Reinsurance and Catastrophe Bonds

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Agenda

Reinsurance overview:

- Introduction
- Purposes
- Different types

How catastrophe bonds fit in:

- Typical structure
- Common trigger types
- Sponsors, investors, issuers
- Pros and cons

Intro to reinsurance

- Reinsurance is insurance for insurance companies.
- Reinsurance helps ensure that insurance companies remain solvent after large catastrophes or losses.
- Insurance companies pay a premium to cede part of the risk when they purchase a reinsurance policy.
- In the event of a loss, reinsurers pay an already agreed upon share of the primary insurance company's claims.
- Purpose of reinsurance: spread the risk to reduce exposure to loss.
- Risk travels from policy holder to primary insurer to reinsurer

Purposes of reinsurance

- Spreads risk to also spread loss
  - In the event of a large hurricane, not all the losses are concentrated within a few insurance companies.
- Allows insurer to increase risk appetite to insure larger risks
  - More risks are insured.
- Diversifies insurer’s risk
- Stabilizes insurer’s profits and losses (income smoothing), important for growing

Reinsurance methods

- Treaty: reinsurer covers a share of insurer’s policies.
- Facultative: each insurance policy gets its own reinsurance.
  - Purchased for unique or large risks, usually on top of treaty reinsurance.
  - Higher underwriting costs, more accurate pricing.

Reinsurance structures

- Proportional: reinsurer takes a proportion of the insurer's premiums and covers that proportion of any potential claims
  - Reinsurer may also have to pay a ceding commission back to insurer.
- Non-proportional: insurance company retains $X amount of loss, and if a claim is greater than $X, the reinsurer covers that difference.
  - Similar to a deductible.

How do catastrophe bonds fit in?

- Similar to reinsurance, catastrophe bonds are another way to spread risk.
- Issued by both insurers and reinsurers to transfer risk to investors.
- They are meant to alleviate large-scale payouts in the event of major catastrophes.
  - Ex: In 2017, global insured losses were $144B from Hurricanes HIM. As a result, Munich Re, the world's largest reinsurer cut 900 jobs.
- Cat bonds are examples of insurance-linked securities, so their values are determined by insured loss events.

Typical structure of catastrophe bonds

- Insurance or reinsurance companies, called sponsors, issue them through investment banks.
- If the impairment isn’t triggered, issuer pays a coupon to investors.
- If the impairment is triggered, the principal is forgiven and used by the issuer to pay its claims.
  - The trigger type depends on the bond.
- Cat bonds usually have maturities of less than five years.
- These bonds usually provide a return of about 5%.

Common trigger types

- Indemnity: cat bond is triggered when sponsor’s losses exceed some specified amount (very similar to reinsurance).
- Industry loss index: cat bond is triggered when the insurance/reinsurance industry collective loss from a single catastrophe exceeds some specified amount
- Parametric: cat bond is triggered when the severity of the catastrophe exceeds some threshold.
  - Ex: hurricane cat bond triggered when wind speeds exceed X mph
- Modelled loss: cat bond is triggered when the event parameters of the catastrophe (wind speed, temperature, rainfall) entered into a catastrophe model result in a modeled loss greater than some threshold.

Sponsors, investors, issuers

- Sponsors: property & casualty insurers, property & casualty reinsurers, corporations, government agencies hoping to find new ways of raising capital.
- Investors: mostly institutional investors like hedge funds, investment advisors, pension funds looking to diversify risks.
- Issuers: investment banks and special purpose entities of insurance and reinsurance companies.

Pros and cons to cat bonds

Pros:

- Cat bonds (and other ILSes) are not correlated to other financial instruments. Their values are determined by occurrences of natural disasters.
- They allow insurer to increase risk appetite to insure larger risks
- Cat bonds pay high interest rates.
- Cat bonds diversify an investor’s portfolio.

Cons:

- Generally pretty risky (rated BB) since they take the sponsor’s risk and transfer it to the investor.

Questions?