

SUSTAINABLE FINANCE MARKET UPDATE SERIES

SUSTAINABLE FINANCE ACROSS INSURANCE PROVIDERS

JULY 2021



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CONVENED BY THE UN THE FC4S NETWORK IS A GROWING COLLECTIVE OF THE WORLD'S FINANCIAL CENTRES WORKING TOGETHER TO REALISE THE PARIS AGREEMENT AND THE UN SUSTAINABLE DEVELOPMENT GOALS.

GROWN FROM 12 TO

36

MEMBERS IN
2 YEARS

REPRESENTING

\$83.8

TRILLION USD
EQUITY MARKET
CAPITALISATION

MANAGING

82%

GLOBAL EQUITY
MARKET

REGIONAL NODES

3

AFRICA, ASIA AND
EUROPE

CO-CHAIRS

2

TORONTO AND
CASABLANCA

MEMBERS
ACROSS

5

CONTINENTS



SUSTAINABLE FINANCE MARKET UPDATE SERIES

An output of the UN-convened Financial Centres for Sustainability (FC4S)

35 member Network, this work aims to provide:

- » A review of main market developments to mobilize green and sustainable finance, and
- » Examples of supporting National and international regulatory developments

MOTIVATION

- Sustainable finance is one of the fastest growing development fields in finance and is quickly becoming mainstream
- Sustainable green factors are increasingly gaining recognition as being materially relevant for financial products' performance.

SCOPE

ANALYZED MARKET SEGMENTS:

- Institutional investors
- Banking
- Capital Markets
- Insurance

AREAS OF RESEARCH:

- Capital mobilization
- Reporting and disclosure
- Risk management

MAIN INPUTS

THIS WORK INCLUDES INSIGHTS FROM:

- Financial Centres for Sustainability (FC4S) analysis
- Experts from international organizations, and
- Group consultations and workshops with relevant stakeholders

SUSTAINABLE FINANCE MARKET UPDATE SERIES

SERIES STRUCTURE





SUSTAINABLE FINANCE ACROSS INSURANCE PROVIDERS

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CONTENTS

1. Highlights

2. Market development

- Reporting and disclosure
- Risk management
- Capital mobilization

3. Regulatory developments

1 HIGHLIGHTS



- The insurance industry is one of the largest industries in the world with more than **US\$ 6 trillion premium volume and US\$ 36 trillion in AuM** in 2020. As such, insurers hold a significant portion of global economic assets and liabilities on their balance sheets.
- Insurers are advancing in disclosing sustainability information according to global standards, such as SASB and GRI, and have also been increasingly applying the TCFD recommendations.
- There is a growing concern about risks that can become **uninsurable** if the current climate crisis continues to aggravate. More than half of the world's GDP is moderately or highly dependent on nature.
- Scenario analysis has **emerged** as a key method to understand climate risk and narrow the protection gap. However, its application in the insurance industry is still in early stages.

- Insurance can contribute to promote climate adaptation, restoration and the preservation of biodiversity, by enabling reliable disaster responses and improving preparedness, by increasing adaptive capacity.
- Innovative parametric insurance products allow for the preservation of valuable ecosystems.
- Insurance-Linked Securities (ILS) allow insurers to offload in capital markets the risk of the climate related insurance policies. Although still small (**US\$ 105 billion**), annual issuance of ILS has more than **doubled its size** since 2015.
- Nearly 20 insurers have joined the **Net Zero Asset Owner Alliance** and have committed to transitioning their investment portfolios to net-zero GHG emissions by 2050.
- Most recent regulatory requirements mainly focus on disclosure for the insurance industry and adoption of climate related risk methodologies.



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MARKET DEVELOPMENT: REPORTING AND DISCLOSURE



INSURERS HAVE PROGRESSED IN SUSTAINABILITY REPORTING BUT ARE STILL IN THE EARLY STAGES

- According to the **EY Sustainable Finance Index**, which ranks financial services firms across the globe on key sustainability and disclosure metrics, the global average of this index was 5.8 for the insurance industry in 2020/21 (compared to a global average of 4.2 for banking).
- The use of sustainability reporting guidelines and standards is increasingly widespread. GRI and SASB remain the most commonly used **ESG reporting** standard or framework. For instance, more than 30 insurance companies, representing approximately US\$6 trillion AuM, report using **SASB** ESG, industry specific sustainability standards.
- The **TCFD 2020 Status Report** assessed reporting practices of 141 insurance companies ranging from US\$ 1 billion to US\$ 1.1 trillion in assets. It shows that although insurers' disclosure have increased along all 11 recommendations, **on average the percentage of aligned disclosed information is 27%**.
- A **Shared Action** study of 70 of the world's largest insurers found that, as of the end of 2019:
 - 56% had not begun reporting in line with the TCFD recommendations.
 - 50% of assessed insurers were official supporters of the TCFD.
 - **However, a third did not actually report in line with the framework.** Only 10% of assessed insurers have a developed approach to the TCFD, with more comprehensive disclosure and implementation of the recommendations.
- A **SIF** Survey (2019) of 1,170 insurers within 15 jurisdictions revealed that **73% of assessed insurers expect that climate change will affect their business**. The most cited effects include significant increases in claims, impacts on investment portfolios, new opportunities and changing market dynamics.



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MARKET DEVELOPMENT: REPORTING AND DISCLOSURE



THE TCFD REPORTING FRAMEWORK IN THE INSURANCE INDUSTRY

- The TCFD has been widely accepted as **the gold standard** among insurance companies and regulators. Insurers supporting the **TCFD** framework have increased **from 8 in 2017 to 77 in 2021**, coming primarily from Europe (47%) and Asia (38%) followed by North America (13%) and others (2%).
- The four TCFD core elements are applicable to both underwriting and asset management activities of insurance industries.
- Insurers and investors have called on regulators to incorporate them into mandatory reporting standards.
 - The UK, Switzerland, Hong Kong and New Zealand have announced mandatory TCFD reporting.
 - 2020 was the first year of **mandatory TCFD-based reporting** for investment signatories of the Principles for Responsible Investment (PRI).
 - In June 2021, the G7 **supported** mandatory TCFD-aligned financial disclosures.



FIGURE 1
CORE ELEMENTS OF RECOMMENDED CLIMATE-RELATED FINANCIAL DISCLOSURES



Governance

The organization's governance around climate-related risks and opportunities

Strategy

The actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning

Risk Management

The processes used by the organization to identify, assess, and manage climate-related risks

Metrics and Targets

The metrics and targets used to assess and manage relevant climate-related risks and opportunities

Source: *Recommendations of the Task Force on Climate-related Financial Disclosures* (2017), TCFD.

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MARKET DEVELOPMENT: REPORTING AND DISCLOSURE



PRINCIPLES FOR SUSTAINABLE INSURANCE

- The UNEP FI **PSI** (2012) are a voluntary and aspirational framework for the global insurance industry to address ESG risks and opportunities. To date, **110 insurance companies** have joined the PSI and disclose annually their progress in implementing the Principles.
- As of August 2020, participants collectively **underwrite** more than 25% of global industry premiums and hold around \$US 14 trillion in AuM.
- In June 2020, UNEP FI issued the first global **guide** to manage ESG issues in risk assessment and insurance underwriting. Its initial focus was on **non-life insurance**.
- Together with 22 leading insurers and reinsurers, PSI announced the **“TCFD Insurance Pilot Projects”** to develop homogenous analytical approaches used to identify, assess and disclose climate change-related risks and opportunities in insurance portfolios. As a result, it has published a **progress update** and a **final report** that discusses key findings across different lines of insurance business.



PRINCIPLE 1

We will embed in our decision-making ESG issues relevant to our insurance business.

PRINCIPLE 2

We will work together with our clients and business partners to raise awareness of ESG issues, manage risk and develop solutions.

PRINCIPLE 3

We will work together with governments, regulators and other key stakeholders to promote widespread action across society on ESG issues.

PRINCIPLE 4

We will demonstrate accountability and transparency in regularly disclosing publicly our progress in implementing the Principles.



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MARKET DEVELOPMENT: REPORTING AND DISCLOSURE



CLIMATEWISE PRINCIPLES

- **ClimateWise** is a global industry network established in 2007 that comprises **33 leading global organizations** from across the insurance industry. It focuses on helping to align its members' expertise to respond to the opportunities and challenges presented by climate change.
- The **ClimateWise Principles**, aligned with TCFD recommendations since 2019, provide guidance and a reporting framework through which ClimateWise members are committed to integrate climate considerations into business decision-making.
- All ClimateWise members are required to report annually on their individual actions against this framework, allowing members to benchmark their progress against their peers.



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MARKET DEVELOPMENT: RISK MANAGEMENT



CLIMATE CHANGE IS TRANSFORMING THE INSURANCE RISK LANDSCAPE

- Munich Re revealed that natural catastrophes around the world resulted in **US\$ 210 billion** in damage in 2020 (26% above the losses of 2019) while Aon estimated insured losses in 2020 reached US\$97 billion, 40% above the average for this century.
- The World Economic Forum (WEF) 2020 Global Risk Report identified **Extreme Weather** as the **top global risks**. Also, it estimated that more than half of the world's GDP (US\$ 44 trillion) of economic value generation in 2020 was moderately or highly dependent on nature.
- The International Association of Insurance Supervisors (IAIS) 2018 Issues Paper on Climate Change Risks to the Insurance Sector raises awareness among insurers and supervisors of the challenges presented by climate change, including physical, transition and litigation risks, which affect the value of insurers' assets and liabilities as well as insurers' business plans and strategic objectives.

Physical risks, arising from increased damage and losses associated with both climate trends (i.e. changing weather patterns, sea level rise) and events (i.e. natural disasters, extreme weather).

A rise in the mortality rate from climate events or an increase in longevity due to more moderate temperature affects life insurers.

Transition risks, arising from shifts associated with the transition to a low-carbon economy, which may affect the value of assets or the costs of doing business.

Decrease in the value of assets affected by ecological transition resulting in "stranded assets".

Liability risks, including the risk of climate-related claims under liability policies, as well as direct claims against insurers for failing to manage climate risks.

Claims of negligence that result in bodily injury, property damage, and personal and advertising injury.

Source: Issues Paper on Climate Change Risks to the Insurance Sector (2018), IAIS and SIF.

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MARKET DEVELOPMENT: RISK MANAGEMENT



PHYSICAL AND TRANSITION RISKS ARE A SOURCE OF FINANCIAL RISK, WHICH MAY TRANSLATE INTO THE FOLLOWING PRUDENTIAL RISKS:

Prudential risks	Potential impact from climate change
Underwriting risk	The frequency, severity and concentration of high impact natural catastrophes is leading to increases in insurance claims.
Investment risk	The value of an insurer's investment portfolio may be affected by physical or transition risks.
Liquidity risk	A lack of reliable and comparable information on climate-sensitive exposures could create uncertainty and cause procyclical market dynamics, including fire sales of carbon-intensive assets, and hence reduce liquidity of these markets.
Reputational risk	Insurers may attract negative publicity by underwriting, or investing in, carbon intensive sectors and by reducing climate-related insurance coverage or making this type of insurance less affordable.
Strategic risk	Physical or transition-related climate events, trends and uncertainty about future scenarios may present strategic challenges to insurers, which could inhibit or prevent an insurer from achieving its strategic objectives.

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MARKET DEVELOPMENT: RISK MANAGEMENT



SCENARIO ANALYSIS IS RELEVANT TO UNDERSTAND CLIMATE RISKS AND NARROW THE PROTECTION GAP

- The **BIS' 2019 review** of climate risks assessment in the insurance sector found that *“risk quantification techniques and models that explicitly cover climate risks are most advanced for physical risks but are still at an early stage for transition and liability risks even in the most developed jurisdictions”*.
- TCFD recommends that firms should describe the resilience of firms' strategy taking into consideration different climate-related scenarios. The **2020 TCFD Status Report** found that only 8% described the resilience of their business strategy under different climate-related scenarios.
- In May 2021, the IAIS **highlighted** scenario analysis as a key method for gathering information, integrating climate-related risks in internal control functions and considering climate-related risks in underwriting and investment risk assessment.
- A wide range of NGOs and research entities are developing open-source materials to support insurers in undertaking scenario analysis.
- The **NGFS published in May 2021 the second set of climate scenarios and a dedicated website**, both aimed at fostering the integration of climate-related risks into the work of central banks and supervisors, and beyond.
- The **PRI has published** a list of publicly available climate scenario tools in 2019 that facilitate the implementation of the TCFD recommendations.



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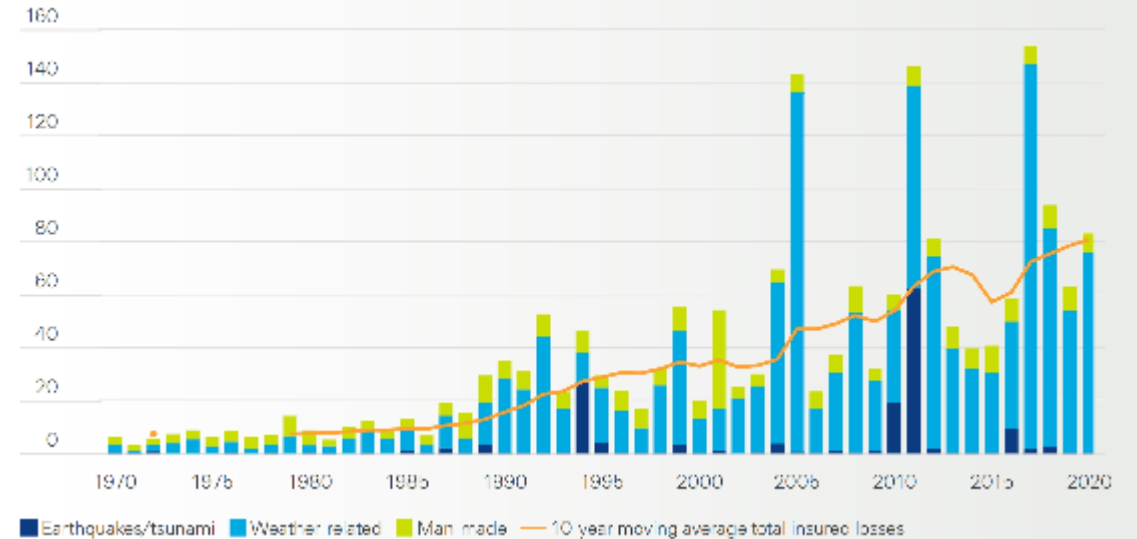
MARKET DEVELOPMENT: RISK MANAGEMENT



THE INSURANCE SECTOR FACES POTENTIALLY HIGHER CLAIMS DUE TO MORE FREQUENT AND COSTLY NATURAL CATASTROPHES

- The Chief Risk Officers Forum report (2020) identified extreme weather, climate tipping points and transition risk as high-impact risks for the insurance sector over a five-year outlook.
- Swiss Re estimated that natural catastrophes caused in 2020 US\$ 76 billion of global insured losses, up 40% from 2019.
- A 2020 Boston Consulting Group publication explains that the risk of assets becoming stranded due to the transition to a low carbon economy could impact the financial performance of insurance companies.

FIGURE 2
INSURED LOSSES, IN US\$ BILLIONS



Source: Swiss Re News Release (2020).

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MARKET DEVELOPMENT: RISK MANAGEMENT



THE INSURANCE SECTOR FACES POTENTIALLY HIGHER CLAIMS DUE TO MORE FREQUENT AND COSTLY NATURAL CATASTROPHES

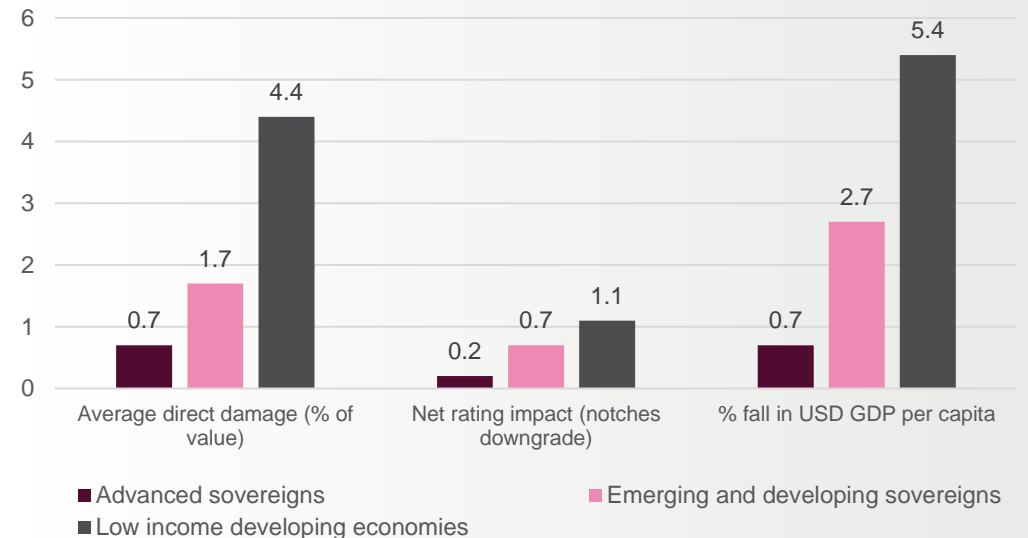
- There is an increasing concern about risks that can become **uninsurable** if the current climate crisis continues to aggravate. For example:

- In 2019, the state of California had to **temporarily ban insurers** from cancelling policies on approximately 800,000 homes in high-risk wildfires areas.
- In Venice, Italy, insurers are **no longer providing flood insurance**.

- Analysts** explain that un-insurability of properties diminishes their value because it makes it more difficult for their owners to rebuild them, sell them, or even be granted loans after a disaster.

- Many of the countries with the **lowest levels of insurance** are among the most exposed to climate-related risks.

FIGURE 3
AVERAGE IMPACT OF NATURAL CATASTROPHES BY INCOME GROUP IN 2015



Source: **S&P 2015 Storm Alert Report** (2015).

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MARKET DEVELOPMENT: RISK MANAGEMENT



THERE IS A LOW INSURANCE PENETRATION IN EMERGING AND LESS DEVELOPED ECONOMIES

- In 2020, while almost half of all economic losses from disasters were covered by insurance in high-income countries. **Less than 5%** losses were covered in less developed countries.
- Emerging markets **accounted** in 2016 only about 16% of the global insurance market, in contrast with a **share** of more than 50% of global GDP.
- At the end of 2018, the average insurance penetration rate (total insurance premiums as a percentage of GDP) in **developed nations is twice as high as that of emerging economies**. Bangladesh, India, Vietnam, Philippines, Indonesia, Egypt and Nigeria, for instance, have an **insurance penetration rate** of less than 1%.

FIGURE 4: INSURANCE PENETRATION IN DEVELOPED MARKETS

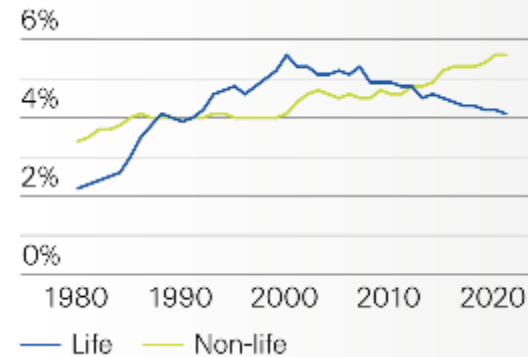
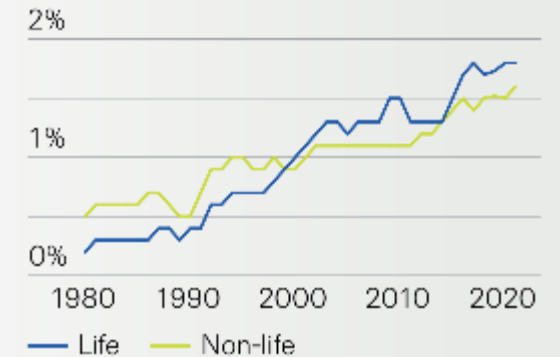


FIGURE 5: INSURANCE PENETRATION IN EMERGING MARKETS



Insurance penetration rates are defined as written premiums as a percentage of GDP.

Source: *Swiss Re Sigma Extra 2020 Report* (2020).

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MARKET DEVELOPMENT: RISK MANAGEMENT



THE INSURANCE INDUSTRY CAN PLAY A KEY ROLE IN PROMOTING CLIMATE ADAPTATION AND IN INCREASING RESILIENCE TO CATASTROPHES

● According to a 2018 European Commission Report and a 2019 Insurance for Climate Adaptation Report, insurance-related mechanisms can increase society's resilience in several ways:

1. Insurance **can provide financial compensation for large disaster losses** so that those affected and damaged natural capital can recover faster.
2. Insurance companies **can play a role in assessing, providing information about, and signaling environmental risks** (rewarding individual risk-reduction behaviors by reducing policy premiums) so that those affected by them can better understand them.
3. Insurance firms, through price signaling or resilience requirements, **can generate incentives or tighten pre-conditions to reduce risk**. Increased premiums or even the unwillingness to insure assets can motivate firms and authorities to implement risk reduction measures which are beneficial to insurers and insured parties.

● The Insurance Development Forum (IDF) has called for an international collaboration to spread capabilities in disaster risk understanding. In its latest white paper, "The Development Impact of Risk Analytics", IDF assesses the powerful contribution of risk quantification in the context of the UN SDGs and explains how the use of open risk analytics can overcome barriers to access, while increasing confidence in the analysis.

● Insurance needs to be adequately spread to relevant sections of society in order to increase resilience to climate change. A higher insurance penetration is critical for a society's ability to recover post disaster.

● Lack of enforcement of environmental laws could reduce potential compensation for damages caused to third parties. This in turn would diminish incentives to acquire liability insurance and could generate significant risk to society. Examples include tailing dams collapses of mining companies.



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MARKET DEVELOPMENT: RISK MANAGEMENT



THE INSURANCE INDUSTRY CAN CONTRIBUTE TO CLIMATE RESTORATION AND THE PRESERVATION OF BIODIVERSITY

- **Coral reef and beach insurance** can be an effective protection measure. Coral reefs globally provide **US\$ 36 billion a year** in economic value through tourism and reduce **reduce** 97% of wave energy and significantly reduce property damage during storms. Without reefs, annual expected damages from flooding **would more than double** and costs from frequent storms would triple.
- **Forest restoration** resilient bonds have been issued in **California** to finance restoration through ecological forestry. Savings from fires risk reduction and the protection of the watershed help service the bond.
- The Insurance Bureau of Canada has proposed that cities with high **flooding risks** acquire **parametric or indemnity insurance contracts** for their public infrastructure and receive payouts if floods occur. Meanwhile, a trust fund would manage and fund flood-resilience projects.
- **Mangrove** forests play a critically important role in coastal protection and in general, by lowering flood risk, minimizing erosion and storing large amounts of carbon. Mangroves protect more than 18 million people and **reduce the flood damage to coastal assets by more than US\$ 82 billion a year**.
- **AXA's 2020 Report** describes insurance products available that can be tailored to meet the specific needs of mangroves with initial payouts made quickly through parametric covers and assessed payouts made through indemnity cover at a later stage.
- The Global Innovation Lab for Climate Finance has created the **Restoration Insurance Service Company (RISCO)**. This social enterprise aims at preserving and restoring mangrove forests by generating insurance-related revenue through property damage risk reduction and blue carbon revenue through the sale of credits.



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MARKET DEVELOPMENT: CAPITAL MOBILIZATION



NATURAL DISASTERS AND CLIMATE CHANGE WILL INCREASE DEMAND FOR INSURANCE PRODUCTS

- The insurance industry is one of the largest industries in the world with more than **US\$ 6 trillion premium volume and US\$ 36 trillion in AuM** in 2020. As such, insurers hold a significant portion of global economic assets and liabilities on their balance sheets.
- According to **McKinsey's report**, the global Property and Casualty insurance industry generated US\$ 1.6 trillion in premiums in 2018.
- **McKinsey also explains** that aggregation risk, the risk of multiple claims filed in connection to a single event, is likely to increase as climate-related losses spread across different types of coverage (flood, property damage, and business interruption) and as the consequences of climate change start to materialize.
- Insurance products for climate-related risks can be classified in two types:
 - **Indemnity insurance** compensates the insured for the loss or damage of a physical asset. The insured value is calculated based on the market and reconstruction value of the asset, while the insurance premiums are based on the cost of repairing the asset and the likelihood of damages. This type of insurance is used for events with **low severity but high frequency**, and the payout of claims can involve a lengthy due diligence process.
 - **Parametric insurance** offers coverage to respond to extreme weather events and natural catastrophes. The insurance payments are triggered by a set of parameters of a **specific type and severity predetermined** in the contract. The parameters could refer to wind speed or rainfall volume over defined timeframes and in specific locations.



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MARKET DEVELOPMENT: CAPITAL MOBILIZATION

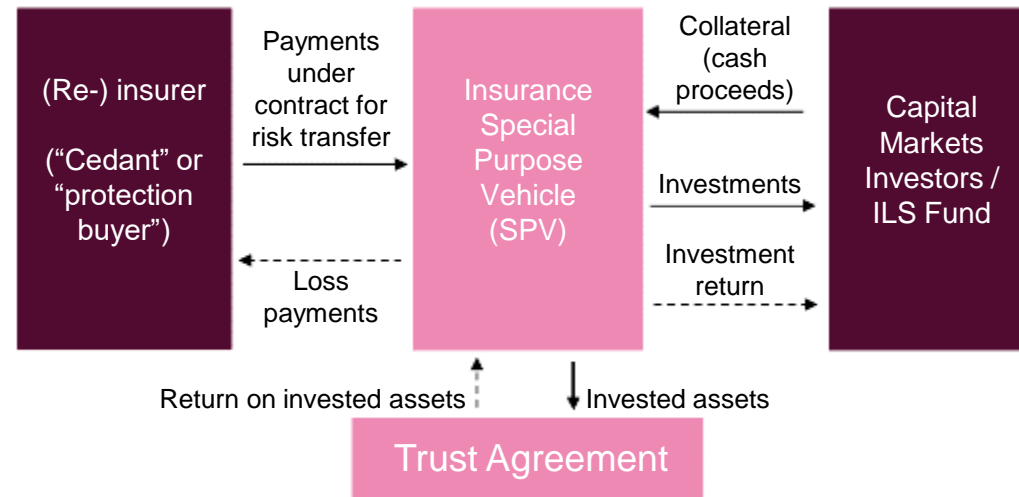


INSURANCE-LINKED SECURITIES (ILS)



- Insurance-Linked Securities (**ILS**) are vehicles for insurance companies to offload in capital markets the risk of the insurance policies they have underwritten.
- An ILS deal typically involves a (re)insurance firm (the 'cedant') transferring risks to an insurance special purpose vehicle (SPV). The vehicle issues securities to investors to raise capital to cover the insurance risk it has taken on, and investors receive a return for putting their capital at risk.
- The **UK HM Treasury Consultation** explains that ILS deals typically include arrangements for the safe holding of capital as collateral to meet obligations to the (re)insurance firm. It is common to include a trustee that is responsible for holding and investing the collateral, and for ensuring that any payments to the cedant or investors are made in line with the requirements of the contract for risk transfer.

FIGURE 6: **STRUCTURE OF AN ILS DEAL**



Source: **UK HM Treasury Consultation** (2016).

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MARKET DEVELOPMENT: CAPITAL MOBILIZATION



INSURANCE-LINKED SECURITIES (ILS)

- For investors, **ILS have offered attractive returns** and, as their performance is uncorrelated with the economic cycle, they help diversify investment portfolios.
- As of June 2021, the total AuM of the ILS market is estimated at around **US\$ 105 billion, of which around one third is comprised by CAT bonds. The other two-thirds** consist of non-tradable, OTC contracts.
- The share of ILS of the total reinsurance market **amounts** about 15%–20% of available reinsurance capacity.
- Among the **ILS** there are:
 - **Catastrophe (CAT) Bonds**, is the most common type of ILS. They transfer catastrophe risk to capital markets. Mexico's US\$ 160 million CAT Bond **issuance** in 2006 ("Cat Mex") was the world's first parametric CAT Bond issued by a sovereign.
 - **Resilience bonds** leverage upfront investments in resilience to reduce insurance premiums. Projected cost savings between the resilient and business as usual (BAU) scenarios are used to reduce the cost of insurance premiums. The savings are then securitized into a resilience bond to provide capital for the identified resilience investments.
 - **Industry Loss Warranties**, which are private, customizable reinsurance contracts through which a (re)insurance company can reduce or hedge risk exposure. The payout is based on industry wide losses rather than the company's specific experience.
 - **Collateralized Reinsurance** allow investors to take on the role of a reinsurance company. They are private, customizable reinsurance contracts that insurance companies use to reinsure losses related to company specific claims (indemnity triggers).
 - **Quota Shares/Reinsurance Sidecars** allow investors to participate side-by-side with the reinsurer and share in the profit or losses of its book of business. These structures gained popularity following catastrophic events because it allowed the (re)insurance industry to recapitalize itself quickly.



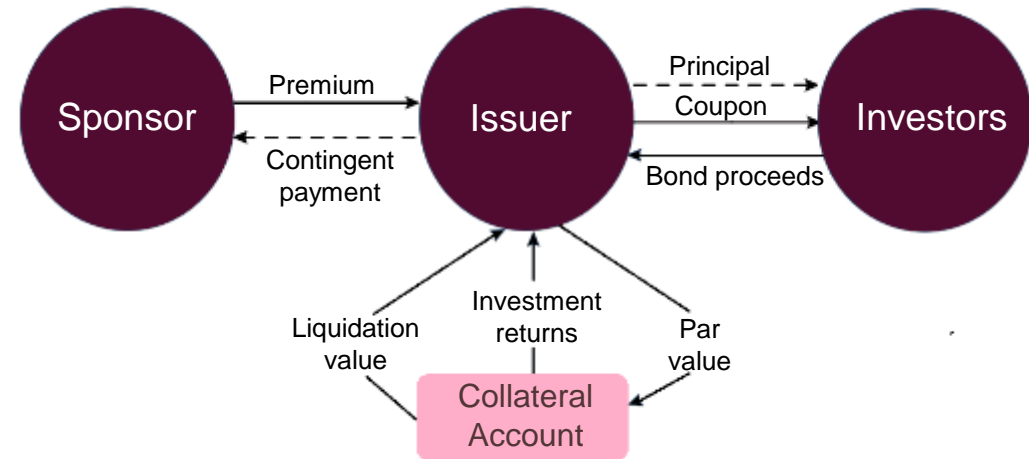
2 MARKET DEVELOPMENT: CAPITAL MOBILIZATION



CATASTROPHE (CAT) BONDS

- CAT bonds are ILS designed to transfer catastrophe risk to capital markets. If the catastrophic event occurs, sparking a payout, the obligation of the debtor to pay interest and return the principal is either deferred or waived.
- The party buying catastrophe insurance, the CAT bond sponsors, make premium payments to the bond issuer in exchange for a payout if a disaster strikes.
- CAT bonds are usually short to medium-term, high-yield instruments with low turnover and are issued mostly by (re)insurance companies.
- A CAT bond transaction is normally structured by an **issuance group**, which structure, underwrite, and market the instruments, and a **risk modeling firm** to assess the downside risk to investors. Proceeds from the bond sales are deposited into a collateral account, where the funds are invested in low-risk securities.
- There is a variety of transparent trigger mechanisms to determine whether a natural catastrophe qualifies for coverage.

FIGURE 7: STRUCTURE OF A CAT BOND DEAL



Source: *REbound Report* (2015).

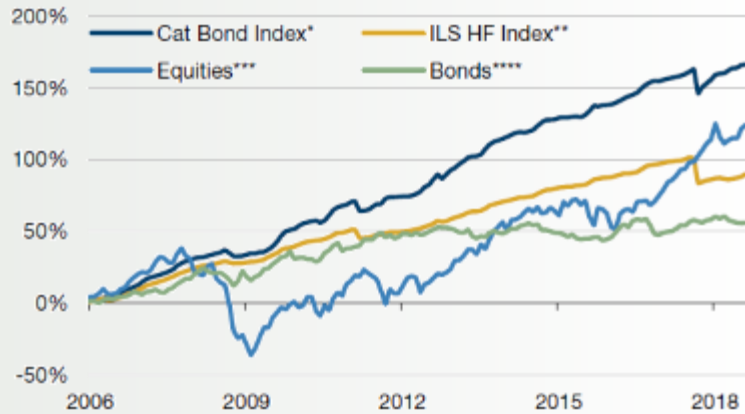
2 MARKET DEVELOPMENT: CAPITAL MOBILIZATION



THE ILS MARKET IS STILL SMALL

- As of April 2021, outstanding ILS (including CAT bonds) **totaled** US\$ 48 billion.
- Property protection CAT bonds represented 67% of ILS issuance in 2020.

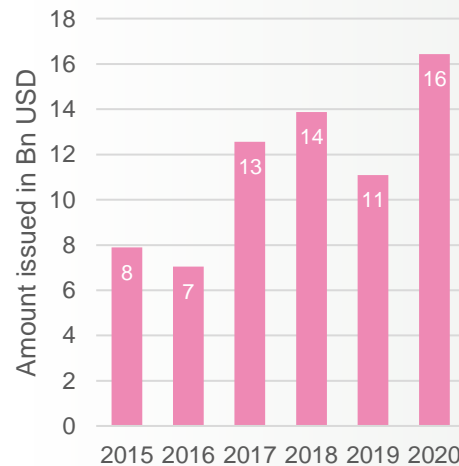
FIGURE 8: PERFORMANCE OF CAT BOND INDICES VS. STOCKS AND BONDS



*Swiss Re Cat Bond Index. ** Eurekaledge ILS Index. ***MSCI World Net Total Return Index. ****Bloomberg Barclays Capital Global Aggregate Bond Index.

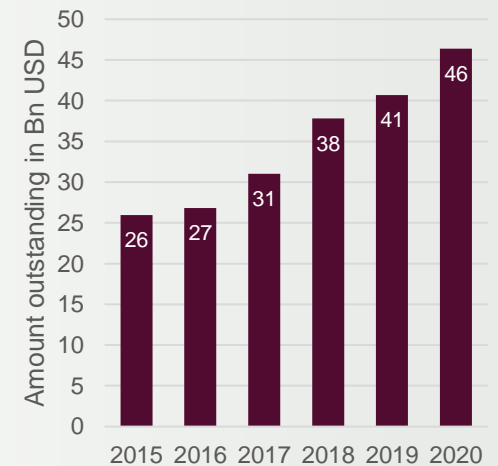
Source: [Man Group Institute](#) (October, 2018)

FIGURE 9: ILS ISSUANCE PER YEAR



Source: [www.artemis.bm](#) (2020)

FIGURE 10: ILS OUTSTANDING



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MARKET DEVELOPMENT: CAPITAL MOBILIZATION



EXAMPLES OF PARAMETRIC INSURANCE

- Since 2007, the Caribbean Catastrophe Risk Insurance Facility (**CCRIF**), the first multi-country risk pool in the world, offers parametric insurance for tropical cyclones, earthquakes, excess rainfall and the fisheries sector to 23 countries and 1 electric utility.
- In 2014, the World Bank launched its **Capital at Risk Notes program**, which provides risk transfer solutions to its clients through the issuance of CAT bonds. Their streamlined structuring infrastructure allows to reduce clients' transaction costs.
- In 2018, the World Bank issued a **super-sized CAT Bond for Earthquake Risk** which provided Chile, Colombia, Mexico, and Peru US\$ 1.36 billion in coverage. It was the first simultaneous issuance for four sovereign entities and the largest earthquake CAT bond ever issued.
- Cambodia, Indonesia, Lao PDR, Myanmar, **Singapore**, and Japan in 2018 created the **Southeast Asia Disaster Risk and Insurance Facility (SEADRIF)**, the first regional catastrophe risk facility established by ASEAN member states.
- In 2019, the Government of Quintana Roo, a Mexican State, The Nature Conservancy, and Swiss Re **launched a first-of-its-kind parametric insurance for natural infrastructure**, aiming to quickly protect coral reefs and beaches along a coastline of 160 km of the Yucatán peninsula. The insurance is triggered if wind speeds exceeding 100 knots are recorded. The funds are disbursed fast, which is necessary to glue back the broken coral reef before it dies.
- In 2019, as part of its debt restructuring agreement with bondholders, the government of Barbados **included a natural disaster clause** which will enable it to capitalize interest and defer principal on the new bonds for 2 years if the country is hit by a climate catastrophe.



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MARKET DEVELOPMENT: CAPITAL MOBILIZATION



DERIVATIVES CAN PLAY A ROLE IN MOBILIZING SUSTAINABLE FINANCE

- Various OTC and exchange-traded climate-related derivatives currently are used by agricultural, energy and metals market participants, as well as financial entities. These **instruments** include weather derivatives, electricity futures, ESG futures and carbon derivatives based on equity indices.
- **The Chicago Mercantile Exchange (CME)** offers standardized weather futures contracts based on weather indexes for nine US cities, Amsterdam, London, and Tokyo. These contracts are employed to offer a useful tool for hedging volumetric risks related to adverse temperature and climatic conditions.
- **Water futures** were launched by the CME in December 2020. They are based on the Nasdaq Veles California Water Index and are intended to provide users exposed to the California water market with a price risk hedging mechanism.
- **Going forward**, as more reliable data becomes available, markets should expect more innovative products focused on measurable climate-related events such as sea level rise, extreme rainfall events, and natural disasters.
- The **InsuResilience Solutions Fund (ISF)** funded by KfW Development Bank is a mechanism that offers funding for studies and provides advice for the development of new concepts for climate-risk insurance solutions.
 - As of 2020 the ISF had signed agreements in Colombia, Bangladesh, Peru, Ghana, Tanzania, for the development of Climate risk analysis, concept development, and product development.



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MARKET DEVELOPMENT: CAPITAL MOBILIZATION



INSURANCE PRODUCTS FOR GREEN ASSETS AND ACTIVITIES

• Insurance related to green activities typically encompasses two product areas:

1. Insurance products with preferential insurance premiums based on environmentally-related characteristics; and
2. Insurance products for clean technology and emission reducing activities.

• The **Insurance Information Institute (III)** identifies green insurance products in three pillars:

1. **Green insurance for motor vehicles**, which include green auto insurance with premium discounts for hybrid vehicles; or with the possibility of replacing your car with a hybrid vehicle in case of total loss; or with discounts for vehicles that use alternative energy sources, and the Pay-As-You-Drive insurance, which offers drivers the option of driving less in return for a lower premium.

2. **Green insurance for businesses**, which include insurance with cover to install green building systems and materials to replace the standard ones, after a loss; or with the possibility of "green certified" rebuilding in the event of a total loss.

3. **Green insurance for buildings and homes**, with the possibility of replacing damaged materials with eco-friendly ones; or with coverage for homeowners who generate their own clean energy in case of a power outage, or which include insurance with premium discounts for LEED certified buildings and homes.



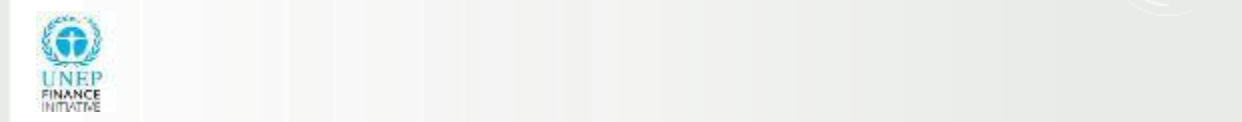
2

MARKET DEVELOPMENT: CAPITAL MOBILIZATION



TRANSITIONING TO A NET-ZERO EMISSIONS ECONOMY

- In 2020, a first technical paper produced by the Chief Risk Officers Forum on a carbon footprinting methodology for underwriting portfolios. The objective was to provide insurers an understanding of the challenges and methodologies to eventually disclosing the carbon intensity of their underwriting portfolios.
- In June 2021 the UN Secretary General called for re/insurers to go 'net zero' at the Insurance Development Forum's Summit.
- Launched at the recent G20 Climate Summit in Venice, the Net-Zero Insurance Alliance (NZIA) was launched by eight global (re)insurance players, committing to transition their underwriting portfolios to net-zero greenhouse gas (GHG) emissions by 2050. This initiative follows previous initiatives by the Asset Managers Initiative, Asset Owner Alliance and Banking Alliance, representing a total of \$US 86.6 trillion AuM.



- Nearly 20 insurers that have joined the Net Zero Asset Owner Alliance and have committed to
 1. transitioning their investment portfolios to net-zero GHG emissions by 2050 consistent with a maximum temperature rise of 1.5°C above pre-industrial levels;
 2. establishing intermediate targets every five years; and
 3. regularly reporting on progress.

3

REGULATORY DEVELOPMENTS



SUPERVISORS HAVE TAKEN AN ACTIVE ROLE TO UNLOCK RESPONSIBLE INSURANCE

- The IAIS has issued the **Insurance Core Principles (ICPs)**, a globally accepted framework comprising Principles, Statements, Standards and Guidance, to encourage the maintenance of consistently high supervisory standards in their member jurisdictions.
- SIF and the IAIS published the **Application Paper on the Supervision of Climate-related Risks in the Insurance Sector** which provides insights into how to address climate risks within supervisory reviews, corporate governance, risk management, scenario analysis and stress testing, as well as investments and disclosures.
- During the Green Swan conference at the beginning of June 2021, a climate training platform for central banks and financial supervisors by BIS, NGFS, IAIS and SIF was announced: the **“Central Bankers and Supervisors Climate Training Alliance (CTA)”**. This alliance is expected to be up and running by the COP26. The goal of CTA is that the training on climate-related financial risks be accessible across the world.
- Under the 2021 UK presidency, the G7 have been discussing the role of finance ministries and central banks in driving the transition to net-zero financial systems. As a result, to help speed the transition, **the Net-Zero Insurance Alliance (NZIA)** was launched at the G20 Climate Summit in Venice by eight global (re)insurance players, committing to transition their underwriting portfolios to net-zero greenhouse gas (GHG) emissions by 2050.



3

REGULATORY
DEVELOPMENTS

REGULATORY DEVELOPMENTS RELATED TO SUSTAINABLE INSURANCE

COUNTRY	AUTHORITY	YEAR	REGULATION / RECOMMENDATION
China	The Financial Supervisory Commission	2021	Has required insurers to assess the impact of climate change in the 2020 Own Risk and Solvency Assessment (ORSA) Supervisory Report, including risk identification of climate change, major risk exposure status, risk assessment methods and related response strategy.
France	French Prudential Supervision and Resolution Authority	2021	Published a first assessment of financial risks stemming from climate change and the main results of a climate pilot exercise carried out between July 2020 and April 2021 and covering 9 banking groups and 15 insurance groups, together representing 85% of French banks' total assets and 75% of French insurers' technical provisions and assets, respectively.
Italy	Istituto per la Vigilanza Sulle Assicurazioni	2018	Underlined the importance of E&S factors in the activities of insurance undertakings.
Japan	Financial Services Agency	2020-2021	Conducted thematic reviews on natural disaster risk management for non-life insurers , which include retention and reinsurance strategy, group reinsurance policy, claim management, protection gap among SMEs for water-related disasters and risk amount of large natural disasters.
	Financial Services Agency and Tokyo Stock Exchange	2021	Published a draft revision of the Corporate Governance Code that requires companies listed in the prime market (including insurance companies) to disclose information based on TCFD recommendations based on a "comply or explain" basis.

3

REGULATORY DEVELOPMENTS



REGULATORY DEVELOPMENTS RELATED TO SUSTAINABLE INSURANCE

COUNTRY	AUTHORITY	YEAR	REGULATION / RECOMMENDATION
Netherlands	The Netherlands Bank	2021	In the Good Practice and Q&A document , DNB formulates principles on how insurers should integrate climate-related risks in the ORSA based on the outcomes of an analysis of ORSAs submitted in 2018.
		2022	Climate-related and environmental risks have become a standard part of DNB's fit and proper assessments for Board members of insurers, banks and pension funds. This means that environmental risks will feature more prominently in the assessment interviews.
Singapore	The Monetary Authority of Singapore	-	Conducts Industry-Wide Stress Tests (IWST) for selected direct insurers representing at least 80% of the market. It consulted on its Proposed Guidelines on Environmental Risk Management , which set expectations that insurers incorporate environmental considerations into their strategies, business plans, risk management and disclosures.
Switzerland	Swiss Financial Market Supervisory Authority	2021	Proposed that large insurance companies and insurance groups are required to make their climate-related financial risks transparent from 2022 onwards. The approach is based on the recommendations of the TCFD.
United Kingdom	Prudential Regulation Authority	-	Conducts biennial industry-wide insurance stress tests (IST) for the UK's largest regulated life and general insurers representing more than 70% of the market.

3

REGULATORY DEVELOPMENTS



REGULATORY DEVELOPMENTS RELATED TO SUSTAINABLE INSURANCE

COUNTRY	AUTHORITY	YEAR	REGULATION / RECOMMENDATION
United Kingdom	Prudential Regulation Authority	2019	In a Supervisory Statement on Climate Change , it noted that it expects “firms to consider engaging with the TCFD Framework and other initiatives in developing their approach to climate-related financial disclosures”.
			The UK PRA has given (re)insurers until 2021 to embed their management approach of climate-related financial risks.
United States	National Association of Insurance Commissioners	2017	In the NAIC ORSA Guidance Manual , US ORSA require insurers to explain how they identify, assess, monitor, prioritize and report all material and relevant risks. To the extent that an insurer deems climate-related risks material to its business strategy and operations these risks should be disclosed in the annual ORSA Summary Report filing with the regulator.
	California Department of Insurance	2020	Launched the first-ever database of green insurance products , with more than 400 products available to businesses. These include insurance solutions that provide green-rebuild coverage, lower premiums and discounts to more energy efficient, and lower-emission buildings and vehicles and protect low-income communities and natural ecosystems.
	New York State Department of Financial Services		Was the first US regulator to set climate-related expectations in 2020 , calling on insurers to integrate climate-related risks into governance frameworks, risk management processes and business strategies.



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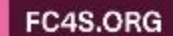
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