

Beyond the clouds

A cloudy horizon is rarely a positive sign but [JOHN SEO](#) and [GREG HICKLING](#) report that catastrophe risk might prove to be an attractive asset class for super funds.

Catastrophe risk is an asset class with a structural source of return and low correlation with traditional asset classes. It is less than 15 years old, but has grown at 20 percent p.a. The attractive features and its rapid growth are increasingly impacting the asset allocation decisions of institutional investors.

HISTORY OF THE MARKET

Although the concepts of insurance and reinsurance have existed for millennia, the market for Insurance Linked Securities (ILS) is a much more recent development. The genesis of this market can be traced to a single landmark transaction in the aftermath of Hurricane Andrew, which struck the US East Coast in 1992. The losses incurred by the hurricane exceeded the previous worst estimates and resulted in a number of insurance companies failing. Michael Lewis quoted in his analysis of this watershed event in the *New York Times* magazine article "In Nature's Casino:"

"No-one ... had any idea of the scope of new development and the exposure that the insurance industry now had ... After Hurricane Andrew came a shift in the culture of catastrophe."

There is now a body of academic and industry research which suggests this

exposure is doubling every 10 years.

Following this event Berkshire Hathaway completed a \$1 billion catastrophe risk transaction with the State of California. In his 1994 letter to shareholders, Berkshire Hathaway chairman Warren Buffet revealed details of the cover against the risk of what he termed a "mega catastrophe." He made the following observation:

"But that same insurer knows that the disaster making it dependent on a large super-cat recovery is also the disaster that could cause many reinsurers to default. There's not much sense paying premiums for coverage that will evaporate precisely when it is needed."

These comments highlight one of the distinguishing features of the catastrophe ILS market. The key driver is the structural need for capital to ensure the ability of an insurer to meet claims post a major catastrophic event. This structural driver underpins the returns of a separately identifiable asset class which is sometimes referred to as an alternative beta.

CATASTROPHE RISK – INSURANCE LINKED SECURITIES (ILS)

The total market for catastrophe reinsurance currently stands in the order of USD225 billion. The figure is frequently used to

signify the total size of the asset class, but not all of the asset class offers transparent and investible opportunities. At the risk of over simplifying the market structure, we can categorise the ILS market into three broad groups:

Catastrophe Bonds: a USD12 billion market spread across more than 100 bond issues covering major global perils. The typical structure of a catastrophe bond is a three year security paying a floating rate coupon. The default risk is related to the insured losses from a major catastrophe and is roughly one percent p.a. or in "industry speak" a one in 100 year event. This level of risk is about equivalent to a BB-rated corporate bond. They are relatively liquid and are held by many high yield bond portfolios.

Industry Loss Warranties: an example of the over-the-counter market for catastrophe risk which currently produces around USD5-6 billion of renewals per year. These contracts typically run for 12 months and are executed via private bi-partite agreements. These instruments cover risks as remote as one in 100 years up to more frequent (or likely) events of one in 10 years.

Direct Re-insurance: the traditional process whereby insurers and reinsurers share or offload specific parts of their risk book to other reinsurers or investors. This is a highly

specialised private market which relates less to “mega” catastrophes and more to the general risk books of insurance companies. This business is cyclical and returns tend to follow the day- to-day capital requirements of insurance companies.

CATASTROPHE BONDS – A SOURCE OF ALTERNATIVE BETA

Insurance companies and reinsurers are usually well capitalised to manage the normal business of insurance. That is; the typical year to year occurrence of relatively moderate events that cause up to USD20 billion of insured losses. For example, in 2005 Hurricane Katrina caused insurance losses of USD41 billion. The industry regards it as a “severe” event but not a “mega” catastrophe.

However, what it did highlight was the extreme stress the re-insurance industry would experience in the event of a true mega-catastrophe. Such an event has about a one percent chance of occurring and in today’s terms would cause an estimated USD150 billion of insured losses. With a global re-insurance capital base of around USD200 billion, it is easy to see the industry’s dilemma.

The solution lies in the ability to pass on this very remote, high loss risk to the capital markets in return for an appropriate premium. This premium is related to the systemic risk of the global insurance industry, stemming from the structural need for large amounts of capital in the event of these large, but rare catastrophes. It is this structural demand for capital which establishes catastrophe risk as an asset class in its own right and a source of alternative beta largely unrelated to other asset classes such as shares, bonds and property.

RISK

Within any asset class, there is a trade off between risk and return and nowhere is this more evident than catastrophe investments. In catastrophe ILS the relationship between risk and return is not linear and understanding the underlying risk of an ILS portfolio is a challenge for investors new to the asset class.

The issue at the core of this understanding is the structural need for capital in the insurance industry versus the very remote risk of mega-catastrophes. The insurance industry is much more concerned about its ability to meet claims after a one in 100 year event than after more regular probabilities. The one in 100 year risk is something of a “sweet spot” in terms of

risk/return. On a risk adjusted basis, the yields offered on these risks are much more attractive than higher probability losses.

For example, the average yield on a cat bond covering US hurricane risk against a one in 100 year loss is around Libor +eight percent. That is: an eight percent margin over cash for a one percent chance of loss, giving a risk-adjusted expected return of Libor +seven percent. By comparison, an Industry Loss Warranty covering a one in 10 year risk might currently pay a yield of 15 percent over Libor. While the yield is much higher, the risk-adjusted expected return is only five percent above cash for this 10 percent chance of a loss.

That is not to say that catastrophe risk contains a free lunch for investors. Over the fullness of time, the true risk profile of an appropriately diversified portfolio should produce a volatility of returns akin to an equity portfolio. In the portfolios managed by Fermat Capital Management, Hurricane Katrina caused a drawdown of around four percent. However, the expectation is that following a true one in 100 year mega-catastrophe, that drawdown would more likely be in the order of 30-35 percent i.e. similar to the major stock market corrections over the past 20 years.

The important distinction is that the correlation of those draw downs is unlikely to be related to the returns of more traditional assets. The somewhat obvious statement that stock market crashes do not cause hurricanes also appears to hold in reverse. A body of historical research suggests that global capital markets are not affected by localised catastrophic events to any great extent.

ASSET ALLOCATION

An all important question faced by investors presented with a new asset class is “Where do I put this in my portfolio?” The global experience over the past decade or so has seen institutional investors adopt the asset class in one or more of three ways.

The first two, as part of the general “Alternatives” allocation or within a “High Yield” bond mandate, see relatively minor allocations to catastrophe risk. Rather, the return objectives of alternatives allocations often see conservatively managed catastrophe risk portfolios crowded out by higher return seeking alpha investments.

However, even amongst alternative asset classes, the diversifying nature of catastrophe bonds can introduce significant improvement to the risk-adjusted return profile of the alternative asset allocation.

The third approach is the most

groundbreaking. It has seen a number of large pension funds adopt the broad category of “insurance strategies” as an asset class in its own right.

The recognition of the structural source of return as significantly different to traditional assets, sees cat risk form part of the headline asset allocation or core portfolio beta; together with equities, fixed income and property.

The risk/return profile of catastrophe risk gives the asset class characteristics of both bonds and equities and an allocation can be drawn from both the growth and defensive pools. The floating rate nature of coupons provides a shield against interest rate movements, while the risk and return characteristics are similar to long-term equity expectations. An allocation of up to five percent (or greater) of a fund’s assets introduces benefits which, overall, markedly improves its risk-adjusted return profile.

A PHILOSOPHICAL APPROACH

The fundamental role of insurance to the economic, social and political well being of world populations sees catastrophe risk investment establishing its importance with respect to the ability to hedge the impacts of climate change, as well as the ESG implications of responsible investment. To that end, the World Bank has developed the “Multi Cat” catastrophe bond issuance program with three key objectives:

1. to facilitate access to insurance coverage for governments on better terms
2. enlarge the traditional investor base for catastrophe bonds by offering yields uncorrelated with financial markets and
3. ensure governments’ access to immediate liquidity to finance emergency relief and reconstruction work after a natural disaster.

The support of markets around the world, combined with organisations such as the World Bank and United Nations, has enabled the catastrophe bond market to grow from modest beginnings a little more than a decade ago at a rate of 20 percent p.a. It is expected that the asset class will top more than USD200 billion within the next 20 years. The structural risk premium and genuine diversification benefits see catastrophe risk beginning to establish itself as a truly new asset class with an alternate source of market beta. **SF**

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