

Insurance-Linked Investments: Integrating catastrophe risk

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Reinsurance risk is clearly diversifying against pension funds' core financial market risks. But Martin Steward writes on the importance of defining objectives beyond simple diversification when investing in this asset class

You may have heard that Warren Buffett has bought a big chunk of Heinz. Berkshire Hathaway's stake consisted of about \$4bn in ordinary shares yielding 2.8% and \$8bn in preference shares yielding an astonishing 9%. Even without dividend growth, that amounts to 7% yield – almost 100 basis points in excess of the average US high yield bond.

Much discussion has focused on whether Buffett had finally been caught overpaying for something. Less discussed was the cost of Berkshire Hathaway's own financing. Even if that were the US Treasury Bill rate of 0.4%, we would still be looking at a 660 basis point spread. But we aren't. An important source of leverage for Berkshire, as described in a recent paper by AQR Capital Management's Andrea Frazzini, David Kabiller and Lasse Pedersen, comes from the loan-like practice of collecting insurance premiums up front and paying claims later. Since 1976, the authors estimate the cost of that loan and other financing has been, on average, just 2.2%. But since 2006, that cost has actually been negative – on average, -4%. That makes the Heinz deal's spread over Treasuries, high yield or the equity risk premium look even more impressive.

This is interesting for pension funds that are also taking, or considering, reinsurance risk. The case usually revolves around the obvious diversification benefits – but that clearly has nothing to do with why Warren Buffett assumes this kind of risk. Should investors look beyond simple diversification and consider the other characteristics that reinsurance risk brings to their portfolios?

While pension funds do not need the cheap leverage, they certainly are searching for yield in our low-rate world – and reinsurance risk lends itself well to being structured as an income-generating, yield investment.

Reinsurers' premiums can be received up-front (as they are by Berkshire Hathaway), quarterly or semi-annually. Direct, bespoke reinsurance contracts, which last one year, can be structured for income, but investors can also buy catastrophe bonds, which typically last for 3-5 years and pay a quarterly Libor-plus floating rate. The premium divided by the total notional at risk is called 'Rate on Line' (ROL) if you are in reinsurance but you can think of it as 'yield' if you are more into bonds.

"It's a very fixed income-like asset class," says Pete Drewienkiewicz, head of manager research at Redington. "You get paid a regular income for as long as something doesn't go wrong, and when it does, you take a loss – it has the same asymmetric risk profile as credit."

Ryan Bisch, alternatives boutique leader in Mercer's Toronto office, agrees, and points out that, as investors increasingly blur the lines between fixed income and growth assets in more complex credit portfolios, more and more investments are being drawn out of the generic 'alternatives' bucket and into the relevant part of the broader portfolio.

"The idea that some things that used to get put into the alternatives bucket could be regarded as more of an income-generating alternative does begin to come up," says Bisch. "Intuitively, that makes a lot of sense."

Moreover, he notes that many big fixed income managers bought reinsurance risk for excess return against their credit benchmarks in the low-spread environment before the financial crisis. "The idea that this should be seen as an income asset is consistent with some of the historical providers of capital we've seen," he says.

Not everyone agrees. While Todor Todorov, New York-based hedge fund manager researcher with Towers Watson – which, in addition to its consulting work is the world's fourth-biggest reinsurance broker in the form of Towers Watson Capital Markets – says that this risk should be seen primarily as a diversifier in the return-seeking portfolio. "We don't see it as part of a fixed income portfolio," he says. "The underlying risk is very different. We really look at it as an asset class all on its own."

Pension funds that have made allocations tend to see it this way, too. Sweden's AP3 has had about 2% in the asset class since 2008 and head of investment research and ILS Dan Bergman is explicit that the investment was not made with an eye to income.

"I was asked in 2006 to identify investments with attractive risk-adjusted returns and a low correlation to equity risk that could replace part of our equity investments," he explains.

At the New Zealand Superannuation Fund, which invested with Elementum Advisors in 2010, head of investment analysis David Rae is also clear. "We invested in catastrophe risk instruments entirely as a diversifier with attractive risk-adjusted returns," he says. "We have no need for or desire for yield."

As Bisch puts it, most new investors are comfortable focusing on the diversification benefit and anything else – "illiquidity premium, income or whatever" – is second-order. "But there is the potential for that role in the portfolio to change and evolve," he suggests.

Does taking a different view – making income and yield the priority over diversification, for example – really matter when considering this asset class? Possibly, in a number of ways.

Combining diversifying assets lowers the mark-to-market volatility of a portfolio – as long as those assets are liquid enough to be marked to market and volatile enough and available in enough size to deliver meaningful risk into that portfolio.

But the market in cat bonds and other forms of collateralised reinsurance is worth just \$60bn (€46bn). Even the total market in reinsurance only edges about \$250bn. Does AP3's 2% (or 3% of its equity allocation) really move the portfolio risk needle?

In addition, diversification pays off because assets that perform well can be sold to fund purchases of assets that have performed badly – again, as long as those assets are liquid enough. But while there is a secondary market of sorts for cat bonds, liquidity is not great, as banks don't

hold inventories. Other types of reinsurance contracts are only written at the beginning of the year and before the US hurricane season, maturing after 12 months.

That means liquidity for all reinsurance investments is essentially bunched in those two periods, or as one-third of a catastrophe bond portfolio necessarily rolls off each year. To put that another way, the liquidity of catastrophe risk is associated with the return of capital at maturity, or with the regular payments from investments structured for income.

If this asset class is purely about long-term return for your portfolio, then the diversification benefits are by the by, and you would re-invest premiums in new reinsurance risk as and when it became available. Because you do not need diversification, you do not need liquidity in the form of realised income. By the same token, investors hold private equity for an illiquidity premium above listed equity, not diversification against it. But if you do regard this asset as a diversifier, its income element – its source of liquidity – is absolutely key to that role.

And just as this income liquidity is crucial for realising diversification benefits, so it is crucial for maintaining a desired level of portfolio exposure to catastrophe risk. And this is important because of the tail risk associated with it. As Bergman at AP3 puts it: “It is not a matter of if we will have losses, it is a matter of when.”

Those losses can be extreme, particularly if portfolios are focused – as catastrophe bonds are – on the high-cost impact ‘peak perils’ of US hurricane, European wind, California earthquake, and Japan earthquake. Because years can go by without any losses, it is critical to make an active decision about re-investing premiums and not close your eyes as a 5% allocation grows to 10%.

Moreover, ROLs fluctuate significantly. Before Hurricane Katrina in 2005, AQR estimates that premiums (ROL minus expected loss) for US hurricane risk leapt from about 500 basis points to more like 1,200. European wind risk premiums went from 400 basis points to 1,200 and back again between 2005 and 2010.

This is part of the attractiveness of catastrophe risk for institutional investors: when losses are incurred, capacity to provide reinsurance is impaired and premiums go up, even though the probability of another catastrophe has not changed. But of course it also means that if you blindly re-invest premiums you will certainly end up doing so for poor compensation.

Thinking about the asset class as an income-generating, yielding one – rather than simple a diversifying one – should help investors used to worrying about the re-investment risk associated with bonds appreciate this. As the CIO of a UK DB scheme with a 1% allocation puts it: “I’m not sure what the value of diversification is for its own sake. We see it as a source of diversification but we also hope that it will be a source of income and it has to stand on its own two feet in terms of total returns.”

This notion of diversifying income is potentially a useful one. This pension fund CIO goes on to recall, with Bisch, the days when “high-yield managers would buy catastrophe bonds explicitly as a diversifier within those high-yield portfolios”. Today, those bond managers enjoy plenty of opportunity in credit markets – and it is their job to take credit risk. For pension funds, credit risk forms a part of the search for yield, but ultimately they are agnostic about the underlying risk behind that yield. To avoid concentrating it in corporate credit, many have considered mortgage bonds, infrastructure debt, social housing and other alternative income assets. Seen in this context, the diversification benefits of catastrophe risk, structured for income, arguably become much more significant than they are when seen as simple diversifier against an entire portfolio.

But that raises a new question. Do expected returns from catastrophe risk resemble those

expected from these other income assets?

“Catastrophe risk comes in many shapes and forms,” says Bergman at AP3 – which, as we have seen, regards this as an equity diversifier. “There is a full spectrum of returns that you can target, ranging from low single digits to 20%-plus. Depending on your target you will take more or less risk, and we are very well aware that we have a substantial amount of risk in this portfolio. If you invest in the lower-return, more remote risk area, then your investments are likely to resemble traditional corporate bonds.”

That sounds simple enough, but it is complicated by the fact that premiums in catastrophe risk are so clearly influenced by supply and demand in addition to the indemnity risks themselves. We see that in the fluctuations of premiums around indemnifying events, but also in the pricing of different types of peril.

Because they do not hold one dollar of capital for each dollar of risk, reinsurance companies try to build diversified portfolios. That means they will be price takers in some especially diversifying markets – non-peak perils in local markets – in a way that a non-traditional investor in catastrophe risk would not. By the same token, they are most anxious to lay off superabundant (non-diversifying) peak-peril risk. Pension funds, which do not need to diversify their catastrophe risk, therefore get the best risk-adjusted ROLs from the high-risk peak perils – and would be forced into low risk-adjusted ROLs if they tried to compete with re-insurers for non-peak peril.

“There are several reasons why peak cat risk has attractive risk-adjusted returns,” as Bergman puts it. “One important one is that there is simply too much Miami hurricane risk out there to digest, even for the giant re-insurers. Peak risk creates diversification for us and concentration for them. As long as this situation persists, pension funds like AP3 are natural takers of some of these risks.”

In other words, at the moment it seems that taking the fatter tail risk associated with peak perils is handsomely rewarded and, as Bergman suggests, that makes an argument for regarding catastrophe risk as an equity diversifier – both the returns and the tails are equity-like. And yet the key thing is that tail risk, combined with the illiquidity of catastrophe risk – which returns us to the importance of understanding this asset class as an income generator, of income as the source of liquidity, and of re-investment risk in the management of the allocation. The questions are complex, but the message simple: consider your objectives when allocating to catastrophe risk. It is not only sub-optimal simply to accept this as a ‘diversifier’ – it can be dangerous. First, what precisely is it diversifying against? Credit risk? Equity risk? That decision should determine the risk profile you choose in your catastrophe portfolio. Second, how much are you being paid to take this diversifying risk? Is it enough to re-invest now?

The divergent performance of hedge funds during 2008 caused investors to go beyond simple assumptions about diversification and really interrogate where individual strategies should sit in institutional portfolios. They should go beyond such assumptions in catastrophe risk today.