

Insurance-Linked Securities in the life industry

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Introduction

Over the past decade, Insurance-Linked Securities ('ILS') have become an integral part of the non-life insurance industry, best known as a way for a reinsurer to transfer its tail exposures to natural catastrophe events (e.g. hurricanes, earthquakes, etc.) to the capital markets. Indeed, the non-life market has been the major contributor of recent growth of the ILS market, which has become an \$86 billion market globally¹. In comparison, traditional reinsurer capital is estimated to amount to \$519 billion¹.

More specific to the scope of this paper, ILS in the life industry ('Life ILS'), whilst less mature than the larger non-life segment, is once again becoming an important provider of capital and is set to grow further in the coming years. As most Life ILS transactions are privately-placed, reliable measures of market size are harder to pinpoint than for non-life. One indicator of market size is the transaction volume for Life ILS in 2014, estimated to be over \$25 billion². However we note that a portion of this estimate includes certain types of transactions that did not involve the issuance of securities, in particular certain excess reserve financing transactions written in the US life market (commonly referred to as XXX/AXXX transactions after the relevant regulation).

In this short paper we explore the re-emergence of ILS in the life industry and the benefits ILS can bring for life insurers and reinsurers ('(re)insurers') in the context of the evolving regulatory and accounting environment and an increasing focus on pro-active management of risks, capital and liquidity. This paper will be of particular interest to (re)insurers that may be unaware of the potential benefits of ILS solutions.

The re-emergence of Life ILS

Life ILS, investible forms of life insurance risk that act as a mechanism to transfer life risks to the capital markets, are in essence structured life transactions that closely resemble well-established solutions in the life reinsurance market. Such transactions have featured in the life industry for many years. However, after a number of highly publicised ILS deals in the UK and Irish markets in the early- to mid-2000s, activity diminished during the global financial crisis. Prior to the crisis the Life ILS market suffered from a number of fundamental weaknesses. Most notably, placement agents, such as investment banks, relied heavily upon credit enhancement provided by financial guarantee insurers (often referred to as 'monolines'), as opposed to educating ILS investors about the nature of the risks underlying the transaction. With the impact of the mortgage-backed securities debacle on many of those monolines,

¹ Source: Aon Benfield, "Reinsurance Market Outlook", June and July 2017 Update.

² Source: Milliman, "Life ILS: 2014 year in review and looking ahead to 2015", Routhenstein, Schreiber & Silverman.

the issuance of publicly-placed Life ILS transactions essentially ground to a halt, with the exception of extreme mortality catastrophe bonds. Another shortcoming of early transactions was the complex legal structures adopted, resulting in expensive and time-consuming processes, making them viable only for large transactions.

In recent years, however, Life ILS solutions have re-emerged and once again are becoming an important feature of the industry. Unlike early transactions, most Life ILS transaction processes no longer involve complicated and expensive structures. From the perspective of the ceding (re)insurer, the process, costs and effort to implement a typical transaction are often not dissimilar to those involved in setting up a standard reinsurance arrangement. This means the market is no longer just accessible to the largest (re)insurers, but also to small life insurers in relatively early stages of growth.

Life ILS cover a multitude of possibilities. At a high level, we might summarise that the Life ILS market acts as a provider of:

- **Liquidity**, for example by monetising and securitising the illiquid 'Value of In-Force' ('VIF') asset that is embedded within the (re)insurers' portfolio of long-term life business, which can in turn support a variety of business objectives, including capital fungibility and operational leverage;
- **Risk capacity**, for example by transferring extreme mortality or morbidity risks, in order to align risk exposures with risk appetite; and/or
- **Capital relief**, as a result of risk transfer that results in either a reduction of capital requirements and/or enhances the regulatory recognition of a life insurance asset's economic value.

Against the backdrop of global regulatory and accounting change and an ever-increasing shift towards more active management of risks, capital and liquidity, it is likely that ILS markets will support an expanding number of regulatory and business objectives for the life (re)insurance market over the coming years. In a later section of this paper we outline a few common ILS structures that can help to achieve such objectives.

The growing capacity of the Life ILS market

ILS investors, i.e. the parties that provide the capital to write ILS transactions, are typically institutional investors – pension funds, sovereign wealth funds, family offices and even insurance companies – all of whom have been increasingly drawn into the ILS sector as a way of achieving yields that exhibit low correlation with traditional asset classes, such as equities and fixed income. That trend has been accelerated by the current global interest rate environment, which has led to a broad range of traditional asset prices to become inflated (as compared to average historic levels).

While the majority share of ILS capital continues to flow into the non-life sector, investors are now allocating more meaningful volumes of capital into the life sector than has recently been the case. This is primarily driven by an increasing understanding of the life segment among the ILS community. Long-horizon investors, notably pension funds, are especially attracted by life-specific investment characteristics, such as a relatively stable (and diversifying) yield profile and a medium- to long-duration

cash flow profile. To some extent increased capital flows into the Life ILS market are also a consequence of the softening non-life reinsurance market, with more ILS investors now turning attention towards the life sector.

The role of Life ILS

The ILS market represents an alternative source of capital for the life industry. It sits naturally alongside more traditional sources of capital, such as debt, equity or even traditional reinsurance capital. By combining the available capital sources in an appropriate way, a (re)insurer can seek to optimise its capital structure in the context of its strategic, risk and business agenda.

One can summarise the relative market positioning as follows:

Table 1: Relative positioning of alternative sources of capital

Equity	<ul style="list-style-type: none"> Provides an insurer with maximum flexibility in terms of liquidity and loss absorbing capacity. The main drawback is cost, typically being the most expensive source of capital, hence insurers will often seek alternative sources of capital to optimise the capital structure.
Reinsurance	<ul style="list-style-type: none"> A traditional reinsurer's natural position is to provide a ceding insurer with risk capacity on a leveraged (i.e. non-collateralised) basis, using its credit rating to provide the insurer with adequate security that reinsurance claims will be paid, which in turn provides the insurer with capital relief. Additionally a number of reinsurers also have moderate capacity to provide liquidity to insurers in the form of reinsurance financing, which will involve some level of risk transfer.
Life ILS	<ul style="list-style-type: none"> The ILS market might be considered as a more natural source of liquidity than a traditional reinsurer's balance sheet, yet at the same time can assume insurance risks. Risk transfer solutions offered by ILS providers differ from those of traditional reinsurers, in that they are collateralised arrangements. This improves counterparty credit risk, but can limit the types of solutions that can be offered.
Debt	<ul style="list-style-type: none"> Debt investors will normally have limited appetite for insurance risk, which means that debt can be considered lower quality capital in terms of its ability to absorb losses. This can affect its regulatory treatment (e.g. under the tiering rules of Solvency II), which can act as a natural limit on the levels of debt issued by (re)insurers. In the past some banks have offered risk transfer solutions, although the capital implications arising from the introduction of Basel III has reduced that appetite.

Traditional reinsurers and the ILS market

As has been observed over the past two decades in the non-life market, there is a significant opportunity for natural business partnerships to emerge between traditional life reinsurers and Life ILS providers. Several life reinsurers are already exploiting this opportunity and it is likely that this trend will continue in the coming years. Examples of such a partnership include:

- **Liquidity support:** the traditional reinsurer may require liquidity support to fund a VIF monetisation. Such situations can arise where the financing amount exceeds the reinsurer's capacity/appetite.
- **Leverage:** even when a traditional reinsurer may have the capacity to fund a financing transaction, it may prefer to utilise ILS capital in order to leverage its financial returns on the arrangement and/or allow it to allocate a portion of available financial resources towards other initiatives.
- **Risk capacity:** the traditional reinsurer may require additional risk capacity to support a large risk cover or reduce its own exposures, in order to align net exposures with risk appetite.

In a similar way, business partnerships also emerge between investment banks and either ILS providers or traditional reinsurers.

There are circumstances where direct insurers may find it more beneficial to access the ILS markets directly. Examples include large insurers who have sufficiently large portfolios to support a transaction that can be placed directly into the capital markets; or smaller insurers with a greater focus on liquidity than risk transfer (e.g. unit-linked writers) and where the transaction size falls below the typical domain of the investment banks or debt markets.

Common types of ILS transactions

The vast majority of Life ILS transactions are private, bespoke arrangements that are designed around a specific set of business objectives. As such the structural features of an ILS transaction will often vary on a case-by-case basis. In broad terms, however, the basic structure of any transaction will depend on whether the primary objective of the sponsoring (re)insurer relates to (a) liquidity, supported by a VIF securitisation; or (b) risk transfer. We consider each separately in the following subsections.

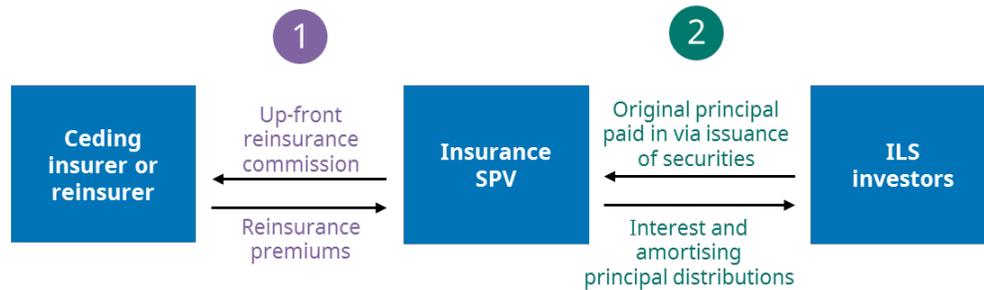
Basic structure of a VIF securitisation

As indicated earlier, VIF transactions are structured transactions with a primary objective to raise cash financing against the economic value (future profits and/or cash flows) embedded within a portfolio of life insurance business. Risk transfer can also play a prominent role in these transactions, depending on the structure adopted and the specific business objectives.

Most often VIF transactions relate to a closed block, but can also relate to an open block of business, where separate tranches of financing are provided as new blocks of policies are written. The latter is most often employed to relieve new business strain of writing new life policies, which is often a growth constraint for small- and medium-sized life insurers.

The basic ILS structure that is typically adopted for such transactions is illustrated in Figure 1.

Figure 1: Basic structure of a VIF securitisation transaction



1. Reinsurance agreement

2. Subscription agreement

The ceding insurer or reinsurer enters into a reinsurance arrangement (e.g. a quota-share treaty) with an insurance SPV in relation to a defined life insurance portfolio. An up-front reinsurance commission paid by the SPV to the (re)insurer provides the cash financing, which in turn is funded through the issuance of securities (e.g. shares or notes) from the SPV to the ILS investors. In this way the SPV acts to transform the reinsurance arrangement into investible securities for the ILS investors.

In return for the upfront reinsurance commission, the cedant agrees to pay future reinsurance premiums which are contingent upon the emergence of portfolio cash flows on the reinsured portfolio, for example profits associated with future premiums or future fee revenue, or the future release of prudent margins in the insurer’s technical provisions. As reinsurance premiums are contingent upon the emergence of underlying portfolio cash flows, the risk that insufficient cash flows emerge from the portfolio to repay the financing in full is transferred to investors.

Most VIF transactions will be a variant of the above structure, although many will have tailored structural features to meet transaction-specific objectives.

There is an additional step/counterparty in the structure when the ILS transaction is supporting an underlying reinsurance arrangement between a traditional reinsurer and a ceding insurer (i.e. where the ILS investors are providing additional liquidity to the reinsurer). In this case a retrocession agreement is written between the reinsurer and the insurance SPV in order to pass through the appropriate cash flows.

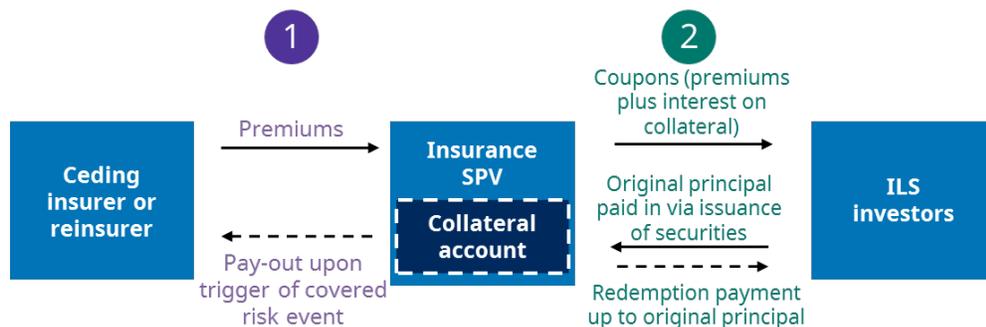
Basic structure of an ILS risk solution

Life ILS risk solutions are designed purely for the purpose of transferring insurance risks to the capital markets. Transactions can be motivated by a number of factors, including risk transfer, capital considerations and/or P&L management. The best-known example is the transfer of extreme mortality exposures by large reinsurers and insurers via the issuance of mortality catastrophe bonds. More generally ILS risk solutions can cover a number of risk types, including:

- **Mortality** transactions involve transferring the risk of policyholders living shorter lives than expected. Transactions can be designed to hedge against extreme mortality events (e.g. a global pandemic), as is the case for extreme mortality bonds, but can also cover long-term mortality trend risk or short-term claims volatility.
- **Morbidity** transactions involve transferring the risk of claims for illness, disability or medical costs. Transactions typically target extreme events
- **Lapse** transactions, specifically standalone lapse risk (rather than lapse risk embedded within a VIF transaction), involves transferring the financial risk for an insurer in the event that higher (or, in some cases, lower) than expected numbers of policyholders cancel their policies or discontinue their premium payments. A number of recent standalone lapse trades have been motivated by capital considerations around the lapse stress scenarios under Solvency II.

The risk transfer comes via either a swap contract or an underlying reinsurance arrangement (e.g. a stop-loss or quota-share arrangement). The basic structure is illustrated in Figure 2.

Figure 2: Basic structure of a risk transfer ILS transaction



1. Reinsurance or swap agreement
2. Subscription agreement

From the ceding (re)insurer’s perspective, the arrangement with the SPV is a standard reinsurance or swap agreement. However a key point is that the insurance SPV is usually not a rated vehicle, hence arrangements must be appropriately collateralised, often to the full coverage limit, to provide the ceding (re)insurer with adequate security that pay-outs will be made when due. Due to the impact on deal economics, the requirement to collateralise can limit the types and volume of risk cover that an ILS provider can offer.

A brief word on longevity risk

Observant readers will note that, until now, longevity risk has not been mentioned. Longevity is clearly a primary focus for life (re)insurers (and pension funds) in certain markets, notably the UK. While some of that longevity risk has been transferred to the capital markets via a small number of ILS transactions, there remain significant barriers and it remains unclear to what extent ILS markets will participate in the longevity space. A key hindrance is that the ILS investor base is currently dominated by pension funds, most of which have little appetite for assuming longevity risk on top of their own longevity exposures (although there are some exceptions to this general rule). Add to that the pricing uncertainties

surrounding longevity risk and it becomes clear that the natural home for longevity risk continues to be the balance sheets of large insurers and reinsurers, particularly those with large mortality exposures against which to diversify.

Conclusions

Following a period of low activity in the aftermath of the financial crisis, the Life ILS market has re-emerged in recent years and is once again becoming an important feature of the global life industry. Life ILS transactions have become significantly more cost-effective and less cumbersome than the early transactions of the early- to mid-2000s, meaning that the market is no longer accessible to just the large (re)insurers writing large transactions.

The ability of ILS capital to provide either liquidity and/or risk capacity means it fits well alongside more traditional capital sources, such as equity, debt or traditional reinsurance. Life (re)insurers can therefore seek to combine these sources of capital to optimise their capital structure and, in turn, their strategic business objectives. As awareness of the potential benefits grows, demand for Life ILS capital is increasing, even among small- to medium-sized insurers.

At the same time, supply is also increasing, driven by a growing understanding of the life market among the investor community, combined with an appetite for alternative asset classes that diversify well against traditional asset classes.

Growing demand and supply suggest one thing: further growth and development of the Life ILS market over the coming years.

About the authors

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About Milliman

Milliman is among the world's largest providers of actuarial and related products and services. The firm has consulting practices in life and financial services, healthcare, property & casualty insurance, and employee benefits. Founded in 1947, Milliman is an independent firm with offices in major cities around the globe. Milliman maintains a strong and growing presence in Europe with 250 professional consultants serving clients from offices in Amsterdam, Brussels, Bucharest, Dublin, Dusseldorf, London, Luxembourg, Madrid, Milan, Paris, Warsaw and Zurich.

Milliman can help (re)insurers to identify ILS solutions that can work for their business, and to understand the potential impact of ILS on capital, risk and liquidity in the context of their local regulatory environment.

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The views and opinions contained herein are those of the authors and may not necessarily represent views of their employers.

³ As at 30 June 2017