

# Investment Horizons

## How chasing storms can generate uncorrelated returns

Many institutional investors use alternative asset classes as a complement to their equity and bond holdings to increase diversification and manage risk. Since the mid-1990s, this stable of alternative assets has increasingly included insurance-linked securities (ILS). The reasons why are easy to see. Being linked to insurance 'events', such as natural catastrophes or exceptionally high claims, the returns from ILS are almost completely uncorrelated with traditional investment influences, such as interest rates, economic growth or issuer covenants. As a result, they provide excellent diversification benefits for most traditional portfolios, as well as strong expected returns for long-term investors.

As an asset class, ILS have grown substantially in size and breadth over the last decade, meaning more opportunities for investors and more diversification within portfolios. It is now relatively straightforward for investors to gain efficient access to ILS via pooled funds and we expect the ILS market to continue to grow as demand increases, both from issuers and investors. Against that background, this article aims to provide an introduction to ILS and how they can be used by institutional investors.

### How do they work?

To protect themselves against the impact of rare but expensive outside claims, insurers often pass on some of the risks to third parties, such as other insurance companies or reinsurers. Since the mid-1990s, ILS have emerged as an alternative to this traditional reinsurance. These securities give insurers (and reinsurers themselves) access to a large additional source of capital, while transferring risk to investors.

ILS are often considered as bond investments. A bond's characteristics, however, are determined by the ability of the issuing country or company to repay the debt. With ILS,

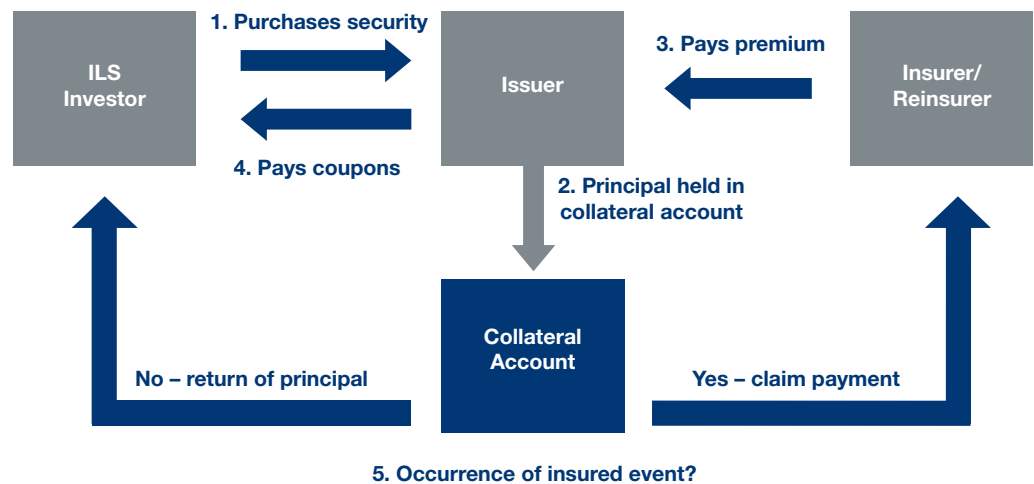


the factor determining whether the principal is at risk is not default, but the incidence of insurance claims (or some other event). The risks adopted by a buyer are more like those of pure insurance and often very specific to the contracts being covered. Therefore, the risk premium embedded in an ILS contract is different from the usual equity, duration and credit premia embedded in most institutional investment portfolios. As a result, the main drivers of returns from an ILS investment are distinct from those of most other financial market instruments.

There are a variety of different ILS products available. Catastrophe bonds (commonly referred to as cat bonds) are the best known. These transfer the financial impact of a specified, large natural catastrophe from a reinsurer to the capital markets. Using a simple cat bond as an example (see Figure 1), the cashflows are typically as follows:

1. The issuer of a cat bond is contracted by insurers and/or reinsurers to provide capital to cover certain insurance risks. An ILS investor buys part of the contract.
2. The investor's principal is invested in a ring-fenced collateral account, typically money-market funds or other low-risk investment.
3. The reinsurer pays periodic premiums for the insurance cover.
4. The issuer pays regular coupons to the investor, made up of the reinsurance premiums and returns on the invested collateral.
5. If the insured event occurs, the reinsurer makes a claim against the ILS collateral pool and the principal available for return is reduced or lost. If the insured event does not occur, then the principal is returned in full to the investor.

**Figure 1: Structure of a typical cat bond**



Source: Schroders, for illustration only

The return an investor receives from investing in ILS is therefore linked to the incidence of a predetermined event within a specified time period. The occurrence of this event triggers the loss of all or part of the investor's principal, which passes to the insurance company and helps them pay the relevant claims. If the insured event does not happen (a far more likely scenario), the investor receives all the regular payments on the bond, plus the return of their principal.

Many traded ILS bonds use 'parametric triggers'. This means that the insured event is not linked to actual claims made, but rather to the occurrence of a specific and measurable incident, such as wind-speed reaching a certain level in a specific location, or the occurrence of an earthquake of particular strength in a given area. These are 'cleaner' than bonds linked to real claims experience, given that the event is better defined and the consequent loss more clear-cut.

As well as standardised cat bonds, there are other forms of ILS. Private transactions are bespoke, collateralised reinsurance agreements which are drawn up between the reinsurer and individual investors. They are usually non-tradeable and typically have shorter lives than cat bonds, but often have higher yields. They broaden the universe of investible insurance-linked assets. For instance, life-related ILS give exposure to life insurance risk. Subsets within this category include extreme mortality (pandemics) and longevity risk.

Each ILS takes only a part of the risk resulting from a particular event, such as an earthquake, hurricane or pandemic. The insurer decides which parts of the risk to retain internally and which to re-insure externally. For example, in the case of a large book of hurricane insurance, where a bad storm may generate hundreds of millions of dollars of claims, the reinsurance structure might look like this:

- the insurance company absorbs the first \$100 million of losses incurred from claims,
- a panel of other insurers, arranged by a broker, shares the next \$300 million,
- traditional reinsurance is used to cover the next \$150 million,
- **collateral from the ILS is used to pay for losses between \$550 million and \$850 million,**
- the original insurer retains responsibility for the next \$100 million,
- another reinsurance provider will pay for the next \$200 million of losses...and so on.

### Which risks are transferred using ILS?

As noted, the primary risk taken on is the occurrence of insured events that trigger a payout. A well-diversified ILS portfolio typically offsets this impact by taking a series of small exposures to a range of uncorrelated risks. The investor also assumes a degree of counterparty risk and investment risk. These arise because the proceeds of the bond issue are placed in a trust to guarantee the insurance obligation assumed by investors during the life of the transaction. The returns on the trust assets may support the coupons on the ILS.

The catastrophe bond market is relatively liquid. Although the approximately \$17.5 billion<sup>1</sup> of capital outstanding is a mere fraction of the total debt outstanding on the worldwide bond market, there is a secondary market in catastrophe bonds which trades daily and provides a reasonable level of liquidity. Admittedly, there is a risk that, after a severe catastrophe, trading temporarily stops in some instruments. By the same token, however, recent experience suggests the market does not dry up at times when traditional financial instruments are illiquid, such as in late 2008.

Although the volatility of ILS has been very low compared with other asset classes and losses much rarer, it is important to remember that they can be very large when they do occur. This is because the triggers, e.g. natural disasters, are themselves rare and often very costly. Managing these 'tail risks' is an important part of a successful ILS strategy.

Predictions about catastrophes and their impact is a very inexact science. Owing to the uncertainties involved, the pricing of insurance risk is therefore difficult and complex. Even the most sophisticated models and approaches for evaluating insurance and reinsurance costs involve a wide margin of error. For those ILS with parametric triggers, the pricing is far simpler, being based only on the probability of the event occurring and its severity.

### Why invest and why invest now?

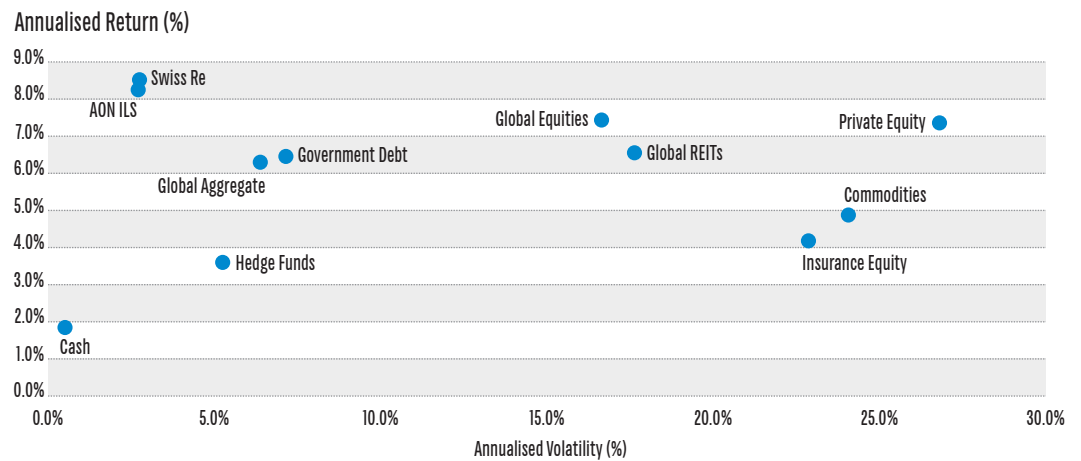
The investment rationale for ILS is straightforward: good returns and healthy diversification. While past performance in itself is not a reliable guide to the future, we believe that the fundamental drivers of these characteristics remain in place.

<sup>1</sup> Source: Hewitt EnnisKnupp, June 2013

### 1. The returns case

ILS investing has generally been a very positive experience for investors despite the incidence of very large natural disasters, such as hurricanes Katrina and Sandy, and the 2011 Japanese earthquake. There are several indices commonly used to represent the asset class, each with slightly different focuses and composition, but each has generated strong track records in comparison with both traditional and other alternative investments (see Figure 2).

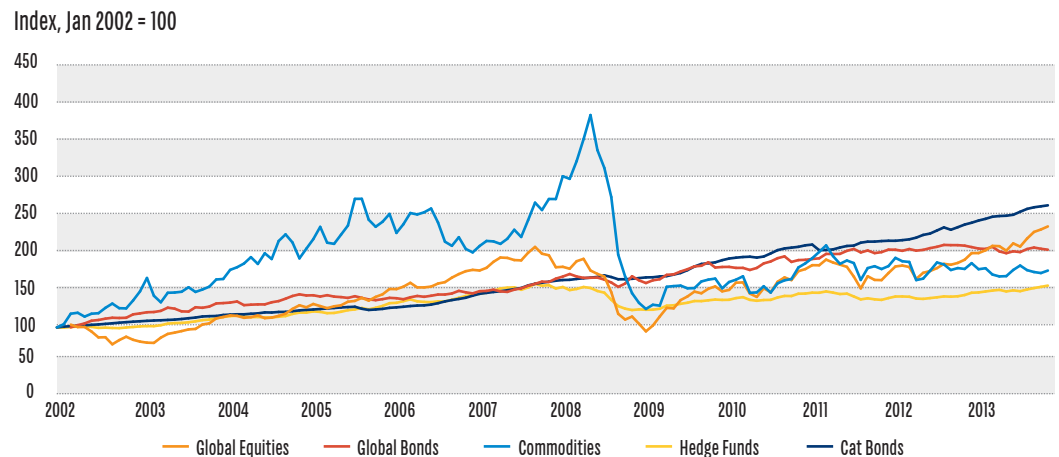
**Figure 2: Returns on ILS have remained relatively high and stable**



Source: Bloomberg and Datastream. Data as of 31 December 2013. Swiss Re: Swiss Re Global Cat Bond Index; AON ILS: Aon Benfield All Bond ILS Index; Global Equities: MSCI World Index; Government Debt: Citigroup WGBI World Index; Global Aggregate: Barclays Global Aggregate Index; Commodities: S&P GSCI Commodity Index; Global REITs: FTSE EPRA/NAREIT Index; Developed Total Return Index; Hedge Funds: HFRI FoF Composite Index; Private Equity: LPX 50 Index; Cash: US Interbank Three Month Index; Insurance Equity: MSCI World Insurance Index.

Insurance risk generally offers what on most definitions is a risk premium: a positive expected return in return for taking a justifiable and sustainable source of risk. In meeting a counterparty’s financial needs (in this case, for tail-risk protection), ILS investors accept a quantifiable risk and earn a commensurate reward. Moreover, that return has been much steadier than that of other assets (see Figure 3).

**Figure 3: ILS returns have taken a slow and steady path, unlike many other financial assets**



Source: Barclays, Hedge Fund Research, MSCI, Standard & Poor’s, Swiss Re and Schroders. As of 31 December 2013. See Figure 2 for index detail.

Although the volatility of ILS returns has been very low compared with other asset classes, it is important to remember that its distribution is very different. The nature of insurance is one of collecting relatively small coupons on a regular basis and paying out significant sums on an infrequent basis. Managing the ‘tail risks’ that give rise to these payouts is an

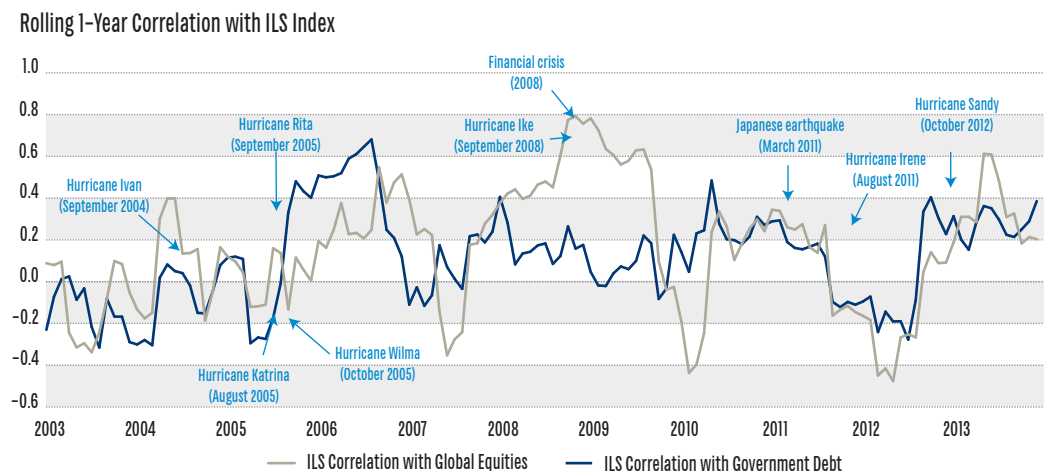
important part of a successful ILS strategy. The research and pricing of ILS are driven by the anticipated level of claims, so prices tend to rise after a major catastrophe and to drift lower after a quiet year, such as 2013. And, of course, investors have to remember that there is a fixed upper limit to the proceeds generated by the security.

Although we believe that the fundamental drivers of ILS returns largely remain in place, they are in no way guaranteed to repeat past performance. Indeed, it would be prudent to expect more modest returns than those seen historically, and potentially higher volatility too. But even taking this into account, we still anticipate positive real returns over the medium to long term, making this an attractive investment prospect for most institutions.

## 2. The diversification case

One of the main reasons for investing in alternative assets is to benefit from their low correlations with traditional investments and thereby increase portfolio diversification. This is no different with ILS.

**Figure 4: ILS returns have taken a slow and steady path, unlike many other financial assets**

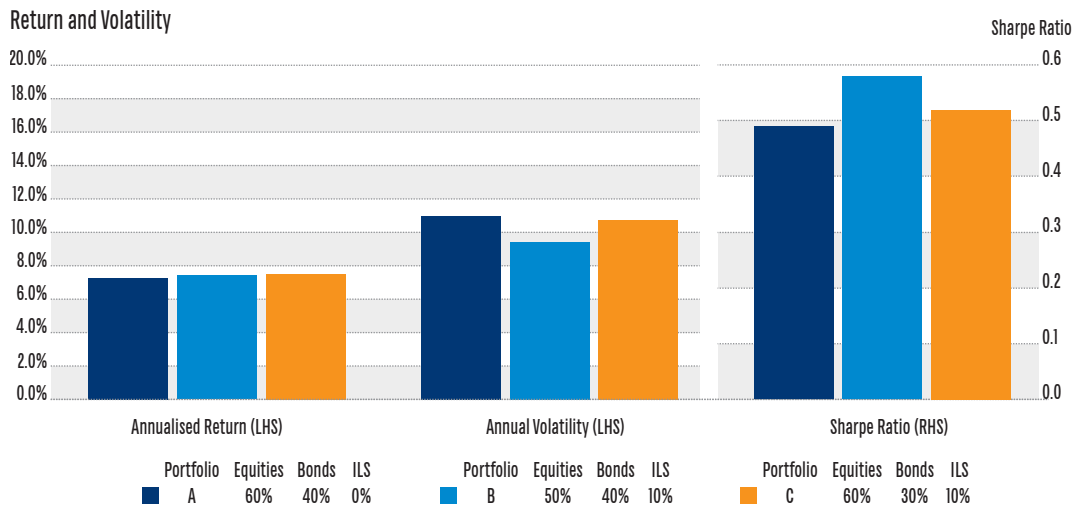


Source: Schroders. Data from Datastream and Bloomberg, as of 31 December 2013. Indices used are MSCI World Index (global equities), Citigroup WGBI World Index (government debt), and Swiss Re Global Cat Bond Index (insurance-linked securities).

Figure 4 shows the historical correlations of ILS with equities and bonds, and the impact of the largest natural catastrophes of recent years. It is clear that ILS generally move independently of other financial assets. The correlation spiked in September 2008 only because of the concurrence of Hurricane Ike with the global financial crisis. It would be very hard to argue that Hurricane Ike, although the third-costliest hurricane ever to hit the US, caused the crisis. This was surely a coincidence, and we can see this as the correlations return to previous levels once the impact of that period wears off. In this case, three years later.

This low correlation with other assets, together with the strong returns mentioned earlier, has meant that an allocation to ILS has served both to increase returns and reduce overall volatility in a wider multi-asset portfolio. This is particularly important where investment efficiency is measured by the Sharpe Ratio, that is, returns achieved per unit of volatility. We have simulated some portfolios to show the impact of introducing varying levels of ILS to a portfolio. The results are shown in figure 5.

Figure 5: Adding ILS to a balanced portfolio gives improved outcomes

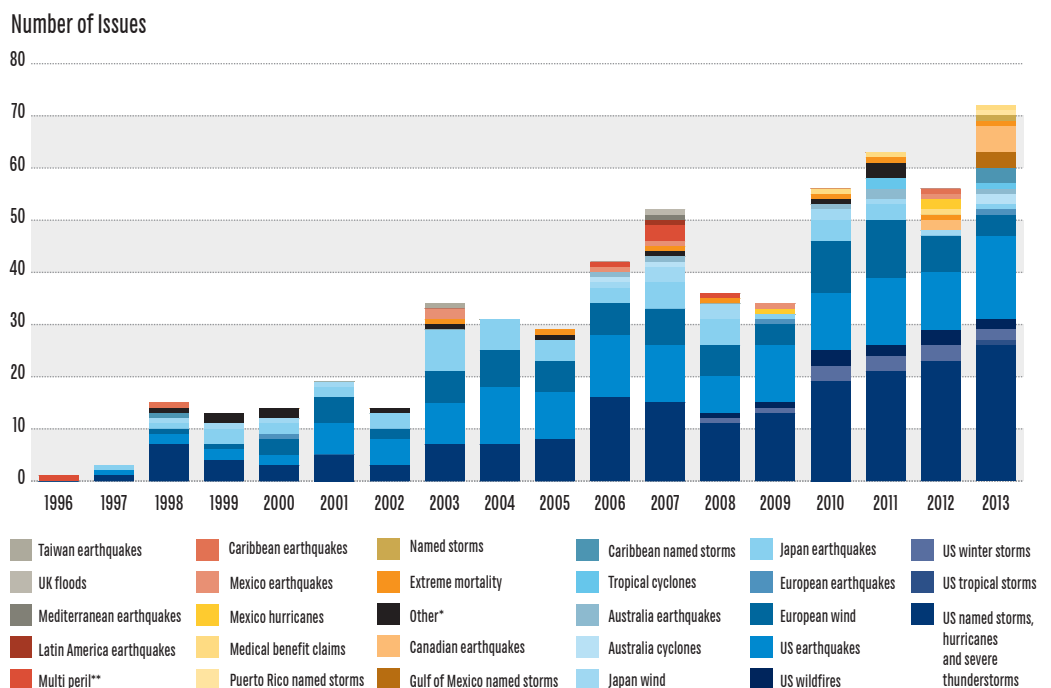


Source: Schroders. Data from Datastream and Bloomberg. Indices used are MSCI World index (equity), Barclays Global Aggregate index (bond) and Swiss Re Global Cat Bond index (insurance-linked securities). Period analysed is from January 2002 to September 2013.

### 3. Why now?

The ILS market has grown substantially over the last decade, yet it still represents only 25% of the total catastrophe risk insured worldwide and is only a fraction of the global bond market. We expect growth to continue as demand from insurers persists and more investors become familiar with the asset class. One positive factor will be the introduction of the Solvency II rules in the insurance industry, as the higher reserving requirements mandated will mean reinsurers have less capacity to retain such large risks on their own balance sheets. Figure 6 shows both the growth and the increasing diversity of issuers of ILS.

Figure 6: The market has grown wider and deeper



Source: Artemis Catastrophe Bond and Insurance Linked Securities Deed Directory. Data as of December 2013.

\*Other perils include storms, earthquakes, cyclones, hurricanes outside the US and Japan, as well as lottery wins, medical claims, pandemics and longevity.

\*\*Multi peril also includes worldwide all risks.

## Conclusions

The growth of the ILS market has a number of advantages for potential investors, including increased opportunities for fund managers to exploit, and enhanced liquidity for trading in and out of positions. In addition, the wider range of ILS available makes it easier for fund managers to create diversified portfolios. There is also a comfort factor in that the structures of most ILS are increasingly standardised and tailored to meet investor requirements.

As the market has grown, so has the range of investment options available to institutional investors. It is now possible to invest in pooled funds covering a range of cat bonds, private catastrophe transactions, other non-life risks and life insurance risks, either separately or in groups. The asset class has never been as accessible as it is now.

Despite being a relatively straightforward concept, it is important to remember that ILS remains a relatively complex asset class. Indeed, the skewed returns mean that traditional measures of risk, such as volatility and value at risk, can seriously understate the possibility of significant loss of capital. A deep insight and long experience are essential to be able to assess adequately the risks transferred by each security and make an investment decision.

For those who have sufficient governance capacity to handle the risks, we think ILS should become an increasingly mainstream part of their investment armoury. This is not an asset class on which to bet the farm, and the 'non-normal' nature of the results must be understood by those considering an investment. However, even a modest allocation within a typical portfolio will give risk reduction through diversification, without damaging the overall expected return. These attributes should make ILS a highly attractive addition to most portfolios.

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Scott Lothian, Senior Strategist, Global Strategic Solutions