Insurance-linked securities (ILS)

1. Introduction

Insurance-linked securities (ILS) are financial instruments that are sold to investors and whose value is influenced by insured loss events. The term ILS encompasses catastrophe bonds and other forms of risk-linked securitization such as collateralized reinsurance (CRI), sidecars, and industry loss warranties (ILWs). The attractiveness of insurance-linked investments for investors is primarily due to their low correlation with traditional financial market products such as equities and bonds, given that their value depends on non-financial risks such as natural disasters, longevity risks, and extreme mortality. From the perspective of the cedent, i.e. the insurer or reinsurer ceding risks, the motivation is primarily to diversify access to reinsurance capacity and to exclude counterparty risks. ILS are traded as securities on the secondary market. They enable (re-)insurers to unload risks and raise capital. They enable life insurers to retrieve the value of their policies in advance by bundling them and issuing them as asset-backed securities (ABS). ILS are available in both tradable and non-tradable forms.

2. How do catastrophe bonds work?

The cedent – an insurer or reinsurer wanting to cede risks – enters into a reinsurance contract (insurance or derivative) with a special purpose vehicle (SPV) that has been established especially for this transaction. The SPV raises capital by issuing securities (catastrophe bonds) that are sold to capital market investors. The issue amount corresponds to the limit of the reinsurance contract. The proceeds from the issue are held as collateral in a (trust) account and invested on the capital market with the goal of preserving the investment value and generating stable income. If no insured event occurs during the term of the bond, then 100% of the nominal value of the bond is paid back to the capital market investors. If an insured event occurs, the funds held in the (trust) account are paid out to the cedent. The nominal amount of the catastrophe bond to be paid back to the capital market investors is reduced accordingly and may fall to zero.

Example: An insurance company covers catastrophe risks (Florida hurricane). It bears the losses itself as a deductible if the losses do not exceed USD 100 million. If the losses end up between USD 100 million and USD 120 million, the special purpose vehicle covers the excess losses. For that purpose, the insurance company pays a quarterly premium in the amount of USD 1 million to the SPV. The SPV issues a catastrophe bond with a nominal value of USD 20 million, which pays quarterly interest in the amount of USD 1 million to capital market investors (generally corresponds to the reinsurance premium that the SPV receives from the cedent). The proceeds from the issue of the catastrophe bond are kept as collateral in a (trust) account to which neither the cedent nor the capital market investors have access during the term of the reinsurance contract. If no insured event occurs during the term of the bond, 100% of the funds held in the (trust) account are paid out to the capital market investors. If a loss occurs that exceeds the deductible of the insurance company, then the insurance company is compensated for the loss from the trust account up to an amount of USD 20 million. If funds remain in the trust account afterwards, they are paid out to the capital market investors.

Collateralized reinsurance (CRI) in principle works the same way as catastrophe bonds. CRIs are reinsurance transactions that are not rated and not traded. They are placed privately and may be similar in complexity to traditional reinsurance contracts. For instance, some private transactions cover a mix of more than a dozen risks in non-insurance and specialty insurance. Some of these risks are non-modelled risks requiring supplemental models to estimate the income pattern.

CRIs have arisen in recent years; the first transactions were reported in 2010. They were developed because more money had been flowing into the ILS market than catastrophe bonds in which the money could be invested. An advantage of CRIs is that no structuring costs are incurred, and they can be implemented quickly. In recent years, CRIs have become the most important driver of growth in the ILS market. As of the end of 2015, the CRI volume totalled more than USD 40 billion.
Sidecars are products issued jointly by (re-)insurers together with external investors, in which both parties contribute capital. ILWs are insurance derivatives.

3. Market development

The ILS market is growing rapidly. According to Swiss Re, ILS issues did not rise in 2015 as of the end of the year for the first time since 2011. Total ILS issues were at USD 6.8 billion and 26 transactions. In 2014, issues were at USD 8.29 billion and 27 transactions. Total issuing activity in 2015 was about USD 100 million below the volume expiring over the course of the year. At the end of 2015, the outstanding ILS market volume was USD 25.9 billion, after USD 24.1 billion in the previous year. The solid investor demand and the absence of major loss events helped credit risk spreads fall to new lows at the end of March 2016.

The event risk inherent in catastrophe bonds is a reason why these securities have only a relatively low duration. Typically, the duration is between three and five years. Since the market for catastrophe bonds developed in the mid-1990s, 10 transactions defaulted, leading to a loss of the invested capital. This is relative to the 300 transactions issued over the course of the approximately 20-year history of the market. Of these 10 transactions, six were the result of an insured loss, and four were connected with a credit event, given that the company guaranteeing the collateral in the trust account (Lehman Brothers) defaulted.

Catastrophe bonds are a useful instrument for diversifying investor portfolios and a valuable risk transfer instrument for insurance companies ceding risks. Given low market interest rates, substantial funds flow into the market on the search for higher investment returns. The low interest rate environment has entailed that the yields on catastrophe bonds have fallen massively, as has also been the case in other fixed income markets such as corporate bonds.

The Luxembourg supervisory authority has announced that it will apply the 20/35 diversification rule to UCITS ILS funds in order to limit risk concentration. Luxembourg is an important domicile for UCITS ILS funds. The aim of the rule is to ensure that the maximum concentration in a single risk does not exceed 35% of the assets under management (AuM). In light of the fact that up to 70% of the risks insured on the ILM market are US risks (primarily windstorms) and some ILS funds deliberately invest in individual risks, this approach may pose new challenges for major UCITS funds, especially if other supervisory authorities follow Luxembourg's example.

4. Main risks

(i) **Model risk.** Extreme risks are covered that rarely occur, but if they do occur, they cause high losses. All crucial parameters of the reinsurance contract – such as expected loss, expected return, but also probability of default – are model-based, although the data situation may be restricted. Until the 1980s, natural disasters were considered uninsurable.

(ii) **Frozen or already paid-out collateral.** In principle, the investment fund as the representative of the capital market investor has an interest in having the funds held in the trust account paid out as quickly as possible upon the end of the term, while the cedent has an interest in having the funds paid out as late as possible. At the end of the term of the bond, there is in principle a danger for a short time that the money in the trust account is paid out or transferred to a trust account of a newly commencing reinsurance contract before it is ascertained that no loss has occurred. As a rule, an extension is agreed in the event of a loss so that it can be determined whether a loss has occurred and how high that loss might be. In at least one case, it did happen that the money kept as collateral in the trust account was paid out before the cedent was able to claim the losses.

(iii) **Market risk.** The price of reinsurance has fallen significantly, since a lot of money has flowed into the alternative market and the losses have been low. The cedent currently has the possibility of largely de-
termining the terms and conditions of the contract. Accordingly, the risk for capital market investors in relation to the expected return is quite high, and it has become less favourable over time.

(iv) **Liquidity risk.** For the term of the contract, the capital market investor has only very limited access, or no access at all, to the invested funds.

(v) **Legal risks.** Disputes may arise about whether a loss event has occurred or not. The cedent and the investors have different interests, which may have to be solved by legal means.

(vi) **Reputation risk.** In the case of a loss event or several loss events occurring within a short period of time, high losses may arise. Investors may lose the invested capital. This may lead to a reputation loss, provided that the name of the bank is associated with bad underwriting. Over the course of the global financial crisis, the reputation of many investment banks suffered when special purpose vehicles experienced financial difficulties, leading the banks in some cases to cover the losses themselves; in turn, this means that the balance sheets of the special purpose vehicles, which actually should have been kept off the banks' balance sheet, had to be included on the banks' balance sheet again.

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