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Industry Loss Warranties: the basics

Summary

Industry loss warranties ("ILW") are a form of insurance-linked security used to finance peak, non-recurrent insurance risks, such as hurricanes, tropical storms and earthquakes. The distinguishing characteristic of ILWs is the use of an industry loss index, that is, the payout is dependent on loss suffered by all insurers in connection with a catastrophe event and not just the loss of the insured. This feature allows instruments to be created and sold on short notice as the parties are only required to diligence the index. In addition, this narrow focus on the index promotes standardization, liquidity and price transparency. ILWs are part of a non-correlated asset class like other insurance-linked securities but are not burdened by the same illiquidity and high transaction costs. As available indices and data quality improves, ILWs offer more nuanced coverage and reduce their traditional weakness, basis risk.

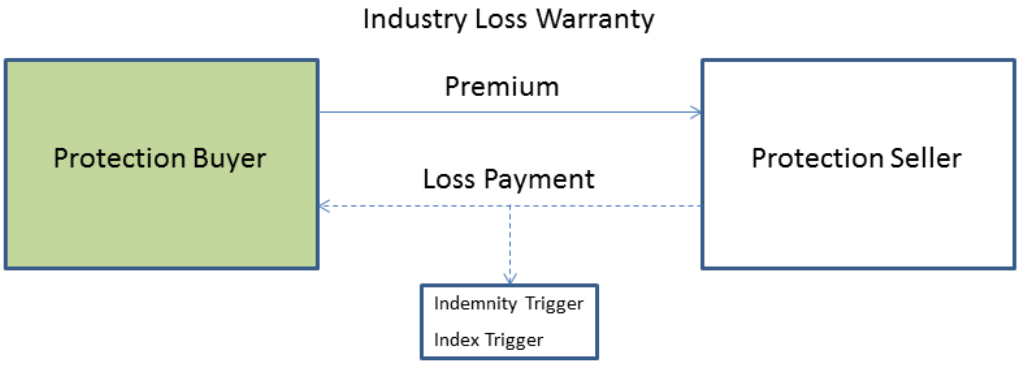
This article broadly explains ILWs: the most common forms; the reasons why (re)insurers and investors are attracted to ILWs; shortcomings of ILWs; how ILWs are legally structured and regulated.

Introduction

Industry loss warranties ("ILW") are one of a group of instruments referred to as insurance-linked securities ("ILS"). ILWs are used to hedge risk in the property catastrophe retrocession market. ILW contracts feature an industry loss index trigger, and, in some cases, a dual trigger design that includes a protection buyer indemnity trigger. A classic ILW takes the form of a bilateral reinsurance contract, but there are also index products that take the form of derivatives or exchange traded instruments. The common feature among these forms is that there is a payout trigger is based on an industry loss index or a parametric index. This article discusses the key characteristics of ILWs with an emphasis on the legal and regulatory framework for the instruments.

Forms of ILWs

Reinsurance Form



First brought to market in the 1980s, an ILW is an index-based instrument that is triggered when a catastrophe causes a predetermined amount of loss to the insurance industry. Contracts are typically framed in terms of location, peril (windstorm, earthquake), line of business, size of event (attachment point), number of events, and time period and/or duration. The reference index most frequently used is industry loss as calculated by Property Claims Service ("PCS") in the United States. PCS industry loss estimates are based on a survey of industry representatives such as insurers and emergency managers. Other indices or data sets used are the Carvill Hurricane Index, RMS WindX and Paradex, Swiss Re sigma, PERILS and Munich Re NatCatSERVICE. There are no dominant indices outside of the United States and this has delayed the adoption of ILWs in Europe and Asia. However, during 2010, the newly introduced PERILS index has been used on a number of European risk ILWs and catastrophe bonds and looks likely to become popular.

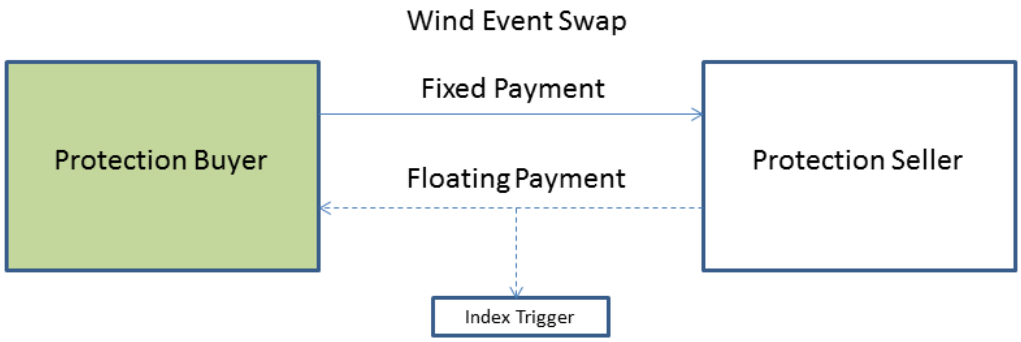
The reinsurance form (also referred to as the "indemnity" form) of ILWs are dual trigger instruments and require that the protection buyer also suffer a loss from the triggering event. The second trigger is usually quite low compared to the main trigger. The indemnity portion of the ILW allows ILWs to be classified as reinsurance as the protection buyer has an insurable interest in the event. Being classified as reinsurance is important to reduce solvency capital requirements for protection buyers subject to solvency rules (such as insurers). Since both triggers must be satisfied, the protection seller can still center its due diligence on the index trigger.

A typical ILW will have a 12 month term running from January 1 to December 31 (shorter terms are possible). The industry loss attachment point varies but anywhere from $10 billion upwards is common. The contract will also specify a limit and a small retention; the limit can be as little as $5 million. The premium is the product of the rate on line and the limit purchased. The contract will also have a reporting period of 36 months from the date of loss

which is the time period during which the protection buyer must prove that its losses have satisfied the indemnity trigger and the retention. Payment on the trigger is usually binary, that is, the entire limit amount is paid once the trigger is satisfied but it can also be structured to be pro rata, that is, a the payment is proportionate to the amount the loss exceeds the attachment point. ILWs are often collateralized and allow for reinstatement following an event. ILWs are not usually issued a credit rating though, for rated protection sellers, the need for collateral might be eliminated.

ILWs are quite quick and inexpensive to execute as they involve no structured finance vehicles, no due diligence (being index based), and relatively plain documentation. ILWs are also the most liquid ILS because the terms are standardized and pricing is transparent.

Derivative Form



Insurance derivatives are over-the-counter instruments that mimic credit default swaps and are sometimes referred to as event loss swaps. ISDA offers a standardized confirmation for US wind events and Swiss Re has a standardized natural catastrophe swap form for US wind and earthquake. The protection buyer will make a fixed payment to the seller and, as a floating payment, the seller pays the full notional value of the swap contract if industry-wide insurance losses exceed an agreed upon trigger value. A wind event swap uses a trigger based on industry losses as calculated by PCS where the losses are caused by a hurricane in a specified US region. As bilateral contracts, the precise terms of the swap can vary widely and may or may not be supported by collateral. Unlike reinsurance ILWs and exchanged traded ILWs, the market for these swaps is quite opaque and fragmented. A swap is sometimes used in connection with a transformer to allow non-insurers to participate in the ILW market.

Exchange Traded Form

A number of exchanges (EUREX, CME, IFEX) offer standardized futures contracts whose value is linked to a parametric or industry loss index. One example is the event-linked future ("ELF") offered by the Insurance Futures Exchange ("IFEX").

ELFs are contracts for difference that mirror ILWs for wind perils in various regions of the United States. There are five ELF contract specifications: US Tropical Wind, Florida Wind, US Gulf Coast Wind, US Eastern Seaboard Wind, and US North East Wind. The ELFs settle against an industry wind loss as estimated by PCS in defined locations. IFEX plans to introduce contracts to cover non-wind perils and certain Japanese and European risks.

The contracts are available for first, second, third and fourth events with triggers at $10bn, $15bn, $20bn, $25bn, $30bn, $40bn, $50bn, $60bn, $75bn and $100bn. The contracts are binary, meaning that the contract will pay out in whole for the first event that exceeds $10 billion industry loss. No payment will be made if two events together exceed $10 billion. The contracts run from January 1 to December 31 of each year and are valued at $100 multiplied by an index value (between 0 and 100). If the event trigger occurs, the index value goes to 100, the contract is paid out ($10,000) and the ELF is delisted. Similarly, if the contract expires without the event trigger occurring, the index value goes to 0 and no payment is made. ELFs also differ from ILWs from a cash flow perspective. ILWs require the payment of a premium to purchase the contract, ELFs require buyers and sellers to post maintenance margin at the time the contract is entered into. The maintenance margin amount varies depending on the time of the year and storm "threat level", *e.g.*, margin increases during storm season. As the index value changes, the buyer or seller will transfer a variation margin each day as the contract is marked to market. As the index value increases and the trigger is more likely to occur, the protection seller posts variation margin and the protection buyer has variation margin returned. The amount of margin required to be posted is limited on the sell side to the contract face value and on the buy side to the contract index value at the time of purchase, *i.e.*, the premium.

Insurance futures have had a spotted history because of illiquidity, lack of transparency, and margin requirements. ELFs have shown some promise as they are traded electronically, publicly quoted and have attracted some market makers (Swiss Re, Deutsche Bank). One of the main attractions of ELFs compared to ILWs is the reduction of counterparty credit risk and increased price transparency. However, at the time of writing, EUREX has traded very few contracts and IFEX has withdrawn many contracts that were not being actively traded.

Exchange traded ILWs can be used to hedge ILWs and cat bonds, hedge equities of catastrophe exposed issuers, take exposure to or hedge against wind risk, supplement reinsurance programs, and hedge catastrophe renewal price risk.

How ILWs are Used

ILWs can be used to reduce an insurer's exposure to peak losses from large catastrophe events or a collection of events thus controlling the tail of the aggregate loss distribution at a reasonable price. However, protection buyers need to select limits and triggers very carefully as index based products are subject to basis risk, that is, the protection buyer's loss and industry loss may not be exactly correlated. In addition, for dual trigger ILWs, there is a risk that the protection buyer will satisfy the indemnity trigger without hitting the industry trigger.

ILWs have generally been bought by the large national insurers and reinsurers but they are also useful to the regional insurers. The large insurers have generally been the first ones to utilize this market because they tend to have a more sophisticated view of risk and price within the reinsurance market. This product provides these large buyers another reinsurance option for spreading the risk from large events over a larger market capacity. In particular, ILSWs are used to supplement or fill gaps in traditional reinsurance programs.

ILWs can also be used by investors such as hedge funds to hedge portfolios of catastrophe bonds (particularly index based bonds) and to speculate on catastrophe risk. Where catastrophe pricing is high, investors may also sell ILW protection in the same way that they participate in sidecars and catastrophe bonds.

ILWs also perform a role as a bellwether for reinsurance pricing. Unlike traditional reinsurance programs that are bound on specific dates in advance of fall and spring storm seasons, an ILW can be purchased at any time, including the time when an event is imminent (known as "live cat") and immediately after an event has occurred but before losses are known (known as "dead cat"). This offers a snapshot of the market and allows (re)insurers to supplement their protection for a depleted program.

Features of ILWs

Transaction costs

The most important advantage of ILWs over traditional products and other ILS is substantially lower transaction costs. The main components of cost are underwriting costs and documentation costs.

The industry loss index is very transparent, and thus the underwriting process is simple to implement. There is no need to conduct due diligence on the protection buyer and there is no information asymmetry between insured and risk taker. In traditional reinsurance, the risk taker needs to price for this information gap and the premium charged increases the further the risk taker is from the ultimate insured. When the index is the only component to be underwritten, the information asymmetry premium can be eliminated.

ILWs have fairly standardized contract wordings and are not usually customized for individual transactions. Standardized contracts can be more easily traded in secondary markets and have easier claims settlement. Unlike cat bonds, there are no third party fees for trustees, rating agencies, swap counterparties, offering circulars, special purpose vehicles and associated legal costs. These factors also reduce the time taken to enter into new transactions.

Moral hazard

ILWs are unlikely to create moral hazard issues because payouts are based on an independent metric, rather than the insured's reported losses. For example, the use of an industry loss index

reduces moral hazard because a company cannot influence industry losses to any great extent, whereas it can influence its own losses.

Adverse selection

ILWs reduce adverse selection because payments are based on widely available information and there are few informational asymmetries to be exploited. Risks can be calculated more easily and priced more accurately, without depending on information provided by the insured.

Basis risk

Basis risk arises in ILWs when the protection buyer attempts to protect a risk exposure with a proxy, *i.e.*, an index trigger, which provides payment that does not perfectly match the potential loss. Therefore, ILWs only represent an effective hedge for the buyer if its portfolio highly matches the industry loss experience. For the most part, ILWs will appeal to reinsurers with highly diversified portfolios for retrocession purposes. As more granular indices become available, protection buyers will be able match their exposures to "off the shelf" indices.

Counterparty risk

Another important factor in ILWs is the counterparty risk. Some highly rated protection sellers are able to offer ILWs without collateral but ILWs are usually collateralized. Exchange traded ILWs handle credit risk through margin requirements and the clearing house guarantee. Derivative instruments use cash, securities, letters of credit, *etc.*, held by a third party custodian to provide collateral. ISDA has developed widely used credit support annexes for over-the-counter derivatives. The level of counterparty risk is not only driven by the parties' risk aversion, but is also prompted by solvency capital requirements and accounting rules. Regulated insurers are required to seek collateral, for example, from non-US reinsurers to receive solvency relief.

Capacity and liquidity risks

Capacity risk occurs when investors withdraw capital from the market. For catastrophe risks, this occurs after a large catastrophe that causes losses for investors. Essentially this means that no new capital is available to support new underwriting years. If capacity is scarce enough, insurers may be force to look for alternative sources of financing or shrink coverage. Capacity limits will also affect liquidity for ILWs and other instruments as the secondary market may dry up. For example, investors in ILWs may not be able to find another party to assume the contract or enter into an offsetting contract. On the opposite end of the spectrum, as ILS become more popular as a diversifying asset, the amount of catastrophe exposure available can also dry up. ILWs, however, tend to be more liquid than traditional instruments on account of the standardization of documentation and simplified wordings.

Industry loss index and data quality

The most frequently used reference index for insured catastrophic events are those provided by PCS in the United States. This is an industry loss index, that is, an estimate of the loss suffered by all insurers in connection with a loss event. By definition, ILWs are instruments that only use

industry loss as a trigger. There are, however, a variety of other indices such as modeled loss, parametric, pure parametric and modeled industry triggers. A purely parametric trigger uses a physical event parameter to define a trigger, *e.g.*, an earthquake of 7.0 occurring within 20 miles of San Francisco. A parametric index refines this concept by applying weighting and more detailed measurements, *e.g.*, the earthquake would be measured at various regional weather stations around San Francisco and each station has its own weighting and target magnitude. A modeled loss index calculates industry loss by running event parameters through a modeling firm's database of industry exposures. A classic industry loss index does not use parametric data but instead uses insurers' own estimates of losses as reported by surveys.

Outside the US, industry loss is estimated based on data provided by Swiss Re's sigma service, Munich Re's NatCatSERVICE and PERILS. Neither sigma nor NatCatSERVICE has been popular because the data is assembled from various proprietary sources in a fashion that is not transparent to investors and there are potential conflicts of interest. As a result, PERILS has been developed by a group of industry participants and is intended to be independent and transparent and assembles data for Europe in a similar manner to PCS.

There can be issues with index quality related to data availability, timeliness and frequency. Metrics can vary country by country and the format for reporting data is not always consistent. There is also demand for more granular indices to reduce basis risk for sponsors.

Regulation and Accounting

Regulatory and accounting rules influence whether and how widely ILS are used. Current regulatory and accounting rules create some ambiguities in the treatment of instruments that transfer insurance risk to the capital markets, but do not pose major impediments to the risk transfer market. Some transactions are treated as reinsurance, while others are treated as financial instruments. Dual trigger ILWs are treated as reinsurance since they use also an indemnity trigger. Single trigger ILWs without an indemnity trigger are treated as financial derivatives.

Under International Financial Reporting Standards ("IFRS") and US GAAP, the treatment of risk transfer instruments depends on whether the instrument is classified as a reinsurance contract. Under IFRS, reinsurance accounting applies only to indemnity-based instruments. Under US GAAP, contracts based on a dual trigger are treated as reinsurance. Accounting for reinsurance is more favorable than derivatives as derivatives have to be measured at fair value and marked to market while reinsurance is considered in underwriting results. The regulatory treatment is similar. For example, ILWs receive reinsurance treatment by the National Association of Insurance Commissioners.

In the EU, under Solvency I, instruments with an indemnity trigger are treated as reinsurance. In many cases, the risk transfer instrument will be disregarded with respect to solvency capital as long as no gain is realized, that is, there are no claims paid.

Future regulatory developments could lead to more nuanced treatment of risk transfer and thus have a favorable impact on the use of ILS. The proposed Solvency II regulatory framework is expected to provide solvency capital relief for all risk management and risk mitigation tools with material economic risk transfer. However, the exact details of the new rules remain open to discussion, and it is therefore too early to draw conclusions about the potential impact of Solvency II on the use of ILWs in insurance.

In the US, the Dodd-Frank Act introduces a new regulatory framework for derivatives and attempts to increase transparency while reducing counterparty risk by forcing standardized derivatives to be settled through a clearing system and become subject to new margin and registration rules.

Any instrument coming within the definition of "swap" is regulated under the Dodd-Frank Act. The definition is exceptionally broad and encompasses most forms of ILS as well as many conventional insurance products. However, the SEC/CFTC has proposed rules and interpretive guidance to make it clear that certain insurance products would not be considered to be swaps. To qualify under the proposed rules and interpretive guidance, both the contract and the entity providing the contract will need to meet certain criteria. An insurance contract is not considered to be a swap where each of the following is satisfied:

- the beneficiary of the contract must have an insurable interest in the subject matter of the contract and thereby carry the risk of loss on that interest continuously throughout the duration of the contract;
- a loss must occur and be proved, and any payment or indemnification must be limited to the value of the insurable interest;
- the contract is not traded, separately from the insured interest, on an organized market or over-the-counter; and
- with respect to financial guaranty insurance only, in the event of payment default or insolvency of the obligor, any acceleration of payments under the policy is at the sole discretion of the insurer.

In addition, the insurance contract must be issued by a regulated insurer and regulated as insurance or, in the case of reinsurance, offered to a regulated insurer, reinsuring a qualified reinsurance policy and for an amount that does not exceed claims paid by the cedant. Under the interpretive guidance, certain types of products that do not meet the proposed criteria, if offered by a regulated insurance company, could still be considered insurance, rather than swaps or security-based swaps. Such products include surety bonds, life insurance, health insurance, long-term care insurance, title insurance, property and casualty insurance, and certain annuity products.

ILWs in the derivative form would not qualify as "insurance" under these rules as those instruments lack an insurable interest. However, since these instruments are currently traded as derivatives, it comes as no surprise that the instruments will be regulated as derivatives. Dual trigger ILWs will qualify as insurance under the rules provided that the loss payment not exceed the insurable interest. This can be achieved by requiring that the ultimate net loss suffered by the insured in the covered event always exceed the limit of protection purchased under the ILW.

Conclusion

ILWs share many of the positive characteristics of other ILS, *e.g.*, low correlation, pricing transparency but they have simpler due diligence requirements and are faster and less expensive to execute. As an exchange traded instrument, ILWs are only ILS product truly available to all capital market participants. This accessibility may ultimately help ILWs to eclipse its better known counterpart, the catastrophe bond.

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