

Statement of Dr. John S. Seo

**Co-founder & Managing Member
Fermat Capital Management, LLC**

Testimony Before

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Subcommittee on Capital Markets, Insurance, and Government Sponsored Enterprises

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Introduction

I thank the Subcommittee on Housing and Community Opportunity and the Subcommittee on Capital Markets, Insurance, and Government Sponsored Enterprises for inviting me to testify at this hearing on the catastrophe bond and risk-linked securities market, which I will simply refer to as the cat bond market.

My name is John Seo. I am co-founder and managing member along with my brother, Nelson Seo, of Fermat Capital Management, LLC, one of the leading firms in the cat bond market with \$2 billion dollars in assets under management.

The true nature of cat bonds and risk securitization

Wall Street invented the cat bond market in the mid-to-late 1990's in the wake of Hurricane Andrew and the Northridge Earthquake. Many people assume that cat bonds are just so-called securitized reinsurance or collateralized reinsurance or even just a bond issued by an insurance or reinsurance company, but none of this is true. Each cat bond is, in effect, an entire reinsurance company, setup to run automatically with essentially no human judgment for its operation. It is quite a feat to set up such a company. It is the equivalent of a mechanical watch that does fancy things according to a schedule or when you press different buttons. Why go through all the trouble? The structure is intended to be one big, baseball cap into which two parties to a wager, an insurance company (for example) and an investor, put their money. A whole host of third party professionals are tasked with safeguarding the baseball cap and paying out money according to pre-specified instructions meant to cover every conceivable outcome to the wager. Cat bonds are a marvelous construct, and it is absolutely necessary to the securitization of risk because without this big baseball cap and a small army of third party professionals to administer it, the whole situation gets messy very quickly when big money is involved.

To extend our analogy further, reinsurance is just a promise to pay if the reinsurer should lose a wager. Collateralized reinsurance is a promise to pay on a wager, with the reinsurer's collateral being held in the insurer's clutched fist, but still clear enough for the reinsurer to see. In the first case, if the reinsurer goes bankrupt, the insurer is out of luck:

no payout even if the wager comes due. In the second case, if the insurer goes bankrupt, the reinsurer is out of luck: regardless of the outcome of the wager, all or part of the collateral is lost to a bankruptcy judge, who will make the money in the insurer's fist a part of the insurer's general assets, available to pay all creditors. Going through the trouble of setting up an entirely independent, unbiased, automatically administered reinsurance company is the only way to avoid all these troubles. If the reinsurance contract were for a modest amount of money, you probably would not bother with a cat bond arrangement. It might be like putting your grocery money in escrow as a prelude to buying a gallon of milk. If, however, the contract amount were significantly large for the parties involved, you would like to use a cat bond structure: collateral must be escrowed and expertly administered according to the outcome of a complex wager. You wouldn't just wire the money for your dream house to the seller, make a complex side bet on the house with the seller, and then meet to transfer ownership and settle up on the complex side bet a week later, would you? That is effectively what goes on in super catastrophe reinsurance every day. Cat bonds are an invention intended to fix that situation.

Based on a new, genuinely useful invention, the cat bond market, in the late 1990's, was expected by many early pioneers to grow rapidly into a 100 billion dollar market, someday to be a trillion dollar market. Yet, after several years of considerable effort and great expense, Wall Street counted less than 1.5 billion dollars in liquid cat bonds were in the hands of investors as the world rang in a New Year and a new century.

Factors impeding growth in the early years

Three general factors were responsible for a slow start in the cat bond market.

Historical market cycles were unfavorable. This may have been the biggest factor retarding cat bond market growth. Just as cat bonds were getting started, traditional reinsurance became historically cheap to purchase, while the stock market produced historically high returns.

Cost-Benefit was initially poor. This was perhaps unavoidable. In the early days, each cat bond required starting up an entire, new reinsurance company for a single transaction that only lasted a year. Transactions were time-consuming (15 to 18 months), difficult to arrange (must fly offshore to discuss key details), costly (millions of dollars in professional fees were involved), and offered little incremental benefit to both insurers-reinsurers and investors alike (millions of dollars of coverage for industries that counted risk in the billions and even trillions of dollars). Of course, cost-benefit analysis can be trumped by long-term considerations of value, which is the main reason early cat bond deals were successfully produced and sold.

Expertise was below critical mass. Cat bonds are incredibly abstract and complex financial instruments. In a traditional asset securitization, cash flows are packaged and sold to a pool of investors. An electronic spreadsheet can be used to tie out all the details. In a risk-linked securitization, a portion of the risk to a complex business enterprise is packaged and sold to a pool of investors. For technical reasons, an electronic spreadsheet cannot be used to tie out all the details. That standard finance tools cannot be used for a

risk-linked securitization is indication that a complex and wide-ranging set of professional expertise is required to support risk-linked securitization. A multi-volume set of books on the subject might be:

Volume 1. Dictionary & Thesaurus of Terms.

Volume 2. Design Theory: indemnity vs. index vs. parametric loss triggers.

Volume 3. Investment Theory: price, value, portfolio management.

Volume 4. Risk Quantification: modern catastrophe models.

Volume 5. Industry Dynamics: factors affecting supply and demand.

Volume 6. Legal and Regulatory Issues.

Transition period

These difficulties gradually diminished over time. From 2000 to mid-2005, the insurance-reinsurance cycled away from cheap pricing (helped along by losses from the 9/11 terrorists attacks and losses from the unusual 2004 hurricane season), and investors discovered not only the mortality of double-digit annual stock returns, but also discovered their own version of concentration risk: globally, across all markets and at every conceivable level, investments returns were increasingly moving in lock-step with each other. This emerging “correlation crisis” has fueled the emerging boom in so-called alternative investments, of which cat bonds are turning out to be possibly among the least risky and complex (other alternatives tend to involve extremes of illiquidity, leverage, non-transparency). Cat bond market cost-benefit improved, and expertise continued to grow as well. As a result, the cat bond market tripled in size to 5 billion dollars in liquid cat bonds outstanding. The size of the market was still small, but from a growth and vitality point of view, the cat bond market was actually looking pretty good by mid-2005.

(Note: the larger cat bond market, depending on how you count it, is 2 to 3 times bigger than the liquid market. It is useful, however, to use liquid cat bonds as a benchmark of market size because there is reasonable consensus among investors and broker-dealers about the size of the liquid cat bond market.)

Post-Katrina period

In the 2 years since Katrina became a household name, the liquid cat bond market will have tripled again in size to about 14 billion in bonds outstanding by the end of this year. A good 6 billion of those bonds will cover U.S. hurricane risk alone. Looking forward, even with things cooling down a bit, we might still reasonably forecast another tripling in size to 50 billion dollars in liquid cat bonds outstanding in 5 years and another tripling in size to 150 billion dollars in liquid cat bonds outstanding 10 to 15 years from now. Here, again, I will mention that the entire cat bond market is 2 to 3 times the size of the liquid market, so the original expectation that the cat bond market would become a trillion dollar market should be realized within a couple of decades, which is probably par for the course when one looks back at the history of the mortgage-backed securities market or even the options and derivatives market.

At this point, I would like to finish by asking and answering three questions:

What will drive cat bond supply?

In the long term, what will drive cat bond supply is the cat bond market's version of Moore's Law. As you know, Moore's Law, which says that the number of transistors we can put onto a square inch of silicon doubles every 2 years, is credited with driving the growth of digital technology. The equivalent of Moore's Law for cat bonds is that the amount of property value we put onto every square mile in key U.S. and overseas earthquake and hurricane zones is doubling every 10 years. On the other hand, global reinsurance and insurance capital available to earthquakes and hurricanes does not double every 10 years—it probably increases something like 35 percent every 10 years. This fundamental shortfall between risk and capital growth is what will drive cat bond supply.

What will drive cat bond demand?

In the long term, what will probably drive cat bond demand is the buying interest of pension funds and other similar or related institutional investors. Please recall my earlier recounting of the brewing correlation crisis in institutional investment management. The overseers and professional investment managers who ultimately decide investment policy on tens of trillions of dollars in investments worldwide are convinced enough of the possibility of this coming crises, that they are making bold moves into so-called alternative investments, whose sole utility is to provide a source of returns that are less-than-perfectly correlated with other sources of investment returns. The unconventionality of industry moves into alternative investments is quickly making an investment in cat bonds fairly unremarkable, especially among the more progressive pension funds that tend also to be among the biggest pension funds. Here are the numbers: pension funds worldwide have about 15 trillion dollars in assets. If pension funds want to put 1 percent of their assets into cat bonds (and that is shaping up to be the case), pension funds alone will end up investing 150 billion dollars in cat bonds. Pension funds can be gigantic, committed, long-term investors with realistic return goals, and, as a whole, they generally go by a particular Rule of 10's: to be taken seriously, any new market must: (1) Be in existence for at least 10 years, and (2) Grow past 10 billion dollars in size. Both of these things occurred in the cat bond market just this year, so policymakers might consider that the next 10 to 20 years' worth of cat bond market growth is likely to be supported by a single class of investors so large that even a 150 billion dollar insurance industry loss would cost them no more than 1 percent of their assets.

What might be done to encourage cat bond market growth and vitality?

One popular proposal among traditional finance professionals is to establish a futures market to trade a standardized set of loss indices. This notion extends also to cat bonds, options, and derivatives based on these standardized loss indices. Let's call all such related proposals "cat futures." I doubt cat futures will help the cat bond market grow. It is similar to suggesting that house futures would help grow the market for mortgage-backed securities.

Another popular proposal among insurance and reinsurance professionals is for better reporting of physical event parameters—for example, hurricane wind speeds, reported continuously from a good number of different points along the coast and inland. Let us call this and other related proposals "cat reporting." Cat reporting is probably the single

most obvious way that the U.S. government could aid the growth and vitality of the cat bond market for U.S. natural peril risks. For the cat bond market, it would be similar to adding an internet system to an existing telegraph network. The network effects would be tremendous, including data to improve building practices.

Thank you for your attention.