

Introduction to ILS – Insurance-linked Strategies

What is ILS?

In the normal course of business insurers typically accumulate a concentrated portfolio of risks, largely determined by their geographic exposure and lines of business. To mitigate these risks an insurer may look to share them with another party prepared to assume that risk. This is called re-insurance. Re-insurers are paid to carry the risks that insurance companies wish to offload. However, even re-insurers end up over exposed to certain very large perils and to lay off some of these risks they access the capital markets via ILS. Re-insurers are prepared to pay a premium to the modelled fair value of these risks to the buyers of ILS to optimise their portfolios.

In the mid 1990's transactions between Warren Buffett's Berkshire Hathaway and the re-insurers were the genesis of the catastrophe related ILS market. Berkshire supposedly received \$590m to risk a \$1.5b loss from a 1-in-100-year California earthquake over a 4-year time horizon. The basis for these transactions was that it was prohibitively expensive for re-insurers to hold sufficient balance sheet capital to withstand a 1-in-100-year event in certain large perils. These perils, in order of size and importance were, and still are:

- US Hurricane
- US Earthquake
- European windstorm
- Japanese Earthquake
- Japanese Typhoon

Our focus is on a form of ILS that is publicly traded, with the prosaic name 'Catastrophe Bonds', generally referred to as 'cat bonds'. Cat bonds are relatively liquid which means there is no ambiguity around mark to market valuations. It also means, in theory at least, that a bond exposed to an approaching hurricane prices in the effect of that hurricane before it arrives. It can be traded accordingly, although it is difficult to acquire more knowledge about a hurricane's path and intensity than the publicly available meteorological services.

A cat bond is usually issued by an insurer, re-insurer, government, or corporation with over-exposure to specific catastrophe risk or risks. They are typically structured by an investment bank with the assistance of a catastrophe modelling firm. Typically, a cat bond will:

- Be issued with a precise level of protection above a specific threshold (a 'trigger' analogous to an insurance excess),
- Cover losses from a particular catastrophic event in a defined zone,

- Have no exposure to the credit risk of the issuer,
- Have a 3 to 5-year term.

For example, a bond might be issued for a 3-year period, for up to \$200m of losses above a threshold of \$500m, covering losses from a hurricane in a specific region of Florida. If a hurricane occurs and causes \$600m of claims, the offeror of the bond would bear the first \$500m of losses, and the cat bond would be obligated to pay \$100m, leaving a \$100m (i.e. 50%) return of capital (plus income) to the bond holders. If the insurer suffered \$500m or smaller loss, the bond would be unaffected and redeem at par; if losses exceeded \$700m the bond would lose 100% of its value, but no more i.e., the cat bond is limited to a 100% loss of capital. Note that the risk on any given cat bond is specific to the terms of that bond. It is the economic damage that it causes that matters, so that a very large hurricane that misses all built-up areas will have no impact on the cat bond market.

Cat bonds are issued through an Offering Memorandum which details all the legal rights and obligations of the various parties. It will also include a credit rating from a recognised agency. That rating is not a function of the offeror's credit, since the bond is isolated from credit risk on the issuer, but rather on the likelihood and magnitude of a payout based on the defined event.

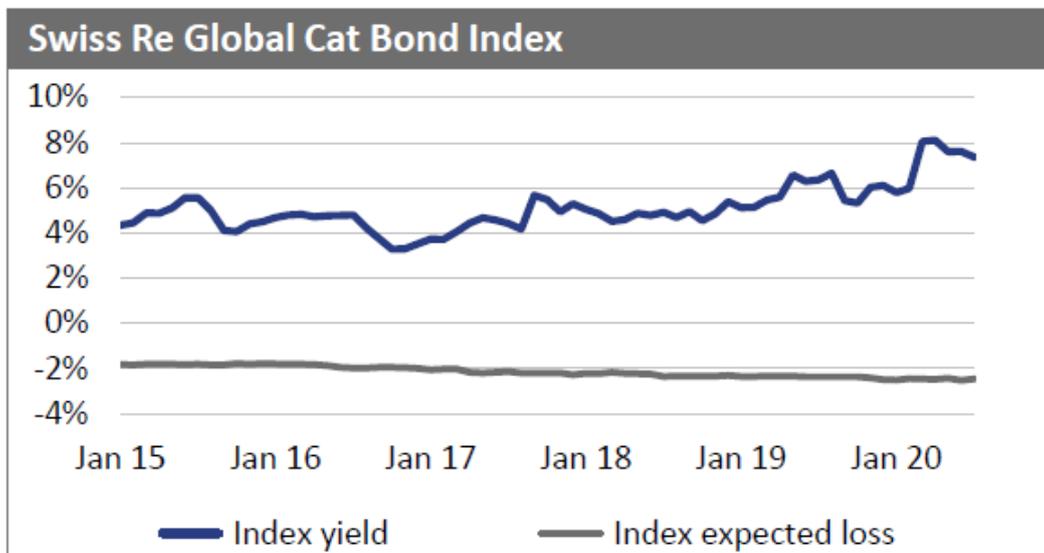
A cat bond may be issued to provide coverage for a single event, or often for multiple perils such as hurricane and earthquake across multiple geographies. This is driven by the specific requirements of the issuer.

In the absence of an event, bond holders receive coupon payments throughout the life of the bond and a full return of capital upon maturity. The coupon is typically a fixed margin above a floating rate such as libor. As such it benefits from rising rates.

The cat bond market is about \$30b in size, which is still relatively small both in a wider financial markets' context (at the time of publication about 4% of Tesla's market cap) and relative to the total reinsurance market of over \$300b.

What does ILS provide to portfolios?

ILS provides returns in excess of investment grade fixed income in an uncorrelated fashion. Returns are roughly equivalent to those available by assuming elevated levels of credit risk but without the same exposure to financial market conditions. There is minimal exposure to rising rates or other economic events because bear markets do not cause earthquakes or hurricanes, although they can cause spreads (i.e., marks to market) to temporarily widen somewhat.



Over recent years the ILS index has delivered a gross yield to investors of 4-8% with an expected loss of somewhere around 2%, delivering a gross expected return of 2-6% annually. The expected loss is an actuarial calculation of the annualised risk that the investor is assuming. Most years the realised loss will be zero, but from time to time could be much larger. Individual cat bonds can lose all their capital (but no more than that) and the potential losses for a diversified portfolio of cat bonds, which will be dominated by South-East US hurricane risk, is approximately 30% for a 1-in-100-year event. That is significant, but is probably no more than that for investment grade bonds, and is considerably better than for equities over a 100-year time horizon. Critically though, the ILS losses will not coincide with wider portfolio losses except by unfortunate bad luck (a major hurricane occurring during a financial markets crisis is unlikely but nevertheless possible).

The relative attractiveness of ILS at any point in time is a function of the spreads on offer. They are currently around 8% which is at the top end in normal market conditions. Immediately after a significant event spreads are likely to be wider still and investors will be rewarded for increasing their allocation at such times. Just as house insurance is more expensive after an earthquake, ILS is more attractive after losses.

Management of ILS portfolios is a highly skilled activity. Each cat bond needs to be meticulously understood and modelled to determine whether it offers sufficient reward for the risks being assumed. This is complex and time-consuming work, as is constructing portfolios of ILS securities to strike a balance between diversification and maximising risk-adjusted returns.

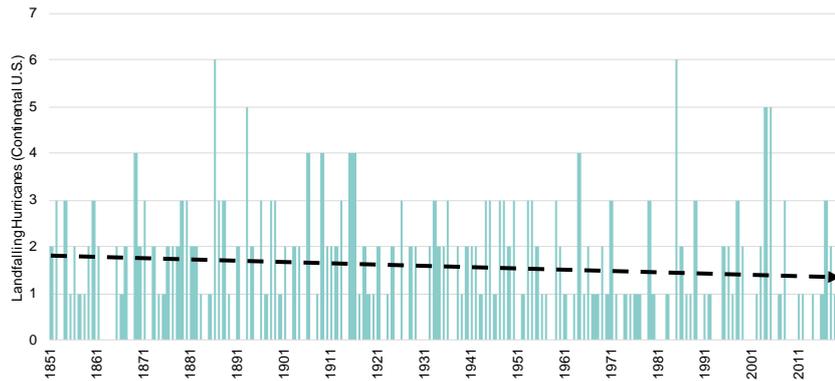
ILS's weaknesses

Among the most frequently cited concerns is the impact of climate change on ILS portfolios. It is natural to question the wisdom of insuring against natural catastrophe if climate change is increasing the occurrence and severity of those events. Earthquake risk is unaffected, and so the largest exposure by far is to US hurricanes. Most cat bonds are 3-5 years in duration and pricing is set at issuance, so the risk is that the probability of hurricanes increases over that

relatively short period of time. Historical data below on hurricane landfalls shows no discernible increase in the occurrence of hurricanes since the mid-19th century, let alone over the 5-year duration of a typical cat bond.

U.S. landfalling hurricane counts: 1851-2020

Hurricane landfalls are not increasing



- Hurricane landfalls are not rising over time [1].
- Media reports of increasing numbers of tropical storms are driven by increased detection of short-lived storms at sea (storms that exist for 2 days or less). Historically, such storms were discovered by ships at sea by random encounter. In the modern age, we have continuous satellite surveillance [2].

Sources: [1] Christopher Landsea / National Hurricane Center (NHC), and [2] "Impact of Duration Thresholds on Atlantic Tropical Cyclone Counts," Landsea et al., *Journal of Climate* 15 May 2010, 23, 2508-19, <http://dx.doi.org/10.1175/2009JCLB034.1>. The views are those of the manager and are subject to change. For illustrative purposes only.

However, because climate change is such a dominant concern, many investors are tending to demand an additional premium to allow for a perception of increased risk. This makes the spreads on offer more attractive than they would otherwise be, and so it can be argued that climate change makes ILS a more, rather than less attractive investment opportunity.

ILS is not a cheap strategy to implement. It requires large, highly skilled and experienced resources. As such fees are higher than for most actively managed fixed income funds.

The primary downsides with ILS are two-fold.

1. It is a strategy that most investors are unfamiliar with, and it takes time to acquire sufficient understanding.
2. To handle the inevitable losses that will occur over the medium term. Investors need understand the strategy and to be sufficiently comfortable with it to not just remain invested, but to consider increasing their allocation at such times.

Conclusion

ILS can enhance the yield of investment portfolios whilst reducing exposure to rising yields. Its role is primarily as a yield enhancer but it also plays part in risk mitigation. The returns available to ILS investors are driven by the needs of insurers and re-insurers to share some of their larger business risks and they are prepared to pay a premium to do so.

Disclaimer

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MyFiduciary recommends seeking assistance from a properly qualified financial adviser when considering the application of the investment views expressed to any particular situation.