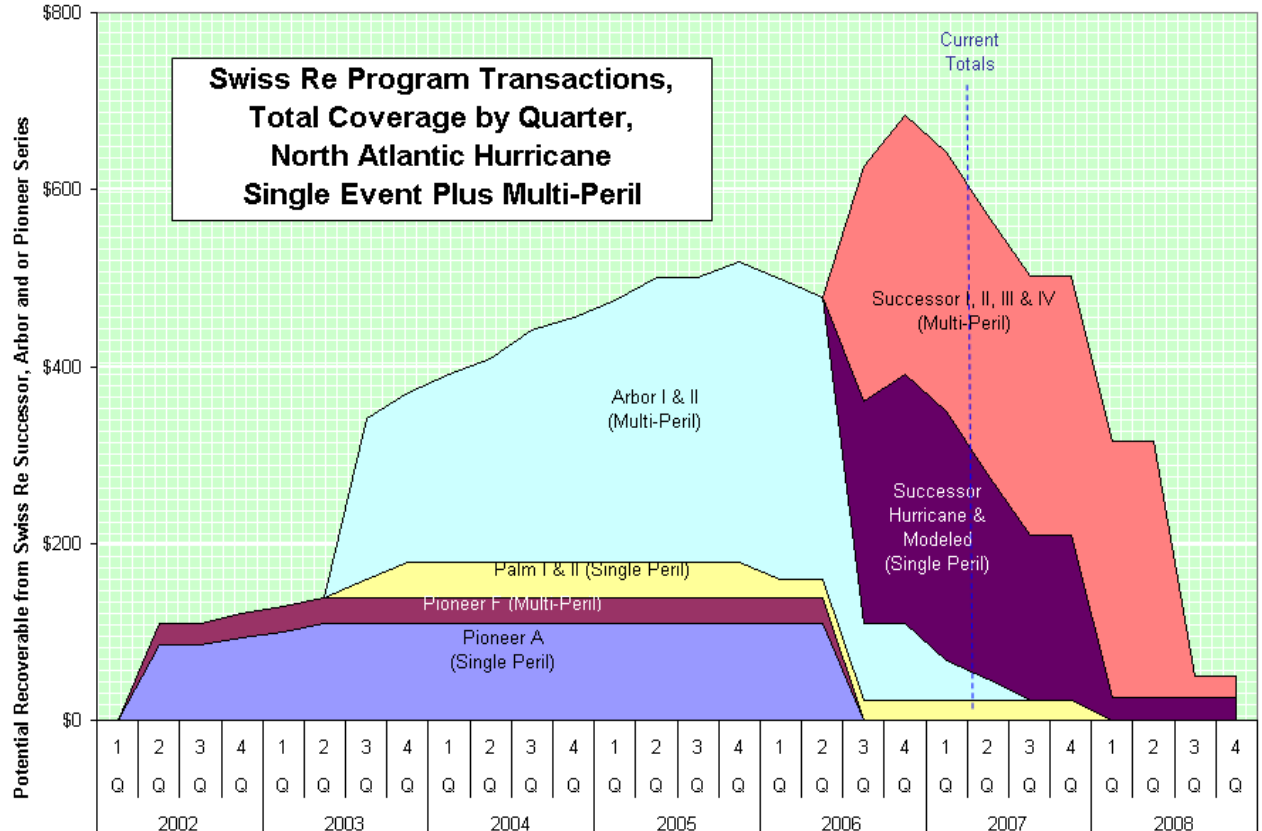


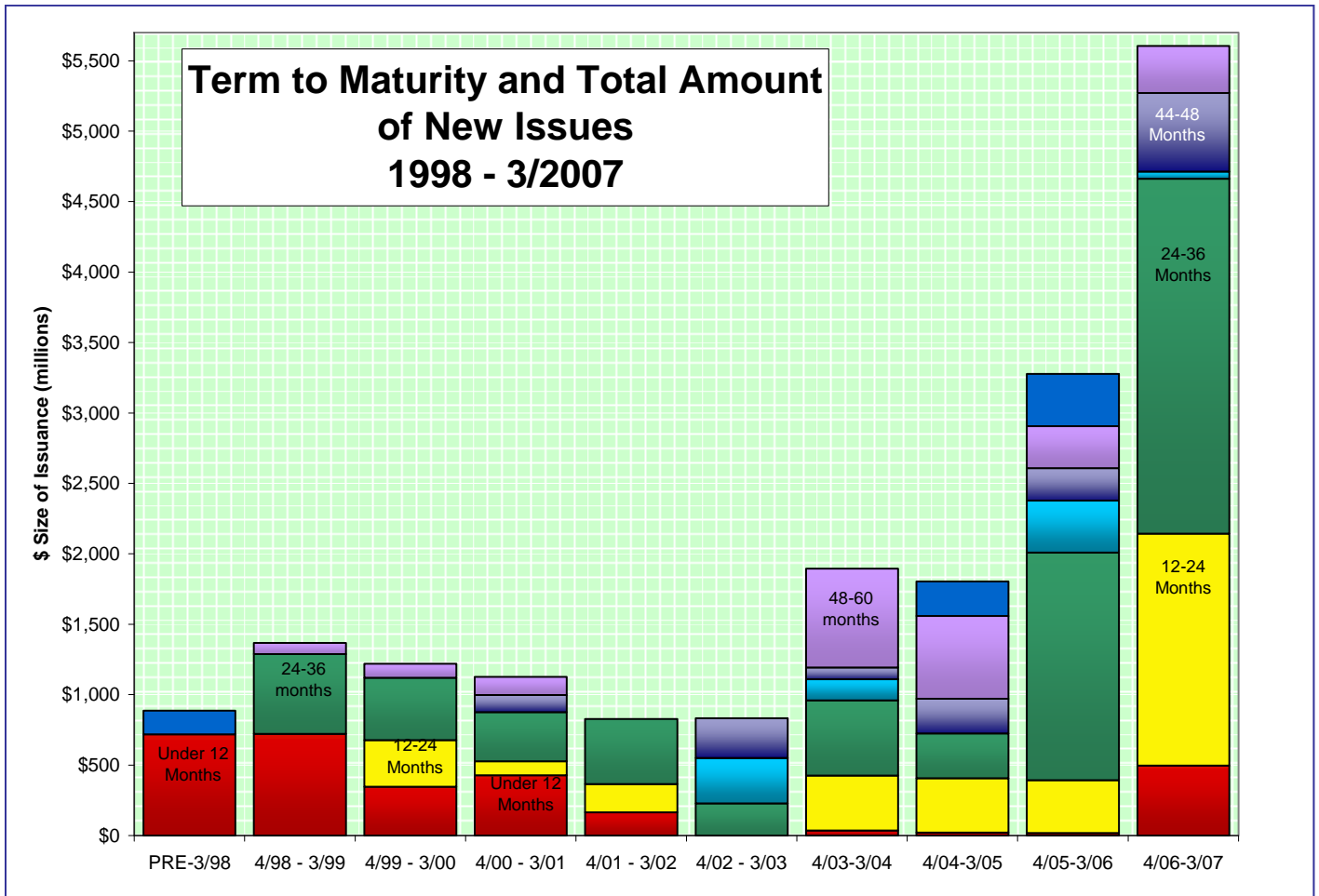
Table 4. Appendix

Successor, As Of Dec. 8, 2006	Amount Issued		All numbers are \$ millions						Maximum Recoverable by Risk									
	Succ I Class A	Succ I Class B	Succ II Class A	Succ II Class B	Succ II Class C	Succ II Class D	Succ II Class E	Succ III Class A	Succ III Class B	Succ IV Class A	Succ IV Class B	Succ V Class A	Succ V Class B	US Wind	Cal Quake	Japan Quake	EuroWind	
Successor Hurr Ind Class A	0	28.5	73.2	0	0	0	154.25	7.2	0	30	0	0	0	0				
Successor Hurr Ind Class B														14				
Successor Hurr Ind Class C	X							7.2		30	X			44.45				
Successor Hurr Ind Class D									X					44.5				
Successor Hurr Ind Class E		28.5												148.5				
Successor Hurr Ind Class F														54				
Successor Hurr Mod Class A			73.2	X										73.2				
Successor Hurr Mod Class B					X									42.25				
Successor Hurr Mod Class C						X								0				
Successor Hurr Mod Class D							X							0				
Successor Hurr Mod Class E														154.25				
Successor CalQuake Industry A	X	28.5	73.2	X	X	X	154.25								255.95			
Successor CalQuake Industry B															0			
Successor CalQuake Industry C															0			
Successor CalQuake Para Cl A												X			47.5			
Successor CalQuake Para Cl B													X		0			
Successor CalQuake Para Cl C															0			
Successor JapQuake Cl A	X	28.5	73.2	X	X	X	154.25	7.2	X							366.62		
Successor JapQuake Cl B																26.25		
Successor JapQuake Cl C																73.75		
Successor EuroWind Cl A	X		73.2	X				7.2	X	30	X						321.33	
Successor EuroWind Cl B																	25.7	
Successor EuroWind Cl C		28.5				X	154.25							575.15	303.45	466.62	668.53	
Total Issued, Single Peril																		898.35
Total Issued, Multi-Peril																		293.15
Total Successor Issued																		1191.5

TERM TO MATURITY

Amount in \$ Millions

Maturity (in Months)	PRE-3/98	4/98 - 3/99	4/99 - 3/00	4/00 - 3/01	4/01 - 3/02	4/02 - 3/03	4/03-3/04	4/04-3/05	4/05-3/06	4/06-3/07	TOTAL
12	717.6	720.6	345.7	427	165	0	35.5	21.5	18	495.8	2946.7
24	0	0	332.1	100	200	0	390	384.8	375	1646.8	3428.7
36	0	566.3	441.6	350	461.9	228	533.4	317.5	1615	2519.8	7033.5
42	0	0	0	0	0	321.9	150	0	369	51	891.9
48	0	0	0	120	0	282.3	83.2	247.5	230	557.5	1520.5
60	0	80	100	129	0	0	702.5	587	300	334	2232.5
OVER 60	168.5	0	0	0	0	0	0	245	370	0	783.5
TOTAL	886.1	1366.9	1219.4	1126	826.9	832.2	1894.6	1803.3	3277	5604.9	18837.3
AVERAGE											
DEAL SIZE:	127	195	111	113	138	33	70	86	182	76	
% LONGER THAN 12 MONTHS:	19%	47%	72%	62%	80%	100%	98%	99%	99%	91%	

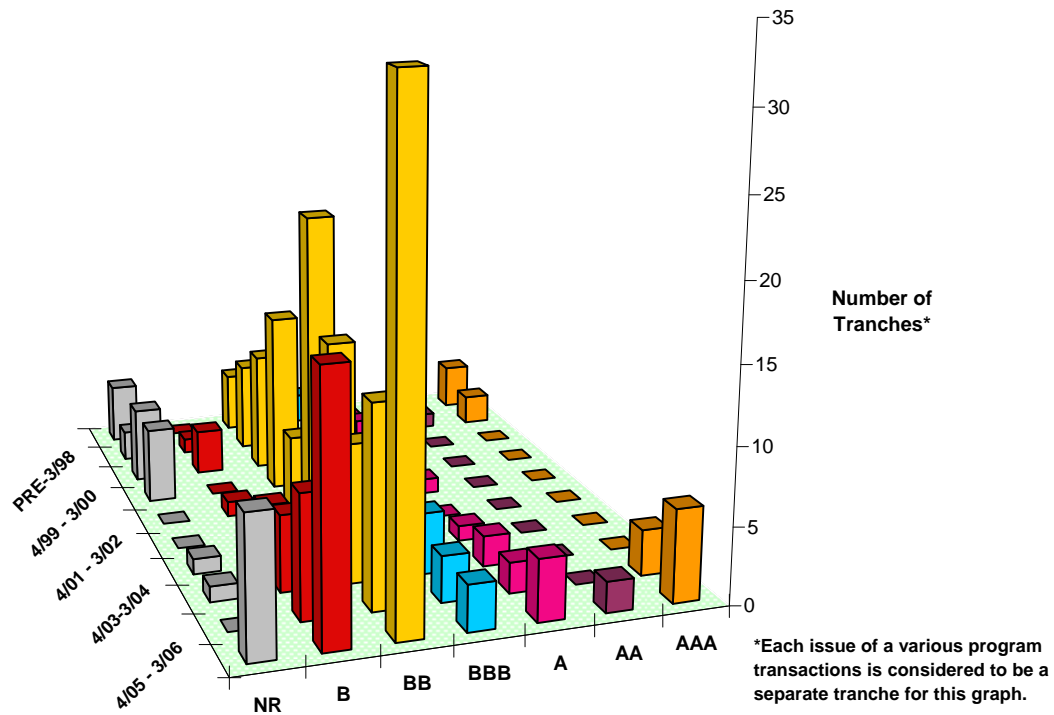


CREDIT RATINGS (by tranche)

Amount in \$ Millions

	PRE-3/98	4/98 - 3/99	4/99 - 3/00	4/00 - 3/01	4/01 - 3/02	4/02 - 3/03	4/03 - 3/04	4/04 - 3/05	4/05 - 3/06	4/06 - 3/07	TOTAL
AAA	230.3	23	0	0	0	0	0	0	436	526	1215.3
AA	0	60.7	0	0	0	0	0	0	0	268	328.7
A	0	283.1	0	0	50	0	26.5	237	215	244	1055.6
BBB	82	0	173	41	200	72.8	870.6	412.5	189	234	2274.9
BB	515	869.1	773.4	1057.9	572	759.4	712.6	879	1751	3400	11289.4
B	0	21	141.6	0	4.9	0	184.9	184.5	686	623	1845.9
NR	58.7	110	131.4	27.1	0	0	100	90	0	310	827.2
	886	1366.9	1219.4	1126	826.9	832.2	1894.6	1803	3277	5605	18837
AVERAGE TRANCHE SIZE	68.2	105.1	64.2	62.6	103.4	33.3	70.2	85.9	113.0	75.7	
% OF ISSUES BELOW INVESTMENT GRADE	65%	73%	86%	96%	70%	91%	53%	64%	74%	77%	
DOWNGRADES OR WATCHES	NONE	NONE	HALYARD RE (SOREMA)	NONE				Phoenix QW II	KAMP Avalon		
LOSSES	NONE	NONE	RELIANCE IV GEORGETOWN RE	NONE							

RATINGS CHANGES OVER TIME (by Number of Rated Tranches) 1998 - 3/2007



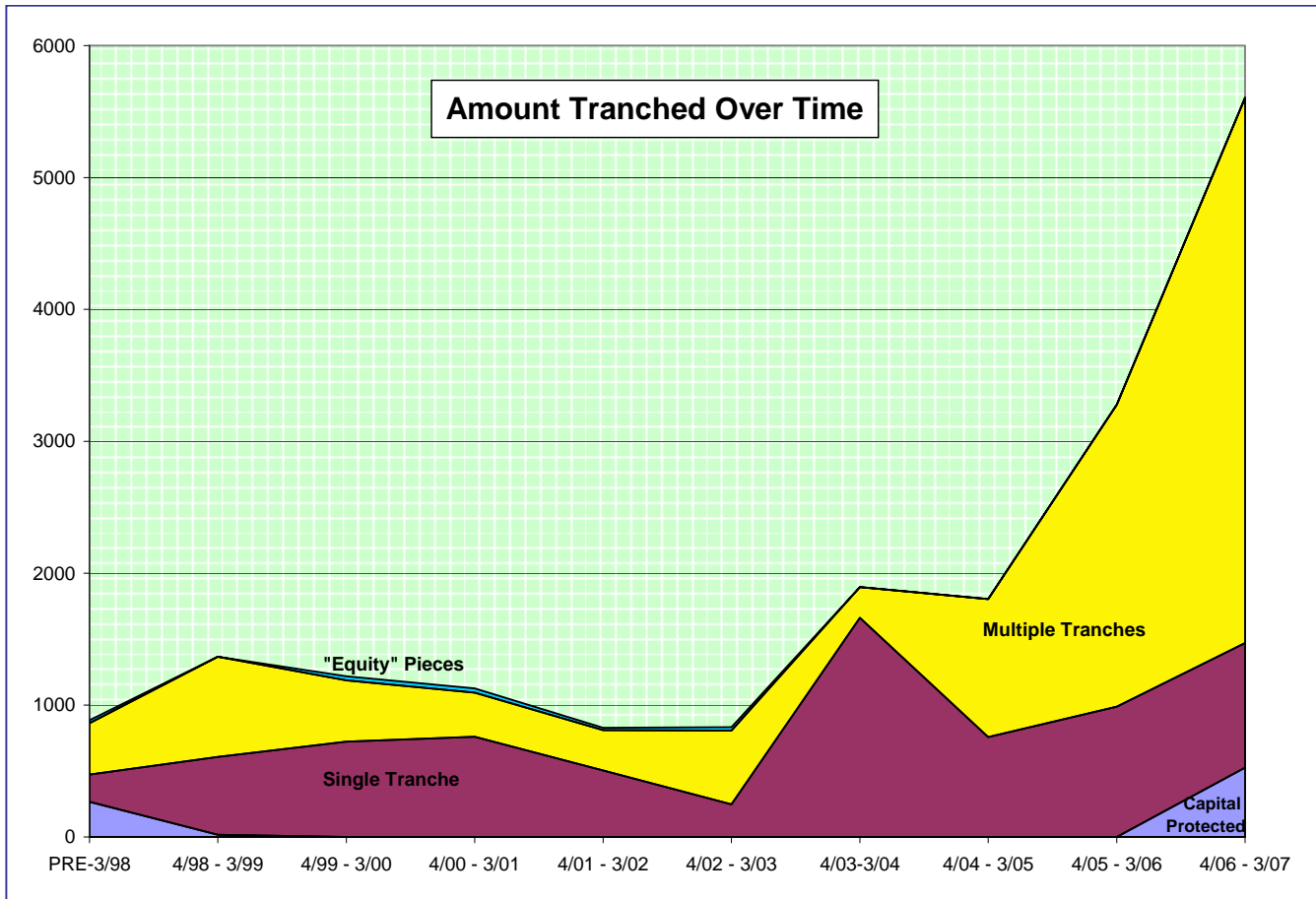
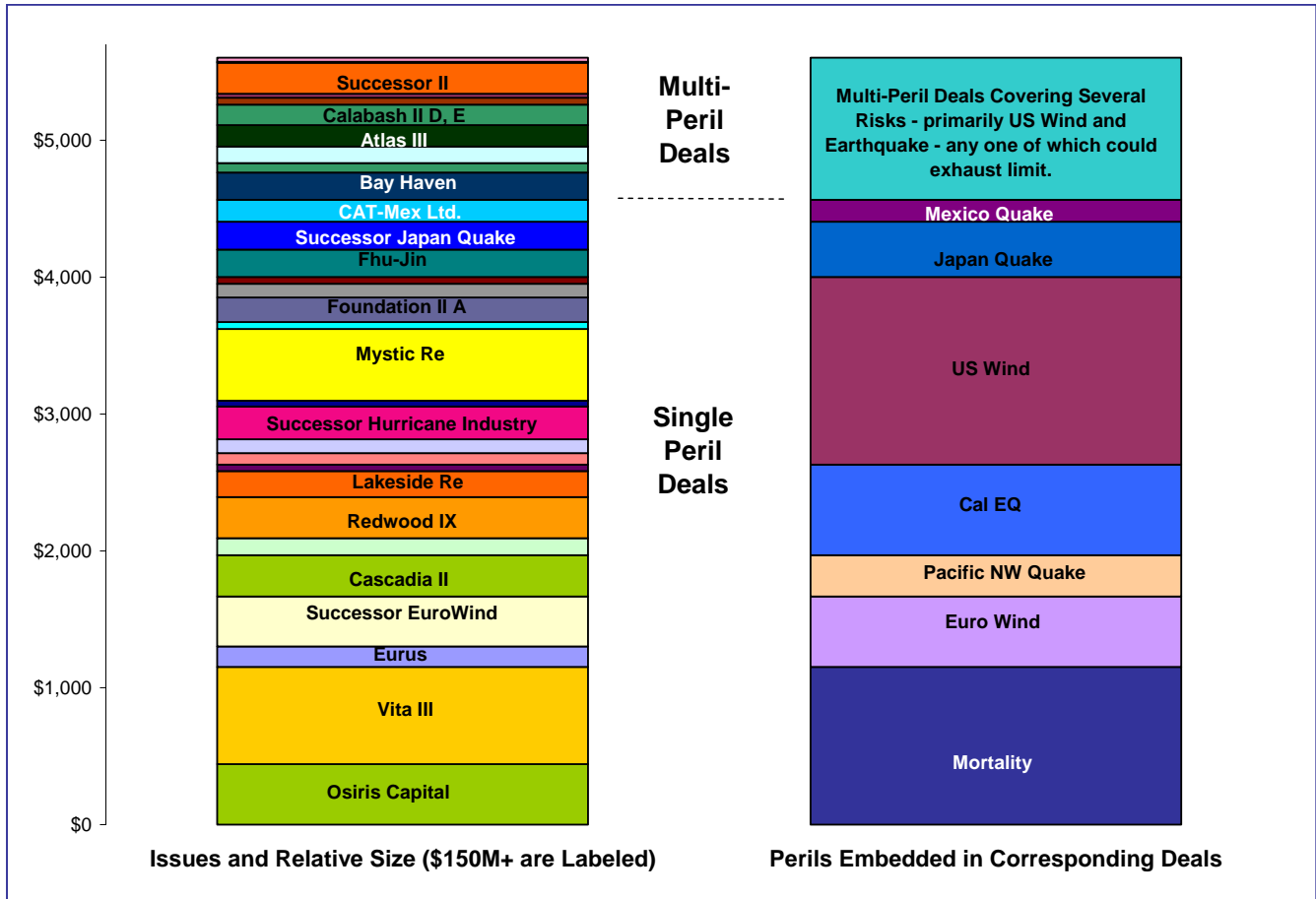
CO-MANAGERS-(As listed on PPM, there may be multiple co-managers for each issue)

RANKED BY \$ AMOUNT OF ISSUE FOR 4/06 - 9/06

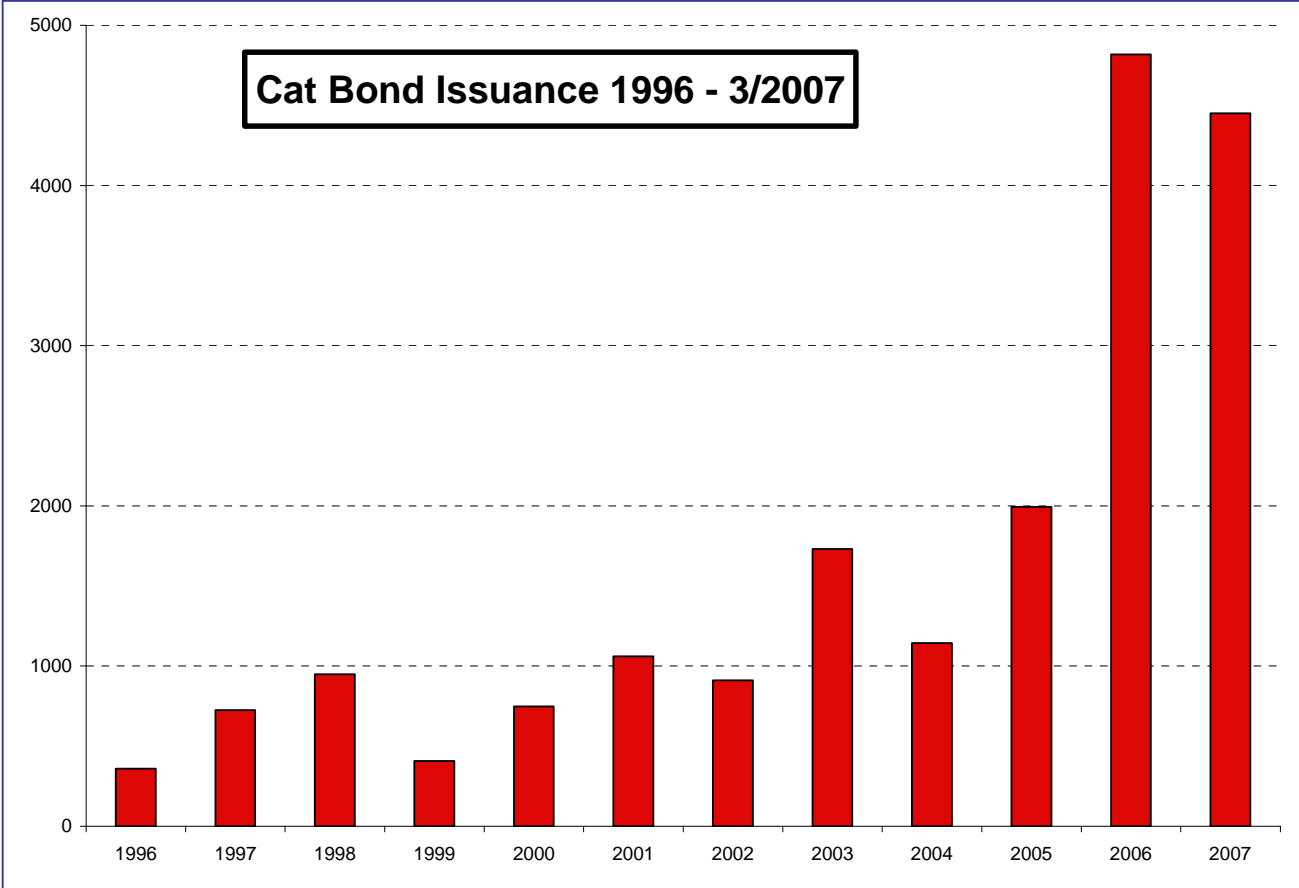
	AMOUNT OF ISSUES AS CO-MGR										TOTAL
	PRE-3/98	4/98 - 3/99	4/99 - 3/00	4/00 - 3/01	4/01 - 3/02	4/02 - 3/03	4/03-3/04	4/4 - 3/05	4/5 - 3/06	4/06 - 3/07	
SWISS RE*	237	0	0	220	365	674.2	1587.6	1138.3	1222	3930	9374.1
GOLDMAN SACHS	729.1	1176.9	1052.4	819	300	300	160	565	1686	1425	8213.4
LEHMAN	477	500	450	740	515	125	0	0	150	726.5	3683.5
AON*	0	80	317	67	194.9	33	100	100	0	640	1531.9
BNP PARIBAS	0	0	0	0	0	0	160	397.5	306	520	1383.5
CDC IXIS CAP MKTS*	0	0	0	0	0	0	147	0	0	442	589
ABN Amro	0	0	0	0	0	0	0	0	0	200.3	200.3
DEUTSCHE BANK SEC	0	0	0	0	0	0	0	0	0	160	160
MARSH*	0	0	300	0	0	0	100	0	0	0	400
MERRIL LYNCH	477	500	217	320	150	125	0	0	0	0	1789
MSDW	0	0	0	0	161.9	0	0	0	0	0	161.9
AM RE*	0	0	182.1	420	0	0	0	0	0	0	602.1
BLANCHE*	0	54	45.7	90	0	0	0	0	0	0	189.7
CENTRE*	83.6	56.6	0	0	0	0	0	0	0	0	140.2
CHASE	83.6	56.6	0	0	0	0	0	0	0	0	140.2
DLJ	83.6	56.6	0	0	0	0	0	0	0	0	140.2
ZURICH*	83.6	56.6	0	0	0	0	0	0	0	0	140.2
CSFB	137	0	0	0	0	0	0	0	0	0	137
LANE FINANCIAL*	20	10	0	0	0	0	0	0	0	0	30
SOC GEN	0	0	0	0	0	0	0	0	0	0	0
	2411.5	2547.3	2564.2	2676	1686.8	1257.2	2254.6	2200.8	3364	8043.8	29006.2
GOLDMANS											
SACHS SHARE	30%	46%	41%	31%	18%	24%	7%	26%	50%	18%	
LEHMAN BROS.											
SHARE	20%	20%	18%	28%	31%	10%	0%	0%	4%	9%	
REINSURERS AND											
INTERMEDIARIES*	18%	10%	33%	30%	33%	56%	86%	56%	36%	62%	
INVESTMENT											
BANKERS	82%	90%	67%	70%	67%	44%	14%	44%	64%	38%	

REFERENCE SET

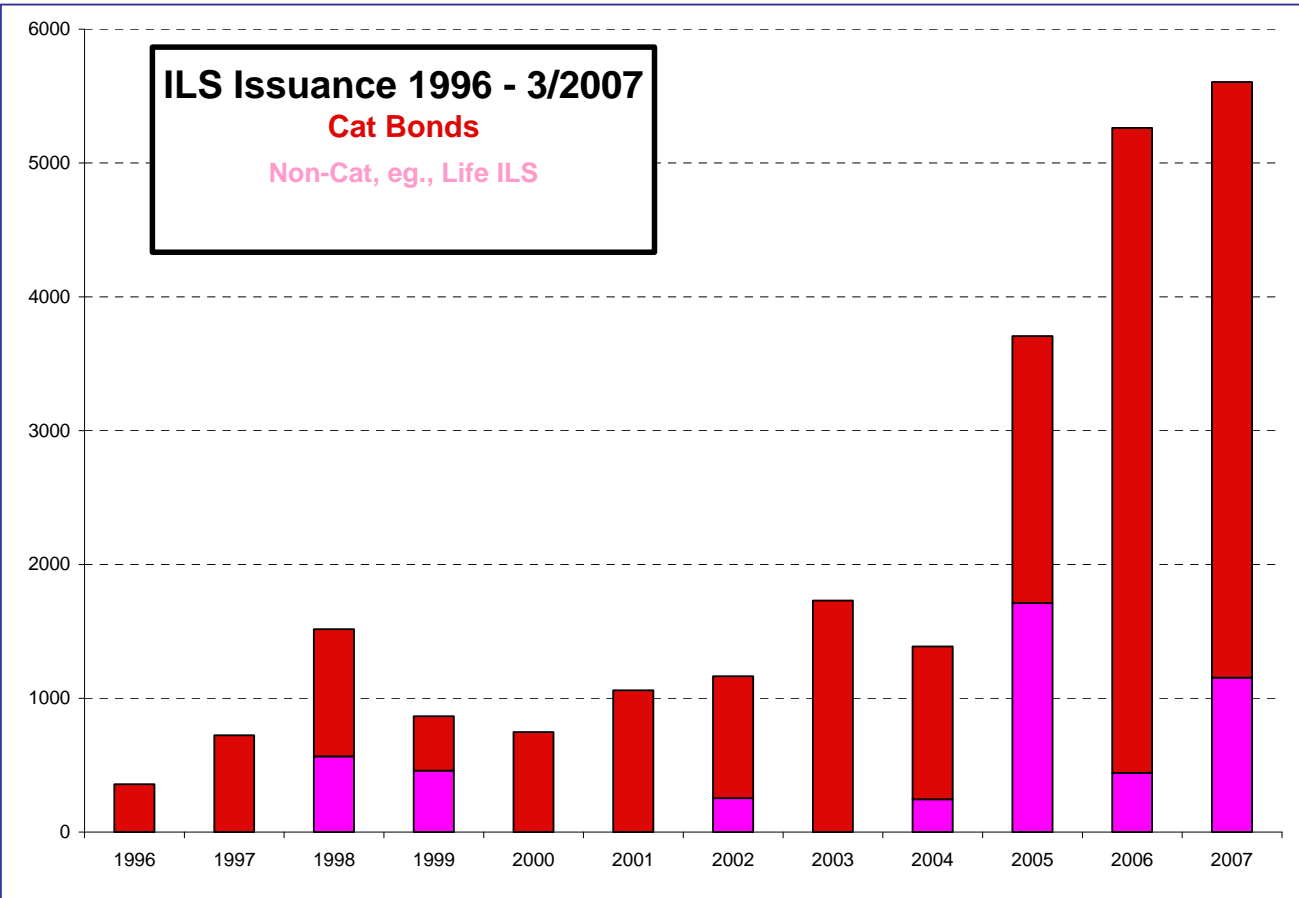
PRE-3/98	4/98 - 3/99	4/99 - 3/00	4/00 - 3/01	4/01 - 3/02	4/02 - 3/03	4/03-3/04	4/4-3/05	4/5-3/06	4/06-3/07
RELINCE I GEORGETOWN RE RESIDENTIAL RE I SWISS RE CAL QUAKE PARAMETRIC RE TRINITY I RELINCE II	RELINCE IV XL MID-OCEAN RESIDENTIAL RE II PACIFIC RE MOSAIC I TRINITY II GRAMERCY	JUNO DOMESTIC RE RESIDENTIAL RE III CONCENTRIC RE MOSAIC II GOLD EAGLE NAMAZU ATLAS SEISMIC KELVIN HALYARD RE	ALPHA WIND 2000-A RESIDENTIAL RE 2000 NEHI MEDITERRANEAN RE PRIME HURRICANE PRIME EQEW WESTERN CAPITAL HALYARD RE GOLD EAGLE 2000 SR WIND	ATLAS RE II REDWOOD CAPITAL I REDWOOD CAPITAL II RESIDENTIAL RE 2001 TRINOM	FUJIYAMA PIONEER (6 Classes and 4 Series) RESIDENTIAL RE 2002 ST AGATHA RE STUDIO RE	ARBOR I LTD. ARBOR II LTD. FORMOSA RE LTD. OAK CAPITAL LTD. PALM CAPITAL LTD. PHOENIX QUAKE LTD. PHOENIX QUAKE WIND LTD. PHOENIX QUAKE WIND II LTD. PIONEER 2000 LTD. (4 Classes with 5 Issues) PYLON LTD. REDWOOD III LTD. REDWOOD IV LTD. RESIDENTIAL RE 2003 SAKURA LTD. SEQUOIA CAPITAL LTD. VITA CAPITAL LTD.	ARBOR I LTD. - 4 Issues AURA RE plc FOUNDATION RE LTD. GI CAPITAL HELIUM 04 LTD. OAK CAPITAL LTD. QUEENSGATE SPL REDWOOD V LTD. REDWOOD VI LTD. RESIDENTIAL RE 2004 SEQUOIA CAPITAL LTD. VITA CAPITAL II	AIOLIS LTD. ALPS CAPITAL II ARBOR I LTD. - 2 Issues ATLANTIC & WESTERN I ATLANTIC & WESTERN II AUSTRALIS LTD. AVALON RE LTD. CASCADIA LTD. CHAMPLAIN LTD. CRYSTAL CREDIT FCC SPARC FOUNDATION RE D KAMP RE LTD. REDWOOD CAPITAL VII REDWOOD CAPITAL VIII RESIDENTIAL RE 2005	ATLAS RE III AUSTRALIS II BAY HAVEN LTD CALABASH RE CALABASH RE II CARILLON LTD. CASCADIA II LTD. CAT-MEX LTD. DREWCAT CAPITAL EURUS LTD FHU-JIN LTD. FOUNDATION II LAKEIDE RE MYSTIC RE OSIRIS CAPITAL PLC REDWOOD CAPITAL IX RESIDENTIAL RE 2006 SHACKLETON RE LTD. SUCCESSOR HURR IND SUCCESSOR HURR MODL SUCCESSOR EURO WIND SUCCESSOR CAL QUAKE SUCCESSOR JAPAN QK SUCCESSOR I SUCCESSOR II SUCCESSOR III SUCCESSOR IV VASCO RE 2006 VITA CAPITAL III
NOTE: Other Deals, including contingent deals, not part of the summary analysis: Winterthur AIG Hannover	Reliance III Option Allianz Option Modernis Securs	Circle Mailhama Cloc Tokio Mar/St Farm Swap Saab Rolls Royce	CEA West LB K3 CLOOS RBC, MICHELIN, MBIA			GOLDEN GOAL FINANCE BARCLAYS LIFE ASSURANCE LILACS (Life Insurance and Life Annuities-backed Charitable Securities)	FLAC HOLDINGS LLC EIB LONGEVITY ORKNEY HOLDINGS LLC	INC TERM SECURITIES ORKNEY HOLDINGS II	GRAND ISLE KEPLER

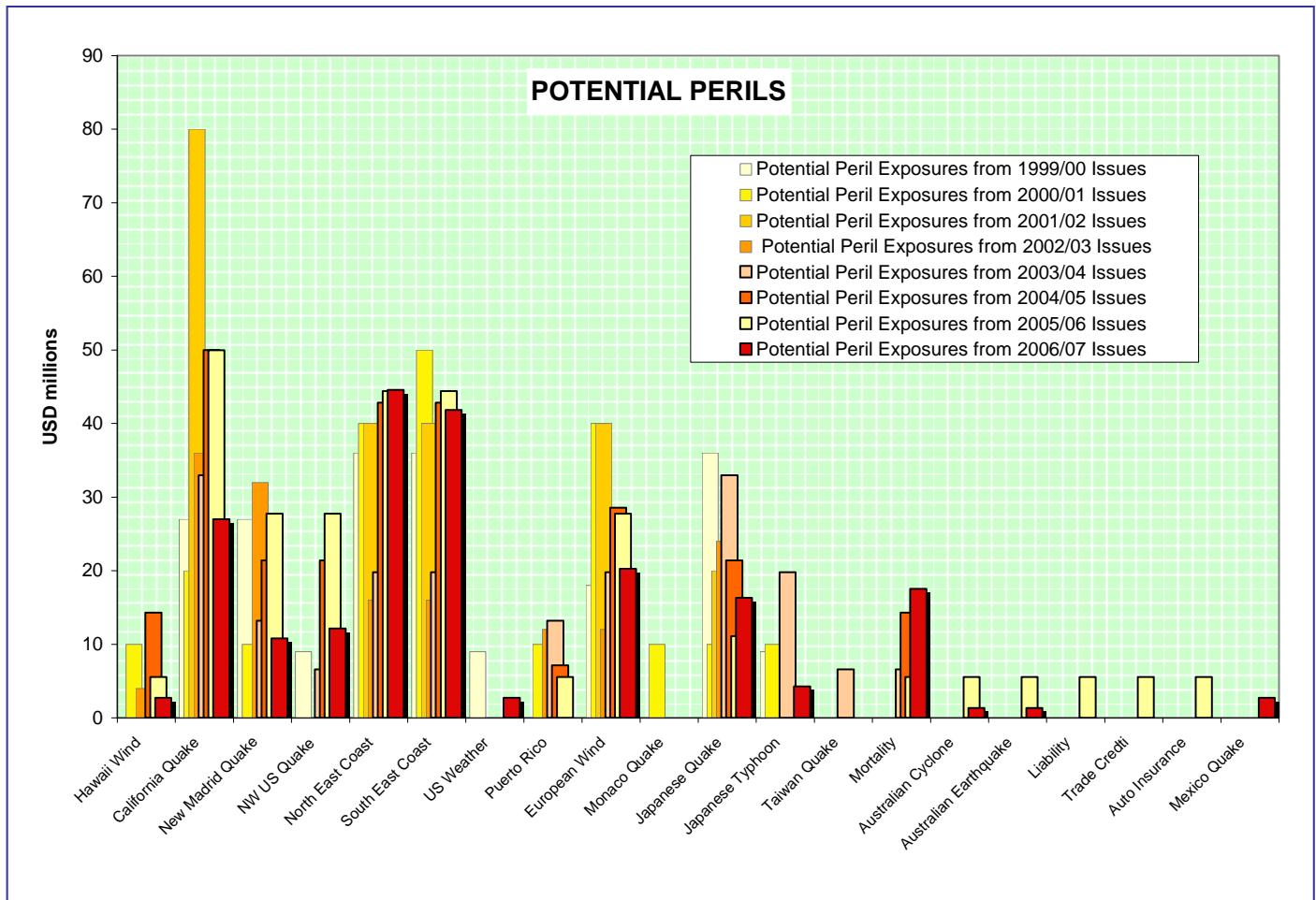


Cat Bond Issuance 1996 - 3/2007



ILS Issuance 1996 - 3/2007
Cat Bonds
 Non-Cat, eg., Life ILS





The "Potential Perils" graph is an attempt to show what perils a naïve investor would face if he/she purchased a portfolio of cat bonds each year. Assume the investor had \$100 to spend and every deal was available. With 10 deals he would buy \$10's worth of each bond; if 20 deals were available he could invest \$5 in each one, etc. Now assuming that pattern, what perils would he be exposed to? The red foreground bars represent this year's portfolio, other bars show prior years.

The horizontal axis shows all the perils that we have seen securitized. The vertical axis shows how much money would be lost by this portfolio from a maximal event in each peril. Thus a repeat of the San Francisco 1906 earthquake would lose this portfolio holder 50% of his investment. And, this loss would accumulate from several of the bonds he held.

Since this is what the investor gets, it is, conversely, the risk that the traditional reinsurance market is trying to shed to the cat bond market. So the graph also tries to show where peril demand lies. Clearly, it is in the hazard zones of US wind and California quake.

Finally, note that this portfolio shows no "management" on the part of the "naïve" investor. He simply puts an equal chip on each risk shown. The sophisticated investor will seek to manage his portfolio so as to control his exposure to each peril. That is the art of the professional underwriter.

Second Quarter 2006 (6/30/06) Secondary Market Prices From Three Dealers	Issue Date	Sponsor	Issuer	Spread at Issue	Average Market Indications
	Nov-05	Munich Re	Aiolis Ltd.	4.75%	4.73%
	Dec-03	Swiss Re	Arbor Capital I-III	15.00%	18.81%
	Sep-04	Swiss Re	Arbor Capital I-VII	12.75%	19.28%
	Dec-04	Swiss Re	Arbor Capital I-VII	12.50%	18.71%
	Mar-05	Swiss Re	Arbor Capital I-VIII	12.25%	18.36%
	Jun-05	Swiss Re	Arbor Capital I-X	12.00%	17.30%
	Dec-05	Swiss Re	Arbor Capital I-X	14.50%	18.77%
	Oct-05	PXR	Atlantic & Western A	5.75%	7.75%
	Oct-05	PXR	Atlantic & Western B	10.00%	13.04%
	Dec-05	PXR	Atlantic & Western II A	6.00%	9.20%
	Dec-05	PXR	Atlantic & Western II B	6.25%	8.14%
	Jan-05		Aura Re plc	2.70%	1.32%
	Jan-06	Swiss Re	Australis Ltd	4.00%	3.87%
	Jun-05	OCIL	Avalon Re Class A-2	2.13%	8.74%
	Jun-05	OCIL	Avalon Re Class B	3.60%	25.70%
	Jun-05	OCIL	Avalon Re Class C	7.75%	78.21%
New Issue in Qtr.	Jun-06	Swiss Re	Calabash Re A-1	8.50%	8.65%
New Issue in Qtr.	May-06	Munich Re	Carillon A-1	10.00%	10.42%
New Issue in Qtr.	Jun-05	FM Global	Cascadia Ltd.	3.13%	3.00%
New Issue in Qtr.	May-06	Swiss Re	CAT-Mex Ltd A	2.35%	1.54%
	May-06	Swiss Re	CAT-Mex Ltd B	2.30%	1.51%
	Dec-05	Montpelier Re	Champlain Ltd A	12.75%	13.07%
	Dec-05	Montpelier Re	Champlain Ltd B	13.50%	14.69%
New Issue in Qtr.	Jun-06	Dominion Res	Drewcat Capital	20.50%	20.09%
	Aug-03	Central Re	Formosa Re	3.30%	3.14%
	Nov-04	Hartford	Foundation Re Class A	4.10%	7.29%
	Nov-04	Hartford	Foundation Re Class B	1.95%	2.77%
	Nov-04	Hartford	Foundation Re Class D	7.25%	8.58%
	Jun-04		GI Capital	3.15%	2.91%
	Jun-04	Converium	Helix 2004	5.40%	5.78%
	Jun-05	Zurich	KAMP Re	5.30%	0.00%
New Issue in Qtr.	Jun-05	Liberty Mutual	Mystic Re A	7.00%	6.95%
	Jul-03	Swiss Re	Oak Capital	4.75%	5.30%
	Jul-03	Swiss Re	Palm Capital	5.75%	8.83%
	Dec-97	Tokio Marine and Fire	Parametric Re	4.30%	2.94%
	Jun-03	Swiss Re	Phoenix Quake	2.45%	1.63%
	Jun-03	Swiss Re	Phoenix Quake/Wind	2.45%	1.68%
	Jun-03	Swiss Re	Phoenix Quake/Wind II	3.50%	9.21%
	Dec-03	Elec de Fr	Pylon A	1.50%	1.08%
	Dec-03	Elec de Fr	Pylon B	3.90%	3.49%
	Dec-04	Swiss Re	Redwood V	4.15%	6.62%
	Dec-04	Swiss Re	Redwood VI	4.05%	6.70%
	Feb-06	Swiss Re	Redwood VII	5.25%	6.07%
	Feb-06	Swiss Re	Redwood VIII	5.25%	6.07%
	May-04	USAA	Residential Re 2004 Class A	5.95%	10.18%
	May-04	USAA	Residential Re 2004 Class B	9.50%	16.33%
	May-05	USAA	Residential Re 2005 Class A	5.45%	10.27%
	May-05	USAA	Residential Re 2005 Class B	8.45%	16.19%
New Issue in Qtr.	Jun-06	USAA	Residential Re 2006 Class A	10.00%	10.80%
New Issue in Qtr.	Jun-06	USAA	Residential Re 2006 Class C	7.50%	7.56%
	Jul-03	Swiss Re	Sakura Capital	4.50%	4.11%
	Mar-04	Swiss Re	Sequoia Capital	5.75%	7.38%
New Issue in Qtr.	Jun-06	Swiss Re	Successor Hurr Ind Class B-I	11.00%	11.23%
New Issue in Qtr.	Jun-06	Swiss Re	Successor Hurr Ind Class C-I	15.30%	15.42%
New Issue in Qtr.	Jun-06	Swiss Re	Successor Hurr Ind Class D-I	22.75%	23.02%
New Issue in Qtr.	Jun-06	Swiss Re	Successor Hurr Ind Class D-II	17.10%	17.41%
New Issue in Qtr.	Jun-06	Swiss Re	Successor Hurr Ind Class E-I	32.60%	32.96%
New Issue in Qtr.	Jun-06	Swiss Re	Successor Hurr Ind Class E-II	24.50%	25.21%
New Issue in Qtr.	Jun-06	Swiss Re	Successor Hurr Ind Class F-I	13.30%	13.43%
New Issue in Qtr.	Jun-06	Swiss Re	Successor Hurr Mod Class B-1	10.65%	10.75%
New Issue in Qtr.	Jun-06	Swiss Re	Successor CalQuake Para Cl A-1	7.25%	7.19%
New Issue in Qtr.	Jun-06	Swiss Re	Successor JapQuake Cl A-1	4.25%	4.18%
New Issue in Qtr.	Jun-06	Swiss Re	Successor JapQuake Cl B-I	5.85%	5.78%
New Issue in Qtr.	Jun-06	Swiss Re	Successor JapQuake Cl C-I	9.50%	9.42%
New Issue in Qtr.	Jun-06	Swiss Re	Successor JapQuake Cl C-II	9.50%	9.33%
New Issue in Qtr.	Jun-06	Swiss Re	Successor EuroWnd Cl A-I	5.25%	5.35%
New Issue in Qtr.	Jun-06	Swiss Re	Successor EuroWnd Cl A-II	5.25%	5.42%
New Issue in Qtr.	Jun-06	Swiss Re	Successor EuroWnd Cl B-I	7.00%	7.10%
New Issue in Qtr.	Jun-06	Swiss Re	Successor EuroWnd Cl C-I	12.00%	26.76%
New Issue in Qtr.	Jun-06	Swiss Re	Successor EuroWnd Cl C-II	12.00%	26.89%
New Issue in Qtr.	Jun-06	Swiss Re	Successor II Class A-I	17.50%	17.67%
New Issue in Qtr.	Jun-06	Swiss Re	Successor II Class E-I	39.25%	34.76%
New Issue in Qtr.	Jun-06	Swiss Re	Successor III Class A-I	21.00%	21.27%
New Issue in Qtr.	Jun-06	Swiss Re	Successor IV Class A-I	16.50%	16.72%
New Issue in Qtr.	Jun-06	Balboa & Subs.	Vasco Re 2006	8.50%	8.55%
			Average - Cat		11.74%

Life Securitizations	Issue Date	Sponsor	Issuer	Spread at Issue	Average Market Indications
	Nov-05	Swiss Re	ALPS Capital II A	0.30%	0.24%
	Nov-05	Swiss Re	ALPS Capital II B	0.36%	0.34%
	Nov-05	Swiss Re	ALPS Capital II C	F716.3	2.05%
	Nov-05	Swiss Re	ALPS Capital II D	F1173.5	6.13%
	Dec-04	Admin Re	Queensgate 2005-A	1.46%	0.80%
	Dec-04	Admin Re	Queensgate 2005-B	2.47%	1.98%
	Feb-06	Scottish Ann	Tartan Capital A	0.19%	0.21%
	Feb-06	Scottish Ann	Tartan Capital B	3.00%	3.18%
	Dec-03	Swiss Re	Vita Capital	1.35%	0.93%
	Apr-05	Swiss Re	Vita Capital II Class B	0.90%	1.41%
	Apr-05	Swiss Re	Vita Capital II Class C	1.40%	2.13%
	Apr-05	Swiss Re	Vita Capital II Class D	1.90%	2.91%
			Average - Life		1.86%
			Average - Combined		10.28%

Other extant securities that may be maturing or are without any secondary prices.	Issue Date	Sponsor	Issuer	Spread at Issue	Average Market Indications
	Dec-04	Admin Re	Queensgate 2005-C		
	Dec-02	Vivendi	Studio Re	5.10%	
	Dec-02	Vivendi	Studio Re Shares	8.00%	

Third Quarter 2006 (9/30/06) Secondary Market Prices From Three Dealers	Issue Date	Sponsor	Issuer	Spread at Issue	Average Market Indications
	Nov-05	Munich Re	Aiolis Ltd.	4.75%	5.43%
	Dec-03	Swiss Re	Arbor Capital I-III	15.00%	17.82%
	Dec-04	Swiss Re	Arbor Capital I-VII	12.50%	17.75%
	Mar-05	Swiss Re	Arbor Capital I-VIII	12.25%	17.79%
	Jun-05	Swiss Re	Arbor Capital I-X	12.00%	16.46%
	Dec-05	Swiss Re	Arbor Capital I-X	14.50%	17.72%
	Oct-05	PXR	Atlantic & Western A	5.75%	7.85%
	Oct-05	PXR	Atlantic & Western B	10.00%	12.04%
	Dec-05	PXR	Atlantic & Western II A	6.00%	8.00%
	Dec-05	PXR	Atlantic & Western II B	6.25%	8.15%
	Jan-05		Aura Re plc	2.70%	2.53%
	Jan-06	Swiss Re	Australis Ltd	4.00%	3.81%
	Jun-05	OCIL	Avalon Re Class A-2	2.13%	9.63%
	Jun-05	OCIL	Avalon Re Class B	3.60%	34.30%
	Jun-05	OCIL	Avalon Re Class C	7.75%	94.52%
	Jun-06	Swiss Re	Calabash Re A-1	8.50%	8.04%
	May-06	Munich Re	Carillon A-1	10.00%	10.43%
New Issue in Qtr.	May-06	Munich Re	Carillon A-2	10.00%	4.34%
New Issue in Qtr.	May-06	Munich Re	Carillon B		6.20%
	Jun-05	FM Global	Cascadia Ltd.	3.13%	3.99%
New Issue in Qtr.	Aug-06	FM Global	Cascadia II Ltd.	4.00%	4.03%
	May-06	Swiss Re	CAT-Mex Ltd A	2.35%	2.33%
	May-06	Swiss Re	CAT-Mex Ltd B	2.30%	2.30%
	Dec-05	Montpelier Re	Champlain Ltd A	12.75%	13.20%
	Dec-05	Montpelier Re	Champlain Ltd B	13.50%	15.52%
	Jun-06	Dominion Res	Drewcat Capital	20.50%	11.66%
	Jul-06	Hannover Re	Eurus	6.25%	6.43%
New Issue in Qtr.	Aug-06	Tokio Marine	Fhu-Jin	3.90%	3.85%
New Issue in Qtr.	Nov-04	Hartford	Foundation Re Class A	4.10%	6.61%
	Nov-04	Hartford	Foundation Re Class B	1.95%	3.49%
	Nov-04	Hartford	Foundation Re Class D	7.25%	8.59%
	Jun-04	Converium	Helix 2004	5.40%	5.78%
	Jun-04	Converium	KAMP Re	5.30%	0.00%
	Jun-04	Converium	Mystic Re A	7.00%	6.95%
	Jul-03	Swiss Re	Oak Capital	4.75%	5.30%
	Jul-03	Swiss Re	Palm Capital	5.75%	8.83%
	Jun-06	Liberty Mutual	Mystic Re A	7.00%	6.08%
	Jul-03	Swiss Re	Oak Capital	4.75%	6.05%
	Jul-03	Swiss Re	Palm Capital	5.75%	4.80%
	Dec-97	Tokio Marine and Fire	Parametric Re	4.30%	3.36%
	Jun-03	Swiss Re	Phoenix Quake	2.45%	1.87%
	Jun-03	Swiss Re	Phoenix Quake/Wind	2.45%	1.91%
	Jun-03	Swiss Re	Phoenix Quake/Wind II	3.50%	9.36%
	Dec-03	Elec de Fr	Pylon A	1.50%	1.43%
	Dec-03	Elec de Fr	Pylon B	3.90%	3.88%
	Dec-04	Swiss Re	Redwood V	4.15%	6.31%
	Dec-04	Swiss Re	Redwood VI	4.05%	6.25%
	Feb-06	Swiss Re	Redwood VII	5.25%	5.95%
	Feb-06	Swiss Re	Redwood VIII	5.25%	5.95%
	May-04	USAA	Residential Re 2004 Class A	5.95%	7.91%
	May-04	USAA	Residential Re 2004 Class B	9.50%	11.76%
	May-05	USAA	Residential Re 2005 Class A	5.45%	9.93%
	May-05	USAA	Residential Re 2005 Class B	8.45%	15.17%
	Jun-06	USAA	Residential Re 2006 Class A	10.00%	10.31%
	Jun-06	USAA	Residential Re 2006 Class C	7.50%	7.10%
	Jul-03	Swiss Re	Sakura Capital	4.50%	4.13%
	Mar-04	Swiss Re	Sequoia Capital	5.75%	7.91%
New Issue in Qtr.	Aug-06	Endurance	Shackleton Re	8.00%	7.81%
	Jun-06	Swiss Re	Successor Hurr Ind Class B-I	11.00%	9.31%
	Jun-06	Swiss Re	Successor Hurr Ind Class C-I	15.30%	12.94%
	Jun-06	Swiss Re	Successor Hurr Ind Class D-I	22.75%	19.43%
	Jun-06	Swiss Re	Successor Hurr Ind Class D-II	17.10%	9.94%
	Jun-06	Swiss Re	Successor Hurr Ind Class E-I	32.60%	27.35%
	Jun-06	Swiss Re	Successor Hurr Ind Class E-II	24.50%	14.67%
	Jun-06	Swiss Re	Successor Hurr Ind Class F-I	49.20%	21.13%
	Jun-06	Swiss Re	Successor Hurr Mod Class B-1	13.30%	11.18%
	Jun-06	Swiss Re	Successor EuroWnd Cl A-I	10.65%	9.04%
	Jun-06	Swiss Re	Successor EuroWnd Cl A-II	7.25%	7.45%
	Jun-06	Swiss Re	Successor EuroWnd Cl B-I	4.25%	4.07%
	Jun-06	Swiss Re	Successor EuroWnd Cl C-I	5.85%	5.65%
	Jun-06	Swiss Re	Successor EuroWnd Cl C-II	9.50%	9.32%
	Jun-06	Swiss Re	Successor EuroWnd Cl C-II	9.50%	9.18%
	Jun-06	Swiss Re	Successor EuroWnd Cl A-I	5.25%	5.77%
	Jun-06	Swiss Re	Successor EuroWnd Cl A-II	5.25%	6.06%
	Jun-06	Swiss Re	Successor EuroWnd Cl B-I	7.00%	7.67%
	Jun-06	Swiss Re	Successor EuroWnd Cl C-I	12.00%	13.14%
	Jun-06	Swiss Re	Successor EuroWnd Cl C-II	12.00%	14.68%
	Jun-06	Swiss Re	Successor II Class A-I	17.50%	17.28%
	Jun-06	Swiss Re	Successor II Class E-I	39.25%	37.71%
	Jun-06	Swiss Re	Successor III Class A-I	21.00%	20.13%
	Jun-06	Swiss Re	Successor IV Class A-I	16.50%	15.36%
	Jun-06	Balboa & Subs.	Vasco Re 2006	8.50%	7.79%
			Average - Combined		10.69%

Life Securitizations	Issue Date	Sponsor	Issuer	Spread at Issue	Average Market Indications
	Nov-05	Swiss Re	ALPS Capital II A	0.30%	0.20%
	Nov-05	Swiss Re	ALPS Capital II B	0.38%	0.35%
	Nov-05	Swiss Re	ALPS Capital II C	F716.3	2.15%
	Nov-05	Swiss Re	ALPS Capital II D	F1173.5	6.13%
	Dec-04	Admin Re	Queensgate 2005-A	1.46%	3.43%
	Dec-04	Admin Re	Queensgate 2005-B	2.47%	1.98%
	Feb-06	Scottish Ann	Tartan Capital A	0.19%	0.22%
	Feb-06	Scottish Ann	Tartan Capital B	3.00%	3.33%
	Dec-03	Swiss Re	Vita Capital	1.35%	0.73%
	Apr-05	Swiss Re	Vita Capital II Class B	0.90%	1.29%
	Apr-05	Swiss Re	Vita Capital II Class C	1.40%	2.03%
	Apr-05	Swiss Re	Vita Capital II Class D	1.90%	2.84%
			Average - Combined		2.06%
			Average - Combined		9.56%

Other extant securities that may be maturing or are without any secondary prices.	Issue Date	Sponsor	Issuer	Spread at Issue	Average Market Indications
	Dec-04	Admin Re	Queensgate 2005-C		
New Issue in Qtr.	Aug-06	Endurance	Shackleton C	8.00%	
New Issue in Qtr.	Aug-06	Endurance	Shackleton B	7.50%	

Fourth Quarter 2006 (12/29/06) Secondary Market Prices From Three Dealers	Issue Date	Sponsor	Issuer	Spread at Issue	Average Market Indications
	Nov-05 Swiss Re		Aiolis Ltd.	4.75%	5.46%
	Mar-05 Swiss Re		Arbor Capital I-VIII	12.25%	15.97%
	Jun-05 Swiss Re		Arbor Capital I-IX	12.00%	14.94%
	Oct-05 PXR		Atlantic & Western A	3.75%	7.02%
	Oct-05 PXR		Atlantic & Western B	10.00%	11.40%
	Dec-05 PXR		Atlantic & Western II A	6.00%	12.39%
	Dec-05 PXR		Atlantic & Western II B	6.25%	7.83%
New Issue in Quarter	Dec-06 SCOR		Atlas Re III	4.00%	3.91%
	Jan-05		Aura Re plc	2.70%	4.03%
	Jan-05 Swiss Re		Australis Ltd	4.00%	3.81%
	Jun-05 OCIL		Avalon Re Class A-2	2.13%	10.79%
	Jun-05 OCIL		Avalon Re Class B	3.60%	34.64%
	Jun-05 OCIL		Avalon Re Class C	7.75%	94.28%
New Issue in Quarter	Nov-06 Catlin		Bay Haven Class A	1.50%	1.42%
New Issue in Quarter	Nov-06 Catlin		Bay Haven Class B	4.25%	4.17%
	Jun-06 Swiss Re		Calabash Re A-1	8.50%	7.71%
	May-06 Munich Re		Carillon A-1	10.00%	9.91%
	May-06 Munich Re		Carillon A-2	0.73%	0.73%
	May-06 Munich Re		Carillon B	0.75%	0.75%
	Jun-05 FM Global		Cascadia Ltd.	3.13%	4.08%
	Aug-06 FM Global		Cascadia II Ltd.	4.00%	4.12%
	May-06 Swiss Re		CAT-Mex Ltd A	2.35%	2.34%
	May-06 Swiss Re		CAT-Mex Ltd B	2.30%	2.31%
	Dec-05 Montpelier Re		Champion Ltd A	12.75%	12.90%
	Dec-05 Montpelier Re		Champion Ltd B	13.50%	14.80%
	Jul-06 Hannover Re		Eurus	6.25%	6.35%
	Aug-06 Tokio Marine		Flu-Jin	3.90%	3.74%
	Nov-04 Hartford		Foundation Re Class A	4.10%	7.10%
	Nov-04 Hartford		Foundation Re Class B	1.95%	3.09%
	Nov-04 Hartford		Foundation Re Class D	7.25%	8.61%
	Nov-06 Hartford		Foundation Re II Class A	6.75%	6.78%
	Nov-06 Hartford		Foundation Re II Class B	9.80%	9.80%
	Nov-06 Hartford		Foundation Re II Class G	3.15%	2.82%
	Jun-04		GI Capital	5.40%	5.90%
New Issue in Quarter	Jun-04 Converium		Helix 2004	5.30%	5.30%
	Dec-06 Munich Re		KAMP Re	6.50%	6.42%
	Jun-06 Liberty Mutual		Lakeside	7.00%	5.67%
New Issue in Quarter	Dec-06 Liberty Mutual		Mystic Re A-1	6.30%	6.30%
New Issue in Quarter	Dec-06 Liberty Mutual		Mystic Re A-2	9.00%	9.12%
	Jul-03 Swiss Re		Oak Capital	4.75%	5.66%
	Jul-03 Swiss Re		Palm Capital	5.75%	2.04%
	Dec-97 Tokio Marine and Fire		Parametric Re	4.30%	3.00%
	Jun-03 Swiss Re		Phoenix Quake	2.45%	1.89%
	Jun-03 Swiss Re		Phoenix Quake/Wind	2.45%	1.92%
	Jun-03 Swiss Re		Phoenix Quake/Wind II	3.50%	3.98%
	Dec-03 Elec de Fr		Pylon A	1.50%	1.39%
	Dec-03 Elec de Fr		Pylon B	3.90%	4.52%
	Dec-04 Swiss Re		Redwood V	4.15%	6.98%
	Dec-04 Swiss Re		Redwood VII	4.05%	6.89%
	Feb-06 Swiss Re		Redwood VIII	5.25%	5.89%
	Feb-06 Swiss Re		Redwood VIII	5.25%	5.90%
	Dec-06 Swiss Re		Redwood IX Class A	6.25%	6.15%
	Dec-06 Swiss Re		Redwood IX Class B	6.75%	6.65%
New Issue in Quarter	Dec-06 Swiss Re		Redwood IX Class C	2.40%	2.32%
New Issue in Quarter	Dec-06 Swiss Re		Redwood IX Class D	7.75%	7.65%
New Issue in Quarter	Dec-06 Swiss Re		Redwood IX Class E	14.40%	14.40%
	May-04 USAA		Residential Re 2004 Class A	5.95%	4.87%
	May-04 USAA		Residential Re 2004 Class B	9.50%	7.01%
	May-05 USAA		Residential Re 2005 Class A	5.45%	9.52%
	May-05 USAA		Residential Re 2005 Class B	8.45%	14.23%
	Jun-06 USAA		Residential Re 2006 Class A	10.00%	10.33%
	Jun-06 USAA		Residential Re 2006 Class C	7.50%	7.17%
	Jul-03 Swiss Re		Sakura Capital	4.50%	4.07%
	Mar-04 Swiss Re		Sequoia Capital	5.75%	7.68%
	Aug-06 Endurance		Shackleton Re	8.00%	7.44%
	Jun-06 Swiss Re		Successor Hurr Ind Class B-I	11.00%	8.48%
	Jun-06 Swiss Re		Successor Hurr Ind Class C-I	15.30%	12.44%
	Jun-06 Swiss Re		Successor Hurr Ind Class D-I	22.75%	18.35%
	Jun-06 Swiss Re		Successor Hurr Ind Class D-II	17.10%	2.67%
	Jun-06 Swiss Re		Successor Hurr Ind Class E-I	32.60%	25.22%
	Jun-06 Swiss Re		Successor Hurr Ind Class E-II	24.50%	3.28%
	Aug-06 Swiss Re		Successor Hurr Ind Class E-III	48.20%	4.20%
	Dec-06 Swiss Re		Successor Hurr Ind Class E-IV	22.50%	23.44%
	Dec-06 Swiss Re		Successor Hurr Ind Class E-V	22.50%	23.08%
	Jun-06 Swiss Re		Successor Hurr Mod Class F-I	13.30%	10.70%
	Jun-06 Swiss Re		Successor Hurr Mod Class B-I	10.65%	8.34%
	Jun-06 Swiss Re		Successor CalQuake Para CI A-1	7.25%	7.61%
	Jun-06 Swiss Re		Successor JapQuake CI A-1	4.25%	4.02%
	Jun-06 Swiss Re		Successor JapQuake CI B-1	5.65%	5.65%
	Jun-06 Swiss Re		Successor JapQuake CI C-1	9.50%	9.23%
	Jun-06 Swiss Re		Successor JapQuake CI C-II	9.50%	9.00%
	Jun-06 Swiss Re		Successor EuroWnd CI A-I	5.25%	5.99%
	Jun-06 Swiss Re		Successor EuroWnd CI A-II	5.25%	6.46%
	Jun-06 Swiss Re		Successor EuroWnd CI A-III	5.75%	5.75%
	Jun-06 Swiss Re		Successor EuroWnd CI B-I	7.00%	7.49%
	Jun-06 Swiss Re		Successor EuroWnd CI C-I	12.00%	13.20%
	Jun-06 Swiss Re		Successor EuroWnd CI C-II	12.00%	13.92%
	Dec-06 Swiss Re		Successor EuroWnd CI C-III	10.75%	10.38%
	Dec-06 Swiss Re		Successor I Class B-I	36.00%	35.34%
	Dec-06 Swiss Re		Successor II Class A-I	36.00%	35.67%
	Jun-06 Swiss Re		Successor II Class A-II	17.50%	16.46%
	Jun-06 Swiss Re		Successor II Class A-III	39.25%	35.36%
	Jun-06 Swiss Re		Successor III Class A-I	21.00%	18.96%
	Jun-06 Swiss Re		Successor IV Class A-I	16.50%	14.12%
	Jun-06 Balboa & Subs.		Vasco Re 2006	8.50%	7.54%
Life Securitizations				Average - Cat	10.00%
	Nov-05 Swiss Re		ALPS Capital II A	0.30%	0.20%
	Nov-05 Swiss Re		ALPS Capital II B	0.38%	0.35%
	Nov-05 Swiss Re		ALPS Capital II C	F716.3	1.95%
	Nov-05 Swiss Re		ALPS Capital II D	F1173.5	5.08%
New Issue in Quarter	Nov-06 AXA		Osiris Capital B1	0.20%	0.20%
New Issue in Quarter	Nov-06 AXA		Osiris Capital B2	1.20%	1.18%
New Issue in Quarter	Nov-06 AXA		Osiris Capital C	2.85%	2.77%
New Issue in Quarter	Nov-06 AXA		Osiris Capital D	5.00%	4.82%
	Dec-04 Admin Re		Queensgate 2005-A	1.46%	0.73%
	Dec-04 Admin Re		Queensgate 2005-B	2.47%	1.88%
	Feb-06 Scottish Ann		Tartan Capital A	0.19%	0.19%
	Feb-06 Scottish Ann		Tartan Capital B	3.00%	3.12%
	Dec-03 Swiss Re		Vita Capital	1.35%	0.76%
	Apr-05 Swiss Re		Vita Capital II Class B	0.90%	1.16%
	Apr-05 Swiss Re		Vita Capital II Class C	1.40%	1.55%
	Apr-05 Swiss Re		Vita Capital II Class D	1.90%	2.70%
	Dec-06 Swiss Re		Vita Capital III Class B-I	1.10%	1.14%
	Dec-06 Swiss Re		Vita Capital III Class B-II	1.13%	1.16%
	Dec-06 Swiss Re		Vita Capital III Class B-III	1.10%	1.13%
Life Securitizations				Average - Life	1.69%
				Average - Combined	8.60%
Other extant securities that may be maturing or are without any secondary prices.					
	Dec-04 Admin Re		Queensgate 2005-C		
	Aug-06 Endurance		Shackleton B	8.00%	
	Aug-06 Endurance		Shackleton C	7.50%	

First Quarter 2007 (3/30/07) Secondary Market Prices From Three Dealers	Issue Date	Sponsor	Issuer	Spread at Issue	Average Market Indications
	Nov-05 Munich Re		Aiolis Ltd.	4.75%	4.72%
	Jun-05 Swiss Re		Arbor Capital I-IX	12.00%	9.40%
	Oct-05 PXR		Atlantic & Western A	3.75%	3.25%
	Oct-05 PXR		Atlantic & Western B	10.00%	5.93%
	Dec-05 PXR		Atlantic & Western II B	6.25%	3.26%
	Dec-05 SCOR		Atlas Re III	4.00%	3.40%
	Jan-05		Aura Re plc	2.70%	2.89%
	Jan-06 Swiss Re		Australis Ltd	4.00%	3.38%
	Mar-07 Swiss Re		Australis II	7.25%	3.66%
	Jun-05 OCIL		Avalon Re Class A-2	2.13%	7.51%
	Jun-05 OCIL		Avalon Re Class B	3.60%	28.99%
	Jun-05 OCIL		Avalon Re Class C	7.75%	87.81%
	Nov-06 Catlin		Bay Haven Class A	1.50%	1.26%
	Nov-06 Catlin		Bay Haven Class B	4.25%	3.66%
	Jun-06 Swiss Re		Calabash Re A-1	8.50%	6.48%
	Jan-07 Swiss Re		Calabash Re II A-1	8.40%	7.32%
	Jan-07 Swiss Re		Calabash Re II D-1	9.60%	8.21%
	Jan-07 Swiss Re		Calabash Re II E-1	10.00%	8.94%
	May-06 Munich Re		Carillon A-1	10.00%	8.95%
	May-06 Munich Re		Carillon A-2	0.00%	0.00%
	May-06 Munich Re		Carillon B	0.75%	0.75%
	Jun-05 FM Global		Cascadia Ltd.	3.13%	3.24%
	Aug-06 FM Global		Cascadia II Ltd.	4.00%	3.49%
	May-06 Swiss Re		CAT-Mex Ltd A	2.35%	2.27%
	May-06 Swiss Re		CAT-Mex Ltd B	2.30%	2.22%
	Dec-05 Montpelier Re		Champion Ltd A	12.75%	11.11%
	Dec-05 Montpelier Re		Champion Ltd B	13.50%	13.19%
	Jul-06 Hannover Re		Eurus	6.25%	5.09%
	Aug-06 Tokio Marine		Flu-Jin	3.90%	3.29%
	Nov-04 Hartford		Foundation Re Class A	4.10%	5.60%
	Nov-04 Hartford		Foundation Re Class B	1.95%	2.68%
	Nov-04 Hartford		Foundation Re Class D	7.25%	7.61%
	Nov-06 Hartford		Foundation Re II Class A	6.75%	5.96%
	Nov-06 Hartford		Foundation Re II Class G	9.80%	10.05%
	Jun-04		GI Capital	3.15%	2.43%
	Jun-04 Converium		Helix 2004	5.40%	4.94%
	Jun-06 Zurich		KAMP Re	5.30%	5.40%
	Dec-06 Munich Re		Lakeside	7.00%	4.74%
	Jun-06 Liberty Mutual		Mystic Re A-1	7.00%	5.17%
	Dec-06 Liberty Mutual		Mystic Re A-2	6.30%	8.11%
	Dec-06 Liberty Mutual		Mystic Re B-1	9.00%	2.34%
	Jul-03 Swiss Re		Oak Capital	4.75%	1.67%
	Jul-03 Swiss Re		Palm Capital	5.75%	4.30%
	Dec-97 Tokio Marine and Fire		Parametric Re	4.30%	2.62%
	Jun-03 Swiss Re		Phoenix Quake	2.45%	1.81%
	Jun-03 Swiss Re		Phoenix Quake/Wind	2.45%	1.87%
	Jun-03 Swiss Re		Phoenix Quake/Wind II	3.50%	8.99%
	Dec-03 Elec de Fr		Pylon A	1.50%	1.04%
	Dec-03 Elec de Fr		Pylon B	3.90%	3.09%
	Feb-06 Swiss Re		Redwood VII	5.25%	5.28%
	Feb-06 Swiss Re		Redwood VIII	5.25%	5.28%
	Dec-06 Swiss Re		Redwood IX Class A	6.25%	5.29%
	Dec-06 Swiss Re		Redwood IX Class B	6.75%	5.78%
	Dec-06 Swiss Re		Redwood IX Class C	2.40%	2.12%
	Dec-06 Swiss Re		Redwood IX Class D	7.75%	6.85%
	Dec-06 Swiss Re		Redwood IX Class E	14.40%	12.71%
	May-04 USAA		Residential Re 2004 Class A	5.95%	4.27%
	May-04 USAA		Residential Re 2004 Class B	9.50%	6.70%
	May-05 USAA		Residential Re 2005 Class A	5.45%	8.40%
	May-05 USAA		Residential Re 2005 Class B	8.45%	13.74%
	Jun-06 USAA		Residential Re 2006 Class A	10.00%	9.59%
	Jun-06 USAA		Residential Re 2006 Class C	7.50%	6.81%
	Jul-03 Swiss Re		Sakura Capital	4.50%	3.22%
	Mar-04 Swiss Re		Sequoia Capital	5.75%	6.45%
	Aug-06 Endurance		Shackleton Re	8.00%	6.20%
	Jun-06 Swiss Re		Successor Hurr Ind Class B-I	11.00%	9.98%
	Jun-06 Swiss Re		Successor Hurr Ind Class C-I	15.30%	12.44%
	Jun-06 Swiss Re		Successor Hurr Ind Class D-I	22.75%	20.45%
	Jun-06 Swiss Re		Successor Hurr Ind Class D-II	17.10%	1.77%
	Jun-06 Swiss Re		Successor Hurr Ind Class E-I	32.60%	28.70%
	Jun-06 Swiss Re		Successor Hurr Ind Class E-II	24.50%	2.10%
	Aug-06 Swiss Re		Successor Hurr Ind Class E-III	48.20%	26.84%
	Dec-06 Swiss Re		Successor Hurr Ind Class E-IV	22.50%	23.14%
	Dec-06 Swiss Re		Successor Hurr Ind Class E-V	22.50%	23.08%
	Jun-06 Swiss Re		Successor Hurr Mod Class F-I	13.30%	12.10%
	Jun-06 Swiss Re		Successor Hurr Mod Class B-I	10.65%	10.46%
	Jun-06 Swiss Re		Successor CalQuake Para CI A-1	7.25%	6.49%
	Jun-06 Swiss Re		Successor JapQuake CI A-1	4.25%	3.22%
	Jun-06 Swiss Re		Successor JapQuake CI B-1	5.65%	4.45%
	Jun-06 Swiss Re		Successor JapQuake CI C-1	9.50%	7.70%
	Jun-06 Swiss Re		Successor JapQuake CI C-II	9.50%	7.16%
	Jun-06 Swiss Re		Successor EuroWnd CI A-I	5.25%	4.37%
	Jun-06 Swiss Re		Successor EuroWnd CI A-II	5.25%	1.65%
	Jun-06 Swiss Re		Successor EuroWnd CI A-III	5.75%	4.03%
	Jun-06 Swiss Re		Successor EuroWnd CI B-I	7.00%	5.52%
	Jun-06 Swiss Re		Successor EuroWnd CI C-I	12.00%	8.92%
	Jun-06 Swiss Re		Successor EuroWnd CI C-II	12.00%	2.36%
	Dec-06 Swiss Re		Successor EuroWnd CI C-III	10.75%	8.03%
	Dec-06 Swiss Re		Successor I Class B-I	36.00%	33.24%
	Dec-06 Swiss Re		Successor I Class B-II	36.00%	32.77%
	Jun-06 Swiss Re		Successor II Class A-I	17.50%	14.47%
	Jun-06 Swiss Re		Successor II Class A-II	39.25%	30.66%
	Jun-06 Swiss Re		Successor II Class A-III	21.00%	16.76%
	Jun-06 Swiss Re		Successor III Class A-I	16.50%	12.70%
	Jun-06 Balboa & Subs.		Vasco Re 2006	8.50%	6.70%
Life Securitizations				Average - Cat	8.68%
	Nov-05 Swiss Re		ALPS Capital II A	0.30%	0.21%
	Nov-05 Swiss Re		ALPS Capital II B	0.38%	0.38%
	Nov-05 Swiss Re		ALPS Capital II C	F716.3	2.00%
	Nov-05 Swiss Re		ALPS Capital II D	F1173.5	5.15%
New Issue in Quarter	Nov-06 AXA		Osiris Capital B1	0.20%	0.20%
New Issue in Quarter	Nov-06 AXA		Osiris Capital B2	1.20%	1.16%
New Issue in Quarter	Nov-06 AXA		Osiris Capital C	2.85%	2.73%
New Issue in Quarter	Nov-06 AXA		Osiris Capital D	5.00%	4.77%
	Dec-04 Admin Re				