

The page is decorated with several circular images of Japanese cultural items: two open paper umbrellas (one white with blue patterns, one pink), a pile of gold nuggets, a red and white patterned fabric with colorful pom-poms, a black lacquer bowl with a gold floral design, a view through a metal grid, and a purple fabric with a floral pattern. Scattered around these are solid blue and yellow circles of various sizes.

Japan's Insurance Market 2024

Japan’s Insurance Market 2024

Contents	Page
To Our Clients	
Masaaki Matsunaga President and Chief Executive The Toa Reinsurance Company, Limited	1
<hr/>	
1. Japan: A Disaster-Prone Country	
Nobuo Fukuwa Professor Emeritus, Nagoya University Director, Aichi/Nagoya Resilience Co-Creation Center	2
<hr/>	
2. Comprehensive View of Risk for Japan for Robust Risk Management	
Kazuya Fujimura, Managing Director & Vice President, Verisk Extreme Event Solutions Ivelin Zvezdov, Assistant Vice President, Verisk Extreme Event Solutions Jay Guin, Executive Vice President, Verisk Extreme Event Solutions	12
<hr/>	
3. Trends in Japan’s Non-Life Insurance Industry	
Non-Life Underwriting & Planning Department 1 Non-Life Underwriting & Planning Department 2 The Toa Reinsurance Company, Limited	20
<hr/>	
4. Trends in Japan’s Life Insurance Industry	
Life Planning Department The Toa Reinsurance Company, Limited	30
<hr/>	
Company Overview	35
<hr/>	

To Our Clients

It gives me great pleasure to have the opportunity to welcome you to our publication, “Japan’s Insurance Market 2024.” It is encouraging to know that over the years our publications have been well received even beyond our own industry’s boundaries as a source of useful, up-to-date information about Japan’s insurance market, as well as contributing to a wider interest in and understanding of our domestic market.

The business environment surrounding the insurance and reinsurance industries is changing rapidly and substantially every day. The risks they face are becoming increasingly diverse and complex, with the advancement and spread of digital technologies, the intensifying severity of natural disasters resulting from global warming, changing demographics in the form of a falling birthrate and aging population, and increasing geopolitical risks such as Russia’s invasion of Ukraine. Furthermore, the experience of the COVID-19 pandemic has transformed the global economy and the way people live and work. Amid these dramatic changes in all aspects of society, the role demanded of insurance and reinsurance is also undergoing a significant transformation.

Under these circumstances, the Toa Re Group formulated “KIZUNA 2026,” our new medium-term management plan, and launched it in April 2024. The name “KIZUNA 2026” is intended to enhance mutual trust and deepen the “bond” between all officers and employees of the Toa Re Group, thereby further improving the Group’s ability to respond to issues, and thereby strengthening the “connection” with customers and various other stakeholders, with the aim of achieving sustainable growth together.

In addition, “KIZUNA 2026” sets “Promotion of climate change countermeasures,” “Respect for human rights and promotion of D&I,” and “Strengthening of internal control” as the three main tasks, with the aim of realizing a sustainable society and further enhancing the Group’s corporate value.

Everyone at the Toa Re Group will do their utmost to ensure that the Group consistently fulfills its mission as a reinsurance company of “Providing Peace of Mind,” as articulated in the Toa Re Mission Statement.

We decided to issue this year’s publication exclusively in electronic form, in recognition of the role that we all have in considering the environment and sustainability. I hope that our publication continues to provide a greater insight into the Japanese insurance market, and I would like to express my gratitude to all who kindly contributed so much time and effort towards its making.



Masaaki Matsunaga

President and Chief Executive
The Toa Reinsurance Company, Limited

1 Japan: A Disaster-Prone Country

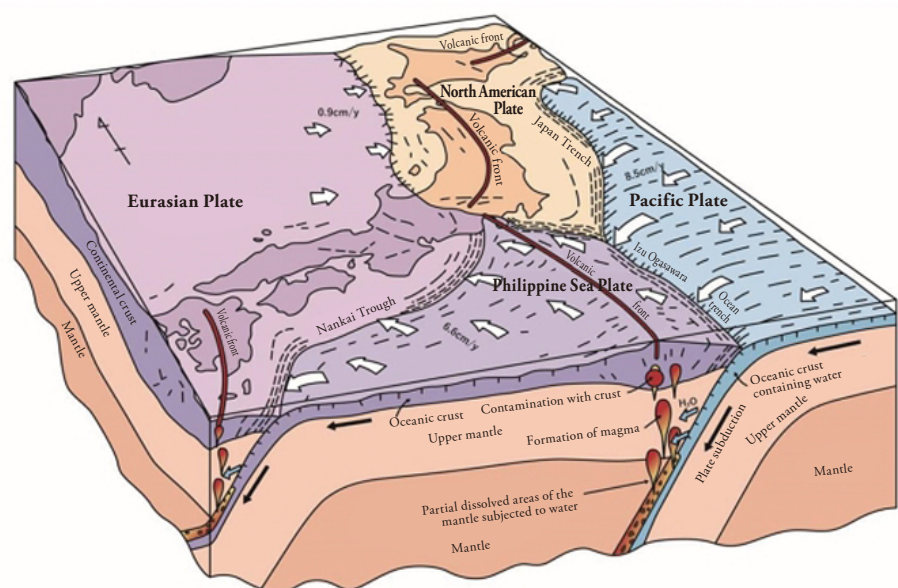
Nobuo Fukuwa
Professor Emeritus, Nagoya University
Director, Aichi/Nagoya Resilience Co-Creation Center

1. Introduction

The Japanese archipelago, on the western edge of the Pacific Ocean, is on the boundary of four plates in the Asian monsoon zone. This arcuate archipelago with a large amount of coastal land was created by the subduction of two oceanic plates (the Philippine Sea Plate and the Pacific Plate), beneath the two continental plates (the Eurasian Plate and the North American Plate) (Figure 1). Huge subduction zone earthquakes occur at the boundaries between continental and oceanic plates, and crustal earthquakes occur due to active faults in shallow inland areas. Representative earthquakes of the former are Nankai Trough earthquakes, Sagami Trough earthquakes (the Kanto Earthquake, etc.), and earthquakes along the Japan Trench (the Great East Japan Earthquake, etc.), and examples of the latter are Southern Hyogo Prefecture earthquakes (the Great Hanshin-Awaji Earthquake, etc.) and Noto Peninsula earthquakes.

Seawater taken underground along with the oceanic plates dissolved the mantle on top of those plates, creating magma and a series of volcanoes. Japan's mountain ranges are interlinked with these volcanoes and absorb seasonal winds, which results in substantial rain. Typhoons also strike frequently. Japan's mountains were formed by volcanic ejecta and are therefore steep and prone to collapse, while the nation's rivers are short and steep, making them prone to flooding and landslides. The country is mountainous and has little flat land, so residential areas are limited to lowlands near river mouths and land in valleys, where the ground is soft and the risk of earthquakes and floods is high. Thus, Japan has a unique geographical character created by the movement of tectonic plates as part of the workings of the Earth. Although it is a country with beautiful scenery and a warm climate, it is also frequently exposed to earthquakes, volcanoes, wind and flood damage, and ground

Figure 1: The Japanese Archipelago from the Perspective of Plate Tectonics



Source: Japan Geotechnical Consultants Association, <https://www.zenchiren.or.jp/tikei/>



disasters. Indeed, nature in Japan is both a loving mother and a stern father, and has led to the formation of a unique Japanese culture that finds ways to compromise with nature. Something that I have noticed is that villages are generally built to avoid areas with high disaster risk.

2. The Japanese History and Society with Strong Impact of Disasters

I feel Japan has historically undergone major changes when various disasters such as earthquakes, volcanic eruptions, heavy wind and flooding, and infectious diseases overlapped. In particular, Nankai Trough earthquakes, which have affected a wide area of western Japan, are often preceded and followed by earthquakes caused by active faults inland and therefore coincide with turning points in the nation's history. As shown in Figure 1, the Nankai Trough is a depression in the ocean floor on the Pacific side of western Japan that was created by the subduction of the Philippine Sea Plate under the Eurasian Plate. As shown in Figure 2, massive earthquakes have occurred at this location at intervals of 90 to 150 years. Earthquakes occur in a variety of ways, with some instances destroying the entire epicenter area at once, and others occurring separately in the east and west. The following is an example drawn from the last three Nankai Trough earthquakes.

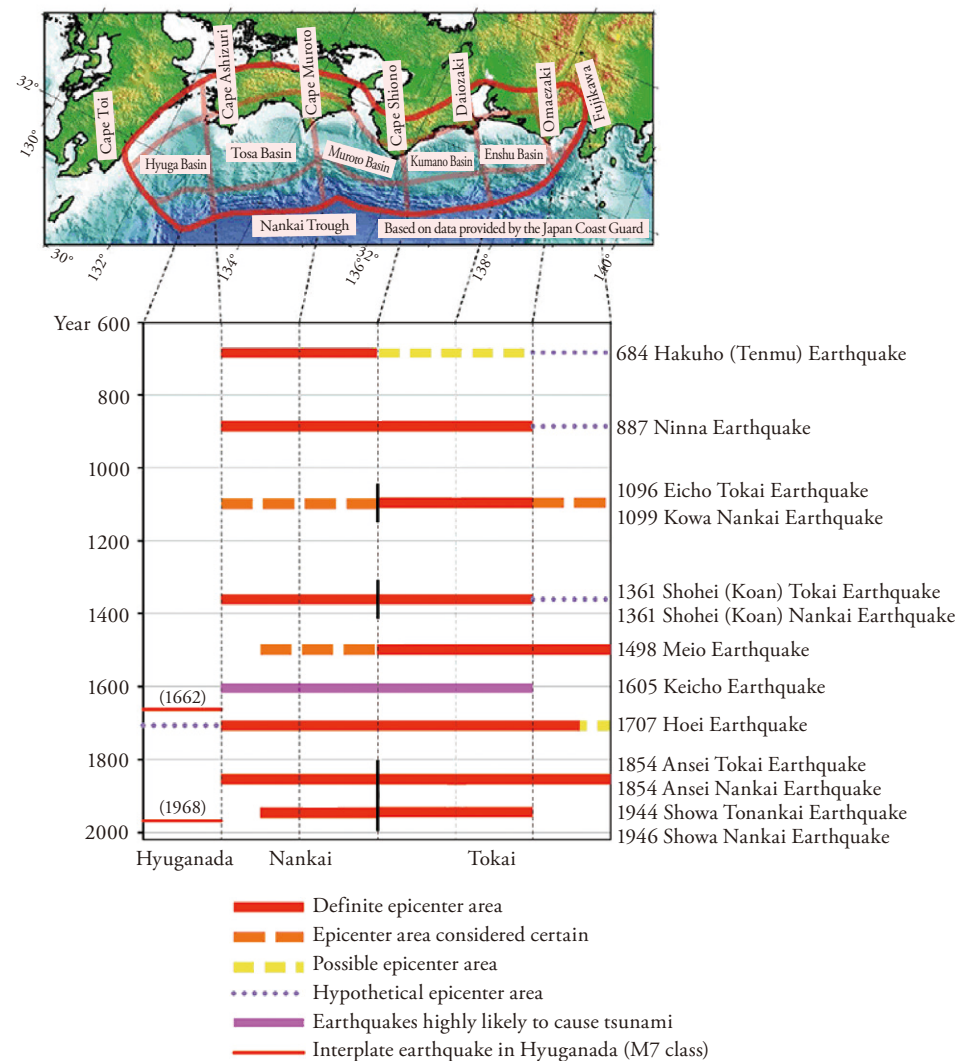
At the beginning of the 18th century, the Genroku Kanto Earthquake occurred on December 31, 1703, and four years later on October 28, 1707, the Hoei Earthquake occurred, during which the entire Nankai Trough epicenter area was active at the same time. Furthermore, 49 days later, Mt. Fuji erupted, and the following year, in 1708, a huge fire occurred in Kyoto. Japan's three major metropolitan areas, the Kanto, Tokai, and Kinki regions, were affected by these disasters, which brought an end to the affluent society of the Genroku era (the name of the Japanese era, from 1688 to 1704) and ushered in an era of simplicity and frugality.

On December 23 and 24, 1854, the Ansei Tokai Earthquake and the Ansei Nankai Earthquake occurred in succession to the east and west of the epicenter area of the Nankai Trough. The following year, on November 11, 1855, the Ansei Edo Earthquake occurred. Around this time, many earthquakes occurred inland, a typhoon hit Edo (current Tokyo) directly, and a cholera epidemic broke out. Subsequently, the Edo era (from 1603 to 1868) ended and the Meiji era (from 1868 to 1912) began.

On December 7, 1944 and December 21, 1946, the Showa Tonankai Earthquake and the Showa Nankai Earthquake occurred, respectively. The period before and after both earthquakes was one of the most difficult periods in Japanese history. In 1917, a storm surge hit the area around Tokyo Bay; in 1918 the Spanish flu broke out; and in 1921 Prime Minister Takashi Hara was assassinated. Then, on September 1, 1923, the Great Kanto Earthquake occurred, killing 105,000 people and causing economic damage three to four times the national budget. This earthquake led to the introduction of Japan's first earthquake-resistant regulations for buildings, and the improvement of Tokyo's urban infrastructure through the

imperial capital reconstruction plan. The 25 years following the Great Kanto Earthquake were a period of frequent disasters. These included the Kita-Tajima Earthquake in 1925, the Kita-Tango Earthquake in 1927, the Kita-Izu Earthquake in 1930, the Showa-Sanriku Earthquake in 1933, the Muroto Typhoon in 1934, the Tottori Earthquake in 1943, the Showa Tonankai Earthquake in 1944, the Mikawa Earthquake and the Makurazaki Typhoon in 1945, the Showa Nankai Earthquake in 1946, Typhoon Kathleen in 1947, and the Fukui Earthquake in 1948. During this period, Japanese society became militaristic and the country entered the Second Sino-Japanese War and World War II, leading to its defeat. One of the factors in this defeat was great damage from the Showa Tonankai and Mikawa earthquakes in the area around Nagoya, where munitions factories were concentrated. Although Japan

Figure 2: Historical Occurrences of Nankai Trough Earthquakes



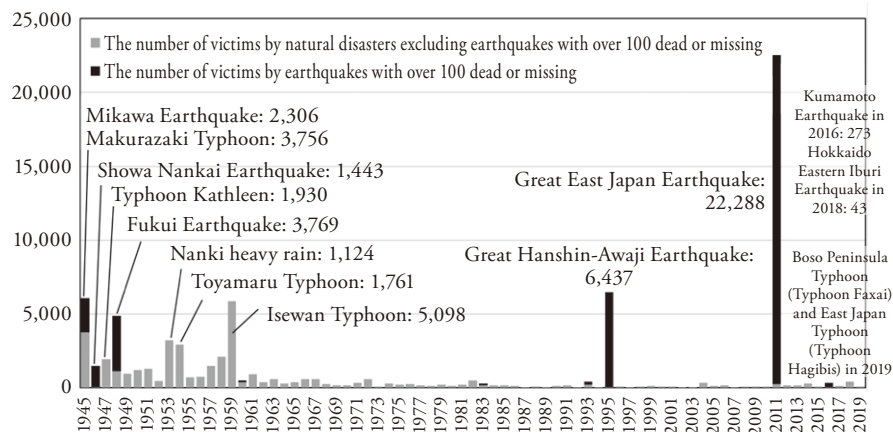
Source: Headquarters for Earthquake Research Promotion



was in a difficult situation due to the damage from the earthquakes and the war, special procurement beginning in 1950 for the Korean War helped Japan revive industrially and return to the international community. In the same year, the Building Standards Act was enacted and earthquake resistance standards were established.

In the 1950s, typhoons that killed more than 1,000 people occurred almost every year, and the Isewan Typhoon (Typhoon Vera) that struck in 1959 caused as many as 5,000 casualties. Japan responded in 1961 by enacting the Basic Act on Disaster Management, which was akin to a constitution for disaster countermeasures. Since then, flood control measures such as dams and levees have been implemented, and the number of victims of wind and flood damage has decreased dramatically (Figure 3). Japan achieved rapid economic growth in the 1960s and 1970s, partly because it was a relatively quiet period for earthquakes. On the other hand, overconfidence in flood control measures seems to lead to the expansion of urban areas into regions with high disaster risk. This may be one of reasons why earthquakes in recent years have caused tremendous damage.

Figure 3: Transition in Natural Disaster Casualties



Source: Disaster Management in Japan, https://www.bousai.go.jp/kaigirep/hakusho/r04/honbun/3b_6s_07_00.html

Subsequently, the 1968 Tokachi-oki Earthquake and the 1978 Miyagi-oki Earthquake caused major damage to reinforced concrete buildings. New seismic standards were therefore introduced in 1981. The Great Hanshin-Awaji Earthquake in 1995 damaged many buildings that met the old earthquake resistance standards, so the Act on Promotion of Seismic Retrofitting of Buildings was enacted. Furthermore, the Great East Japan Earthquake in 2011 brought tsunami damage, nuclear disasters, and long-period earthquake ground motion problems in high-rise buildings into the spotlight. Japan implemented national resilience measures in response, along with countermeasures against Nankai Trough earthquakes and long-period earthquake ground motion for high-rise buildings.

1. Japan: A Disaster-Prone Country

Table 1 shows the earthquakes that caused major damage, leading to social change, countermeasures, and legal developments since the start of the 20th century. It also shows how Japan implemented various countermeasures in the wake of earthquake damage.

Table 1: Disasters That Caused Major Damage, Leading to Social Change, Countermeasures, and Legal Developments since the Start of the 20th Century

Year	Natural Disasters and Infectious Diseases	Social Events	Countermeasures and Legal Developments
1917	Tokyo Bay storm surge damage Spanish flu epidemic (up to 1921)		
1918	Etorofu-oki Earthquake		
1919			Urban Area Building Law and City Planning Law enacted
1921	Ryugasaki Earthquake	Assassination of Prime Minister Takashi Hara	
1922	Eastern Kanagawa Earthquake		
1923	Great Kanto Earthquake		Imperial Capital Reconstruction Board established (Board president Shinpei Goto)
1924			Urban Area Building Law revised (new earthquake resistance regulations established)
1925	Kita-Tajima Earthquake	Maintenance of Public Order Act and Universal Manhood Suffrage Act	
1927	Kita-Tango Earthquake	Financial Crisis	
1930	Kita-Izu Earthquake		
1931	West Saitama Earthquake	Manchurian Incident	
1932		May 15th Incident	
1933	Showa Sanriku Earthquake	Withdrawal from the League of Nations	
1936	Kawachi Yamato Earthquake	February 26 Incident	
1937		Second Sino-Japanese War begins	
1941		Start of World War II	
1944	Showa Tonankai Earthquake	Bombing of munitions factories in Nagoya	
1945	Mikawa Earthquake Makurazaki Typhoon	Tokyo and Nagoya great air raids Battle of Okinawa & Atomic bombs dropped on Hiroshima and Nagasaki End of World War II	War Damage Reconstruction Board established Basic Policy for the Reconstruction of War-damaged Areas enacted
1946	Showa Tokai Earthquake		
1947	Typhoon Kathleen		Enforcement of the Constitution of Japan
1948	Fukui Earthquake		
1950		Special procurement for Korean War	Building Standards Act enacted
1955		High economic growth period (up to 1973)	
1959	Isewan Typhoon		
1964		Tokyo Olympics, Tokaido Shinkansen began operating Osaka Expo (1970) Sapporo Olympics & the reversion of Okinawa to Japan (1972)	Basic Act on Disaster Management enacted (1961)
1978	Miyagi Prefecture-Oki Earthquake		Act on Special Measures Concerning Countermeasures for Large-Scale Earthquakes enacted
1981			Building Standards Act revised (new seismic standards introduced)
1995	Great Hanshin-Awaji Earthquake		Act on Promotion of Seismic Retrofitting of Buildings and Act on Special Measures for Earthquake Disaster Countermeasures enacted
2011	Great East Japan Earthquake		
2013			Basic Act for National Resilience enacted
2020	COVID-19 epidemic		

3. Increasingly Severe Wind and Flood Damage

In recent years, wind and flood damage that exceeds the level of existing flood control measures has been increasing due to factors including the effects of climate change. Table 2 is a list of severe meteorological disasters named by the Japan Meteorological Agency. The left side of the table shows disasters from the latter half of the Showa era (1954-1988), and the right side shows disasters from the Heisei era onwards (from 1989). Comparing the left and right, such typhoons occurred frequently during the Showa era, and heavy rain has occurred frequently since the beginning of the Heisei era.

Figure 4 shows the number of annual occurrences of rainfall with an hourly precipitation of 50 mm or more, indicating increasing occurrence of severe torrential rain. As the risk of flood damage increases, the limits of flood control measures are becoming clear due to financial difficulties. The Ministry of Land, Infrastructure, Transport and Tourism has therefore proposed the concept of basin flood control. This involves securing places to store overflowing water, along with location optimization initiatives to keep people from living in dangerous areas.

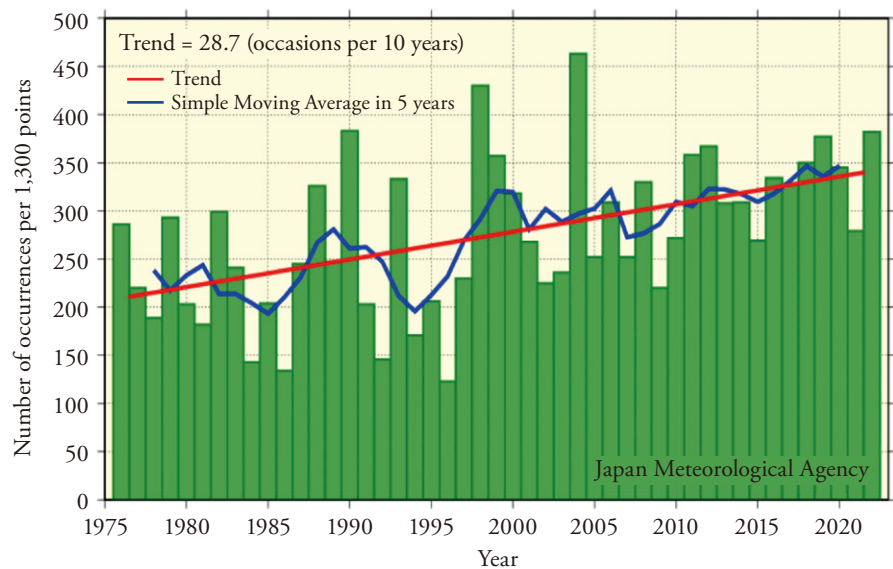
Table 2: Weather-Related Disasters Named by the Japan Meteorological Agency

1.	Toyamaru Typhoon	September 1954 (Typhoon No. 15, Marie)	17.	Heavy rain, August 1993	July 31-August 7, 1993
2.	Kanogawa Typhoon	September 1958 (Typhoon No. 22, Ida)	18.	Niigata and Fukushima heavy rain, July 2004	July 12-13, 2004
3.	Miyakojima Typhoon	September 1959 (Typhoon No. 14, Sarah)	19.	Fukui heavy rain, July 2004	July 17-18, 2004
4.	Isewan Typhoon	September 1959 (Typhoon No. 15, Vera)	20.	Heavy snowfall, 2006	Winter 2006
5.	Rainy season front heavy rain, 1961	June 24-July 10, 1961	21.	Heavy rain, July 2006	July 15-24, 2006
6.	Second Muroto Typhoon	September 1961 (Typhoon No. 18, Nancy)	22.	Heavy rain, August 2008	August 26-31, 2008
7.	Heavy snowfall, January 1963	Heavy snow mainly in the Hokuriku region	23.	Heavy rain in Chugoku and northern Kyushu, July 2009	July 19-26, 2009
8.	San'in Hokuriku heavy rain, July 1964	July 18-19, 1964	24.	Niigata and Fukushima heavy rain, July 2011	July 27-30, 2011
9.	Second Miyakojima Typhoon	September 1966 (Typhoon No. 18, Cora)	25.	Heavy rain in northern Kyushu, July 2012	July 11-14, 2012
10.	Heavy rain, July 1967	July 7-10, 1967	26.	Heavy rain, August 2014	July 30-August 26, 2014
11.	Third Miyakojima Typhoon	September 1968 (Typhoon No. 16, Della)	27.	Heavy rain in Kanto and Tohoku, September 2015	September 9-11, 2015
12.	Low pressure system, January 1970	January 30-February 2, 1970	28.	Heavy rain in northern Kyushu, July 2017	July 5-6, 2017
13.	Heavy rain, July 1972	July 3-13, 1972	29.	Heavy rain, July 2018	June 28-July 8, 2018
14.	Okinoerabu Typhoon	September 1977 (Typhoon No. 9, Babe)	30.	Boso Peninsula Typhoon, 2019	September 2019 (Typhoon No. 15, Faxai)
15.	Heavy rain, July 1982	July 23-25, 1982	31.	East Japan Typhoon, 2019	October 2019 (Typhoon No. 19, Hagibis)
16.	Heavy rain, July 1983	July 20-23, 1983	32.	Heavy rain, July 2020	July 3-31, 2020

Source: Japan Meteorological Agency, https://www.jma.go.jp/jma/kishou/now/meishou/meishou_ichiran.html

Furthermore, the 2020 revision of Regulation for Enforcement of the Real Estate Brokerage Act mandated the explanation of flood hazards when conducting real estate transactions. In addition, heavy rain and strong ground motion can cause events including landslip, debris flows, and landslides, so land use has been restricted through the designation of landslide-prone areas. Each local government publishes hazard maps for such issues as open water flooding caused by river flooding, inland water flooding caused by insufficient drainage capacity, and damage from landslides.

Figure 4: Annual Occurrences of Hourly Precipitation of 50 mm or More
(From Cabinet Office materials)

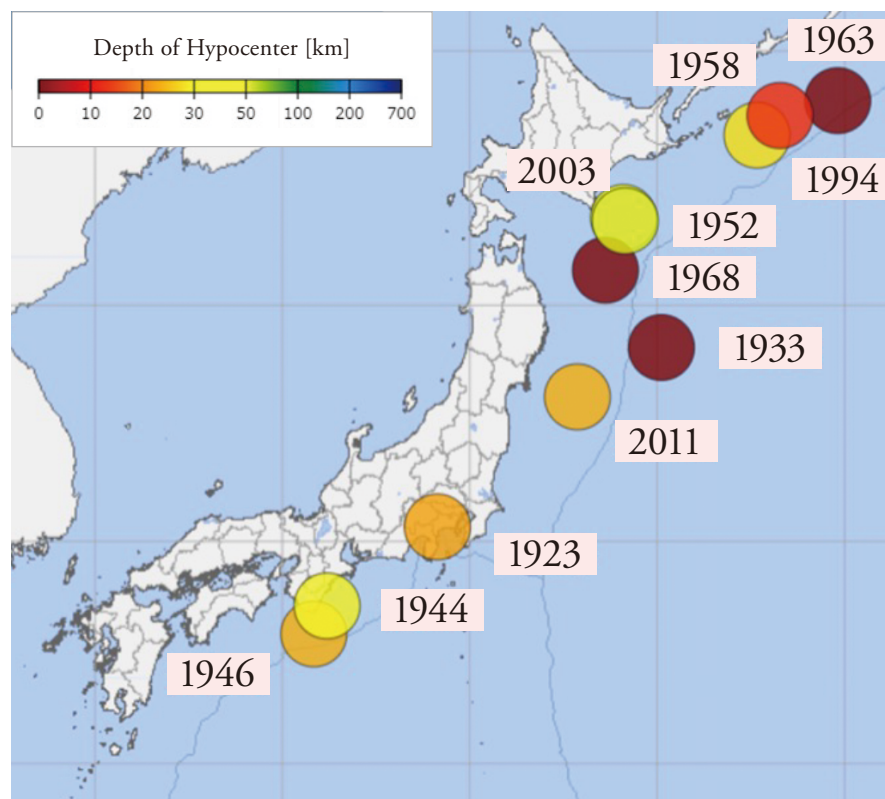


4. Imminent Earthquake Disasters

Over 100 years have passed since the 1923 Great Kanto Earthquake. Figure 5 shows the locations of massive earthquakes (M8 class) that have occurred around the Japanese archipelago since the Great Kanto Earthquake. There have been 11 earthquakes in total, and an M8 class earthquake occurs approximately once every 10 years. The diagram indicates that fewer earthquakes occur west of the Kanto region. The massive earthquakes that have occurred there are Nankai Trough earthquakes and Kanto earthquakes. The occurrence of super-large earthquakes along the Japan Trench and Kuril Trench are also a concern.

The Headquarters for Earthquake Research Promotion publishes a nationwide seismic hazard map based on long-term evaluations of various earthquakes. Figure 6 shows the probability distribution for ground motion with a seismic intensity of 6-lower or more over the next 30 years. The map predicts the probability of a disastrous earthquake as high in the vicinity of major faults, in addition to earthquakes directly beneath metropolitan areas, in the Nankai Trough, and along the Japan Trench and Kuril Trench.

Figure 5: Massive Earthquakes throughout the Japanese Archipelago over the Past 100 Years



Source: Japan Meteorological Agency, <https://www.data.jma.go.jp/eqdb/data/shindo/>

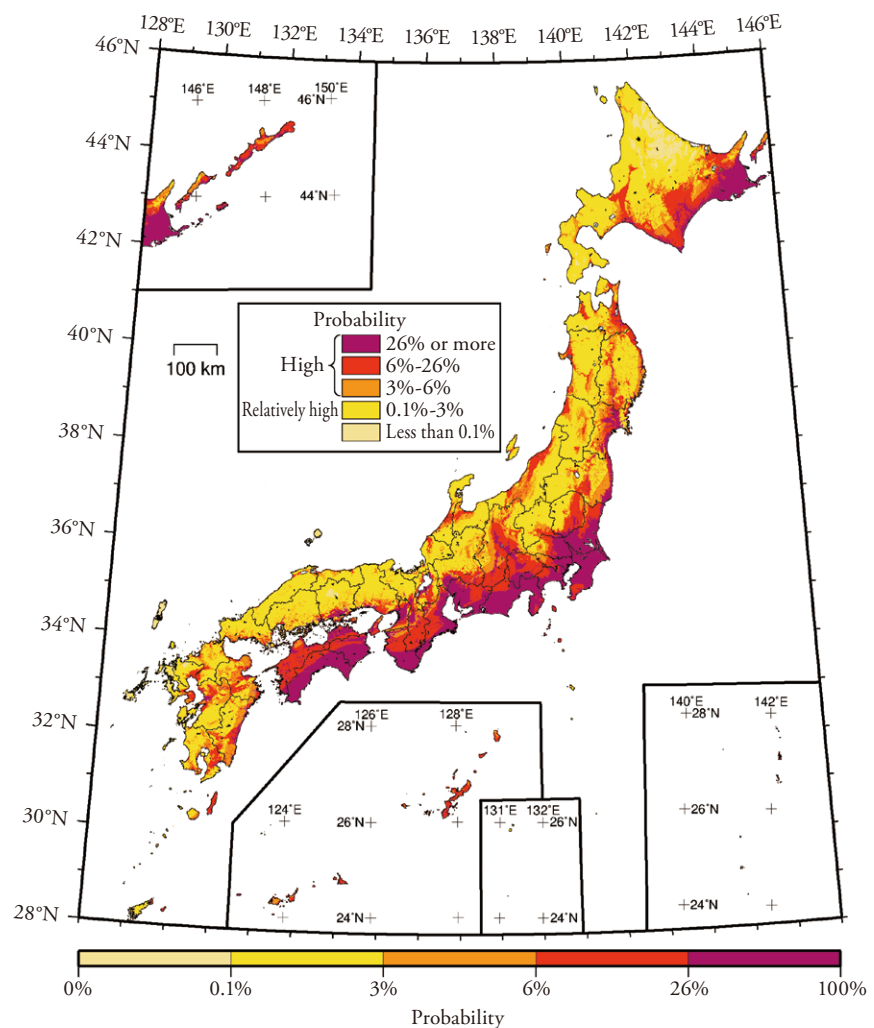
Therefore, the Central Disaster Management Council has been making earthquake damage estimates for these earthquakes, and the amount of damage would be far greater than that of the Great East Japan Earthquake in 2011. In particular, a Nankai Trough earthquake is predicted to cause severe damage, with half of the nation's population affected, 323,000 direct deaths and 2.38 million houses completely destroyed, in the worst imaginable case. This is 15 times the damage caused by the Great East Japan Earthquake.

Tsunami would cause most of the predicted deaths, and ground motion and fire would be the main causes for about 90% of the complete destruction of houses. Even if houses do not completely collapse or burn down due to ground motion, tsunami will wash them away in the areas they affect. The predicted number of completely destroyed houses would be three times the annual number of houses built in Japan. Therefore, building disaster-resilient houses in which people can continue to live is of the utmost importance.

Furthermore, a large number of disaster-related deaths are expected due to the lack of disaster response resources such as evacuation shelters, medical care, welfare and nursing care. In addition, more than 60% of facilities of Japan's manufacturing industries are located in the disaster-prone areas. Japanese industry will lose its international competitiveness if it does not recover quickly. Industrial facilities that can remain in operation after an earthquake will be as important as housing.

Earthquakes along the Nankai Trough often occur separately in the east and west of the epicenter area, with the Showa Tonankai Earthquake and the Showa Nankai Earthquake occurring two years apart and the Ansei Tokai Earthquake and the Ansei Nankai Earthquake occurring approximately 30 hours apart. Consequently, the situation would be extremely dire if a major earthquake were to occur in either the east or the west of the Nankai Trough. Therefore, in 2019 the Japan Meteorological Agency established a system in which it would issue Nankai Trough earthquake emergency information (major earthquake warnings) and precautionary warnings about subsequent earthquakes in anticipation of the occurrence of a major earthquake in the area. In the worst-case scenario, that the first earthquake causes significant damage, people around the world would be concerned and worried that the

Figure 6: Nationwide Probabilistic Seismic Hazard Map
(From the Headquarters for Earthquake Research Promotion materials)



Probabilistic Seismic Hazard Map: Probability Distribution

Probability of ground motion with a seismic intensity of 6- lower or more over in the next 30 years
(Average case and all earthquakes)

Source: The Headquarters for Earthquake Research Promotion, https://www.jishin.go.jp/evaluation/seismic_hazard_map/



occurrence of another earthquake resulting in similar damage could disrupt maritime transportation, foreign exchange, and stock markets. Reducing damage caused by an initial earthquake is therefore of the utmost importance.

5. Overcoming Disasters with Housing That Remains Habitable

The administrative capabilities of the Japanese government will be inadequate, and not able to handle a large-scale earthquake such as a Nankai Trough earthquake or an earthquake directly beneath the Tokyo metropolitan area. All citizens have no choice but to be prepared, to safeguard their own lives, and to help each other overcome disasters. Making houses and buildings earthquake resistant is critically important to reducing damage from earthquakes. Japan needs to create housing that people can continue to live in and buildings and factories that people can continue to work in even after a major disaster.

The current seismic standards are based on Article 1 of the Building Standards Act: “The purpose of this Act is to safeguard the life, health, and property of people by providing minimum standards concerning the site, construction, equipment, and use of buildings, and thereby to contribute to the furtherance of the public welfare.” Yet this is only a minimum standard. The standards aim to protect lives in the event of a single earthquake only, but do not guarantee the continuation of lives or businesses in the event of a series of earthquakes. Further enhancing the earthquake resistance of buildings is necessary.

Energy independence is also important when lifelines are disrupted. Many power plants are located in high-risk coastal areas. Electricity frequencies differ between eastern and western Japan, so flexibility of electrical power transmission between the east and west is limited. Power cannot be generated unless industrial water and fuel such as LNG arrive. Lifelines are interdependent, and if one stops, they all stop. Individuals would do well to take measures such as preparing renewable energy sources, storage batteries, and water wells.

The key points of the new National Spatial Planning Plan and Basic Plan for National Resilience, which were approved by the Cabinet in July 2023, are to strengthen infrastructure and lifelines, employ digital technology, encourage collaboration between the public and private sectors, and strengthen and revitalize local disaster prevention capabilities. Through these initiatives, the government aims to create a vibrant, safe, and secure Japan. A line from Sun Tzu's *Art of War* reads, “If you know the enemy and know yourself, you need not fear the result of a hundred battles.” If we know the strength of our enemy by using hazard maps, avoid danger, and strengthen our homes, we can overcome disasters. If we know the strength of the enemy, we can find a way to deal with it. Today, over 100 years after the Great Kanto Earthquake, we need to remember past disasters and create a safe country that can sustain itself even in the event of a large-scale combination of disasters, a Nankai Trough earthquake, an earthquake directly beneath the Tokyo metropolitan area, and an eruption of Mt. Fuji.

Comprehensive View of Risk for Japan for Robust Risk Management

2.

Kazuya Fujimura, Managing Director & Vice President,
Verisk Extreme Event Solutions

Ivelin Zvezdov, Assistant Vice President, Verisk Extreme Event Solutions

Jay Guin, Executive Vice President, Verisk Extreme Event Solutions

1. Introduction

Japan is one of the world's most active regions for severe natural hazard activity, especially earthquakes and typhoons. The 2011 M9.0 Tohoku megathrust earthquake and resulting tsunami destroyed more than 120,000 buildings and damaged nearly 1 million more, generating some of the largest losses ever seen in the region. In 2018 and 2019, four powerful typhoons struck Japan, incurring total insured losses of more than USD 30 billion from wind, precipitation-induced flooding, and storm surge damage. As both the quantity and replacement value of properties in Japan's risk-prone areas continue to grow and peril frequency and severity continue to increase, it is essential for companies operating in Japan to leverage tools that help them effectively manage and mitigate the financial risks from future catastrophic events.

2. Advancements in Catastrophe Modeling for Japan

So, how does an organization effectively manage and mitigate the financial risks from future catastrophic events, especially when historical loss information has proven unreliable in assessing future loss potential? More than 30 years ago, Verisk developed probabilistic models to help organizations prepare for the financial impacts of catastrophes—before they occur. Since then, catastrophe models have become an important tool for the (re)insurance industry to manage risk, and the field of catastrophe modeling has evolved through scientific advances, improved data access, and technological optimizations.

The first catastrophe models for earthquakes in Japan, released more than 25 years ago, were only capable of modeling risks from ground shaking and fire following an earthquake. The significant damage from liquefaction and tsunami resulting from the Tohoku earthquake in 2011 prompted an urgent re-evaluation of how existing earthquake models for Japan account for additional sub-perils, and the latest model can model risks from liquefaction and tsunami. Figure 1 shows the contributions of sub-perils to annual average insured loss (AAL) and Figure 2 shows the contribution of sub-perils to the modeled insured losses for the simulated Tohoku earthquake. Ground shaking is typically a significant driver of average annual insured losses compared to the other sub-perils, and while losses attributed to tsunami activity can be significant for shallow subduction zone earthquakes, as seen in Tohoku, the occurrence is less frequent. In managing earthquake risk, it is important to leverage a model, such as the updated Verisk Earthquake Model for Japan, that considers that sub-peril contribution varies by event and that the model used provides insights at the sub-peril level.

The first typhoon models for Japan had limited capability, only able to model risks from tropical cyclone wind. After decades of development, catastrophe models can now model risks from tropical cyclone wind, storm surge, and precipitation-induced flooding to provide a comprehensive view of typhoon risk. Coupled with higher resolution, the updated Verisk Typhoon Model for Japan considers the details of flood mitigation, including river and coastal levees, dams, and reservoirs, to evaluate risks from storm surge and flooding with high accuracy. These factors are



also accounted for in the Verisk Inland Flood Model for Japan. Figure 3 shows the contributions of sub-perils to the annual average modeled insured loss for wind and flood. Figure 4 shows the contributions of sub-perils to insured loss for a simulation of Typhoon Hagibis. While tropical cyclone wind is the dominant sub-peril, storm surge, and precipitation flooding make substantial contributions. Historically, there were typhoon events in which storm surge and flooding made significant contributions, such as Typhoon Vera (1959) and Typhoon Ida (1958). However, the losses from storm surge and flooding would be much smaller if these events were to occur today because of the advancement of flood and storm surge mitigation.

Figure 1: Contributions of Sub-Perils to Average Annual Insured Loss for Earthquakes

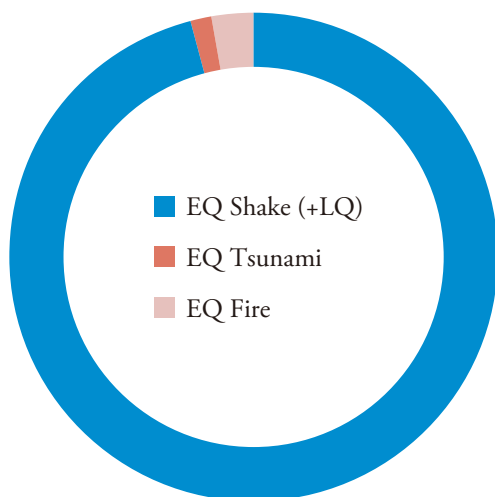


Figure 2: Contributions of Sub-Perils to Insured Loss for Simulated Tohoku Earthquake

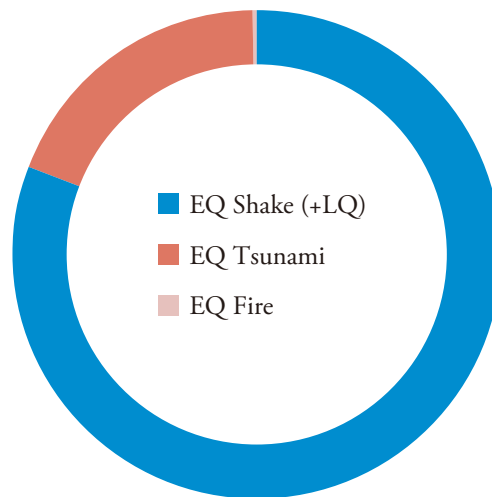


Figure 3: Contributions of Sub-Perils to Average Annual Insured Loss for Wind and Flood

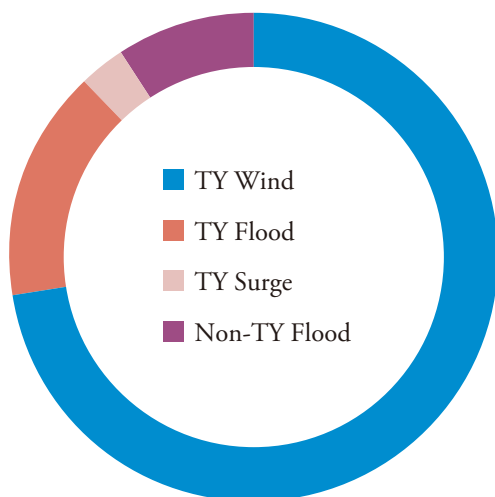
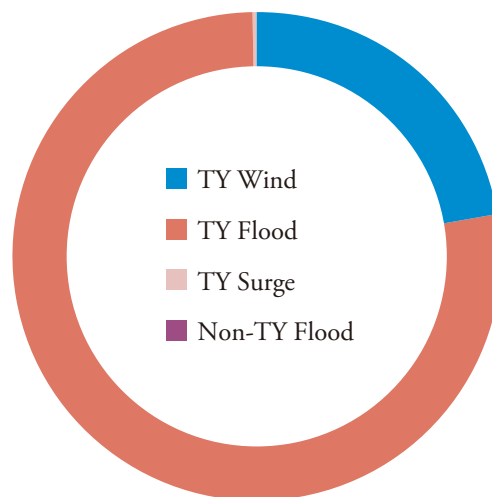


Figure 4: Contributions of Sub-Perils to Insured Loss for Simulated Typhoon Hagibis (2019)



With these advancements in catastrophe modeling for Japan, decision-making for risk transfer, including insurance, can leverage a multi-peril view of risk. Figure 5 shows the contributions of sub-perils to the annual average insured losses—approximately a 45% contribution due to earthquake, a 50% contribution due to typhoon and a 5% contribution due to non-typhoon flooding. Figure 6 shows the comparison of exceedance probability (EP) values of modeled insured losses for each peril and all perils combined. For shorter return periods, the contribution from typhoons is dominant, while the contribution from earthquakes becomes larger for longer return periods. Leveraging multiple models can aid in risk management for portfolios or (re)insurance programs covering multiple perils. These models can also identify the protection gap between insurable and insured losses by peril. This allows an organization to evaluate portfolio diversity while potentially increasing affordability.

Figure 5: Contributions of Sub-Perils to Average Annual Insured Loss

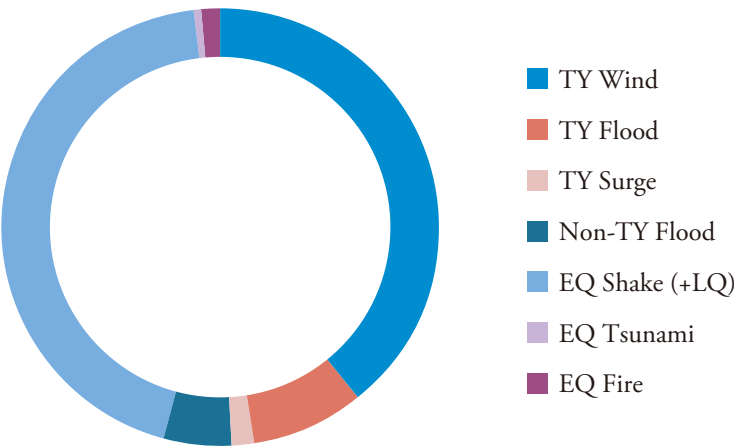
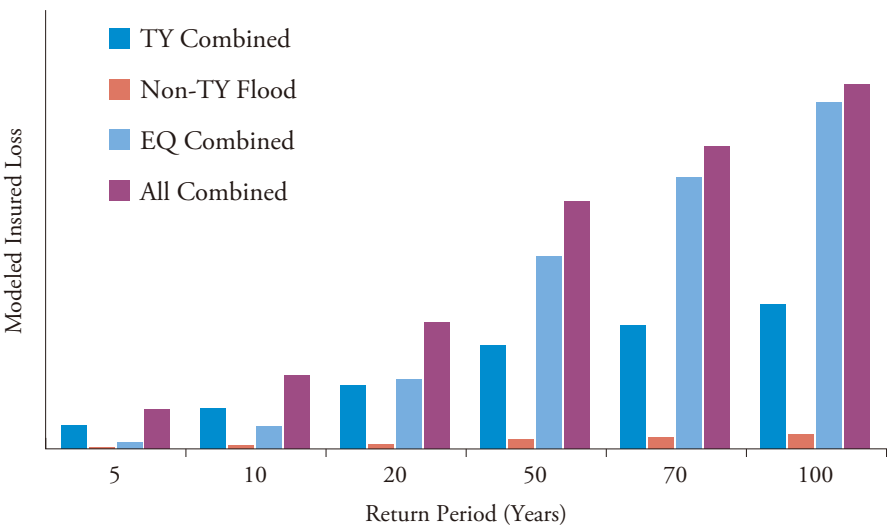


Figure 6: Comparison of EP Values for Insured Losses by Peril



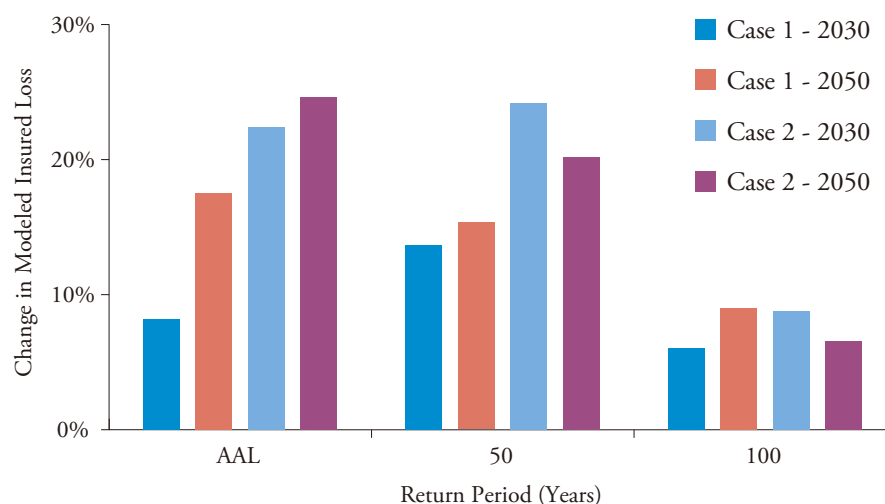
3. Changing Landscape of Risk

Catastrophe modeling has improved with advanced science and engineering, and claims data from past events and is now a commonly used tool in the (re)insurance industry. In recent years, catastrophe models have also been used to understand the change in risk view based on the change of assumptions in the models. The following sections will describe some sample applications for typhoons and earthquakes.

4. Typhoon Risk

For typhoon risk, it is essential to understand how the risk might shift in a few decades due to the impact of climate change. The industry has observed increased frequency and intensity of typhoons, including an increase in intense precipitation, as seen with Typhoon Hagibis. There has been observed incremental risk due to sea level rise causing an increase in storm surge severity. While Verisk models account for near-present climate, catastrophe models can be climate-conditioned so that the event set in the model reflects projected future climate states. With the application of a climate-conditioned catalog, a probabilistic view of future risk can be provided to evaluate how climate change impacts the risk view in the future. One recent study evaluated the impact of climate change on typhoon risk in Japan. The assumptions on climate change are temperature increases of 1.8°C (case 1) and 3.3°C (case 2) relative to preindustrial times to the end of the scenario, which is assumed to be 2050. These conditions represent the case where climate policies are introduced to achieve a net-zero economy (case 1) and where no new climate policies are introduced beyond those already introduced (case 2). Based on the assumed temperature increases, the changes in various parameters—annual frequency of typhoons, typhoon intensity, precipitation, and sea level rise—are assumed. The climate-conditioned catalogs were then created by re-sampling events from the existing event catalog. Figure 7 shows the change in EP values relative to the current EP values for insured losses.

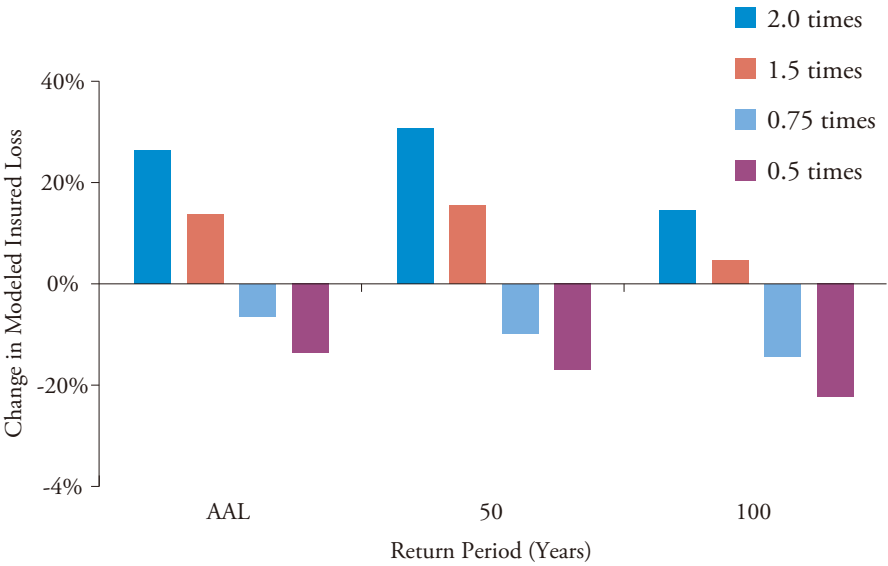
Figure 7: Change in EP Values for Insured Loss by Impact of Climate Change



5. Earthquake Risk

The Tohoku earthquake was a wake-up call for action to improve the scientific understanding of the complex tectonics of the region. New research has emerged since the event, both from local scientific organizations and the larger international scientific community. However, there are high levels of epistemic uncertainty around mechanisms of future earthquake ruptures in critical regions of Japan along the Pacific coast—the Nankai Trough and the Sagami Trough. The time-dependent models and their underlying assumptions significantly impact the view of risk because these regions are close to population centers and may experience large earthquakes, triggering all sub-perils. In modeling earthquake occurrence from the Nankai Trough, Verisk considered the uncertainty in the parameters such as annual occurrence rate, and is confident with the results from the standard Verisk model, but Verisk understands that the uncertainties in the model parameters cause uncertainties in the results. Using the Verisk Earthquake Model for Japan, the sensitivity of the results, depending on the assumptions of the frequency of earthquakes in these critical regions, can be evaluated. For example, the change of risk metrics based on the assumptions for the occurrence rate for the earthquakes in and around the Nankai Trough with a magnitude greater than 7.0 are evaluated. Figure 8 shows the change of EP values for insured loss based on the change of earthquake occurrence rates in the Nankai Trough region. Similar analysis can be conducted for other earthquake source zones.

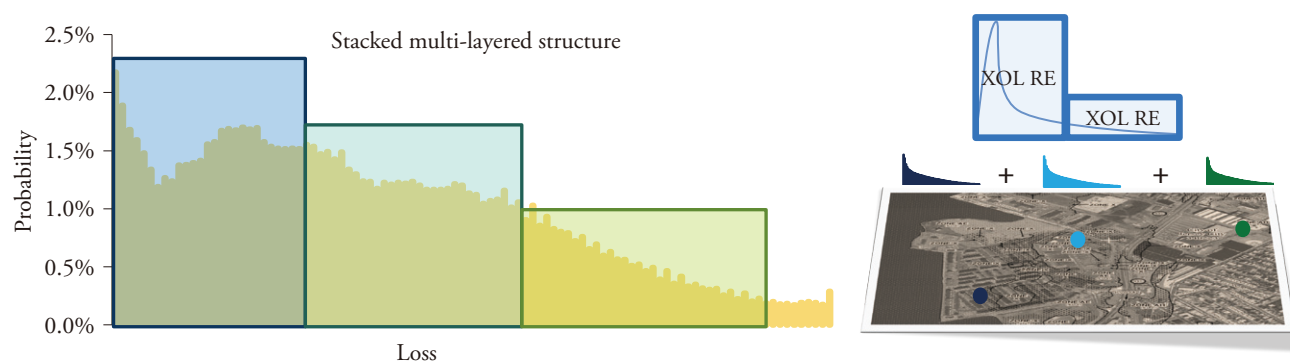
Figure 8: Change in EP Values for Insured Loss by the Assumption on Earthquake Occurrence Rate around the Nankai Trough



6. Modeling of Market Complexity and Uncertainty

One of the critical components of a CAT model is the financial module, which computes insured loss from the ground up loss, considering all policy terms and conditions as well as all accountable uncertainties, dependencies, and correlations. The financial model has advanced significantly to resolve market demand for modeling market complexity and uncertainties. Such complexity is found in commercial and excess lines, typically multi-layered with nested reinsurance placed on individual risks. In addition, multi-location policies, including risks spatially close together, make the modeling of dependencies in loss accumulation of critical importance. Quantifying and propagating uncertainty through the modeling components is a nontrivial endeavor. New algorithms for loss aggregation have been implemented that explicitly capture peril-dependent spatial correlations and the correlation between coverages. (Figure 9)

Figure 9: Consideration of Stacked Multi-Layered Structure and Spatial Correlations among Locations



The resulting loss uncertainty distribution realistically reflects what we've learned across many years of actual claims data, loss data, and observations following catastrophic events. With the new financial model, every member of the risk value chain can have confidence in the pricing and transfer of risk.

The importance of modeling losses from secondary perils, or sub-perils, is growing in the industry as insurance policy coverage for them is becoming more comprehensive and more explicit. To accurately evaluate risks, it is necessary to model policy layers and sub-limits for each individually covered sub-peril and for the combined peril loss of all risks in the contract. The financial model allows us to place terms and conditions specifically by sub-peril, considering the propagation of secondary uncertainty distribution of loss for each individual sub-peril. This provides the flexibility to accurately reflect any combination of peril and contract coverage; for example, sub-limits for storm surge or precipitation-induced flooding in a policy that covers wind and water. (Figure 10)

Another key aspect is the proper treatment for the vertical tiering and nesting of the insurance components of the commercial contract. In decision making for insurance risk management and underwriting, it is necessary to group risks by class

and by geography and to sublimit them such that the modeling process and loss outcomes meet both the underwriting requirements of the insurers as well as the demands of the insured. The new financial model enhances flexibility and capabilities to transform risk accumulations by geography, by insurance coverage, or by sub-peril, to realistically render the intricacies of large commercial and corporate insurance contracts. (Figure 11)

Figure 10: Sub-Limits by Sub-Peril for Geographical and Risk Class Accumulations

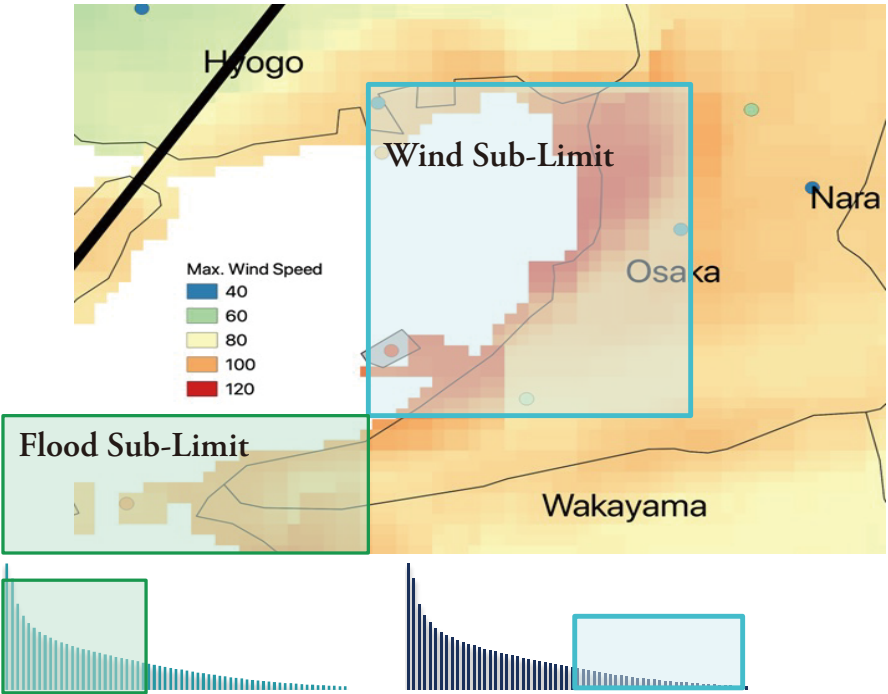
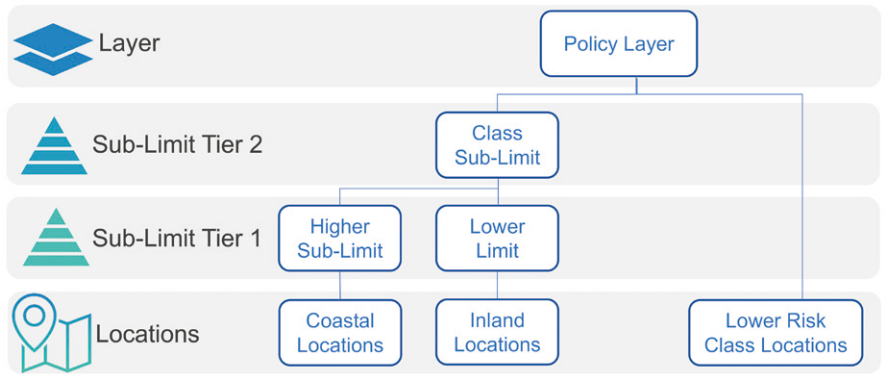


Figure 11: Support for Multiple Tiers of Sub-Limits for the Complex and Stacked Structure



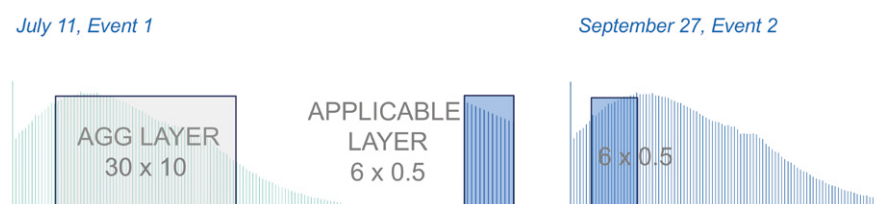


With this feature, the risks that reside within tiered sub-limits can be modeled, accounting for the loss aggregation process. One such example is risks that are subject to a Yokohama earthquake sub-limit, as well as a Kanagawa-wide earthquake sub-limit. With these enhanced capabilities, underwriters for large complex accounts can offer terms that meet their clients' needs while feeling confident that the risk is priced adequately.

Whereas per occurrence reinsurance used to be the norm, over the last decade there has been an increasing trend toward aggregate reinsurance programs. Aggregate policies in their many forms are a traditional market instrument; they can cover insurance losses from a single location as well as accumulated losses from groups of many locations in large commercial contracts. In both cases the aggregate limit protects the insurer from the accumulation of claims and losses from multiple catastrophe events in the contract year. By the same token, the aggregate deductible protects the insured from the accumulation of retained losses in the case of multiple events and claims in the same contracted year. The new financial model provides the ability to structure policies with annual aggregate terms. (Figure 12)

Combined with expanded support for a wider range of reinsurance terms, annual aggregate pre-risk terms and multi-layered structures provide the tools to make more informed business decisions for pricing reinsurance. The transformation of insured gross loss as it passes through multiple tiers of reinsurance contracts is a good illustration of complexity in catastrophe modeling.

Figure 12: Support for Annual Aggregate Policy Terms



7. Closing Remarks

Catastrophe modeling has been crucial in the insurance year through its 30-year history. Models for Japan have improved significantly with advances and can evaluate risks from all sub-perils—ground shaking, fire following earthquakes, and tsunamis for earthquake and tropical cyclone wind, storm surge, and precipitation-induced flooding for typhoons. In addition to the advancements to the peril model, the financial model has become more sophisticated. The latest financial model can consider the propagation of uncertainties in the risk aggregation process from each risk to layers and then contract with accuracy. With these advancements, (re)insurance companies can make better-informed decisions in line with their own risk tolerance to address the protection gap that leaves communities with a heavy financial burden in the aftermath of a catastrophe.

Trends in Japan's Non-Life Insurance Industry

3

Non-Life Underwriting & Planning Department 1

Non-Life Underwriting & Planning Department 2

The Toa Reinsurance Company, Limited

1. Overview of the Non-Life Insurance Industry

(1) Status of Non-Life Insurance Companies, Cooperatives and SASTI

As of November 1, 2023, a total of 55 general insurance companies were operating in Japan. A total of 33 companies were licensed as domestic insurers, including foreign capital domestic insurers, while 22 companies were licensed as foreign insurers.¹

Japan began liberalizing its insurance industry with the financial big bang in 1996. Its non-life insurance companies have increased operating efficiency since then while conducting mergers and business integrations in stages. As a result, the non-life insurance market has become an oligopoly comprising the three largest non-life insurance groups (in alphabetical order: MS&AD Insurance Group Holdings, Inc., Sampo Holdings, Inc. and Tokio Marine Holdings, Inc.). Based on the statistics released by the General Insurance Association of Japan (GIAJ) and the fiscal 2023 financial results disclosed by these groups, we calculate that these three group companies account for more than 86% of net premium income written by the 29 GIAJ members, totaling 9,132 billion yen.^{2,3,4,5}

The market also includes cooperative and mutual insurance companies (referred to as “Kyosai Organizations”), which offer fire, life, personal accident, automobile and annuity products. Kyosai is a mutual aid system where the members share their premium to establish mutual assets, and the funds are paid out at times of unexpected contingencies to compensate for the financial deficit and stabilize the lives of the members and their families. The main Kyosai Organizations that make up the Japan Cooperative Insurance Association Incorporated had premium income of about 2.1 trillion yen in fiscal 2022 in total of fire, personal accident and automobile kyosai products (excluding life and annuity kyosai products) according to our calculation.⁶

In another development, the Small Amount and Short Term Insurance (“SASTI”) business was introduced in Japan following an amendment to the Insurance Business Act in April 2006. SASTI companies, which are limited to selling insurance products in small amounts with limited terms, provide non-life and/or life insurance products. In fact, regulations make it much easier for SASTI companies to enter the insurance business than is the case of establishing a new insurance company. For example, SASTI companies need only to register and need not be licensed by the Financial Services Agency to operate. The minimum capital required is 10 million yen, compared to 1 billion yen for an insurance company, and they may sell both life and non-life insurance products. The number of member companies of The Small Amount and Short Term Insurance Association of Japan continues to grow and the scale of the market continues to expand. Non-life insurance products sold in this market are mainly renters insurance, including fire insurance for the home contents of renters and rental housing liability insurance sold through the real estate agent channel, recent strong-seller pet insurance, and pecuniary insurance. Some SASTI companies have grown to the extent that they may choose to get a license to operate as an insurance company, while some existing non-life insurance companies have newly established SASTI companies.



The Small Amount and Short Term Insurance Market Data

Figure 1: Member Companies

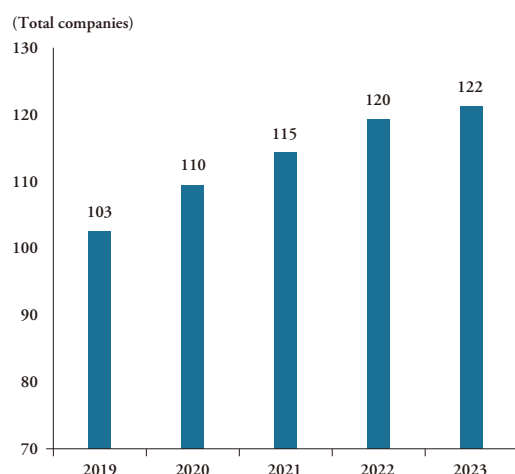
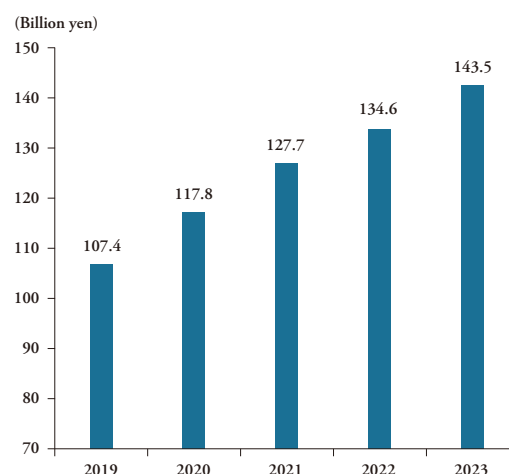


Figure 2: Premium Income



Source: The Small Amount and Short Term Insurance Association of Japan⁷

(2) Trends in Business Results of Non-Life Insurance Companies for Fiscal 2023²

The following is a summary of the main financial results (total) of the 29 GIAJ members in fiscal 2023.

Net premium income in all lines of business increased by 12 billion yen from the previous fiscal year to 9,132 billion yen, mainly due to automobile class with revisions of insurance premium rates.

Net claims paid decreased by 53 billion yen to 5,330 billion yen because of decreases in fire claims for natural disasters in spite of increases in automobile claims as road traffic recovered. As a result, the loss ratio decreased by 0.6 percentage points to 64.3%.

Expenses increased by 4 billion yen to 2,979 billion yen, while the net expense ratio was unchanged at 32.6% owing to the increase in net premium income.

Underwriting profit increased by 63 billion yen to 177 billion yen.

Ordinary profit, calculated as the sum of underwriting profit and investment profit, increased by 281 billion yen to 1,047 billion yen. After deducting tax expense, net income also increased by 394 billion yen to 896 billion yen.

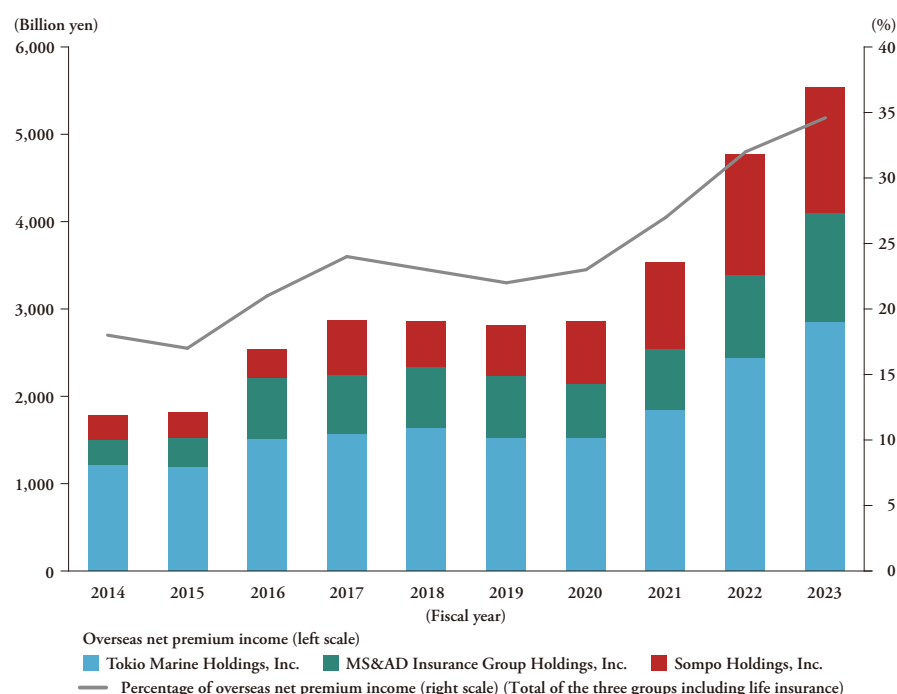
(3) Overseas Business Developments of the Three Largest Non-Life Insurance Groups

The three largest non-life insurance groups have all positioned overseas business as a growth driver, and have aggressively implemented initiatives such as forming business alliances with foreign insurance companies and engaging in M&A.

Figure 3 shows overseas net premium income* for the three largest non-life insurance groups which we calculate based on their released information. Their net premium income from overseas business in fiscal 2023* was about 3 times that of fiscal 2014, and overseas business accounted for approximately 35% of their net premium income.

* In this section, “overseas net premium income” includes both non-life and life insurance premiums.

Figure 3: Trends in Overseas Net Premium Income for the Three Largest Non-Life Insurance Groups^{3,4,5}



The three groups' global business developments and/or restructuring in the non-life insurance segment in recent years are as follows:

Mitsui Sumitomo Insurance Company, Limited, a subsidiary of MS&AD Insurance Group Holdings, Inc., acquired Transverse Insurance Group, LLC in 2023 seeking to expand its business in the U.S. In addition, they announced in 2023 that its subsidiary MSIG Insurance (Lao) Co., Ltd. and Sokxay Insurance Sole Company Limited (“SIC”), a subsidiary non-life insurance company of Sokxay Group, were merged to establish MSIG Sokxay Insurance Co., Ltd.^{8,9}

Sompo Holdings, Inc. announced in 2021 that its wholly owned subsidiary Sompo International Holdings Ltd. would acquire Italian crop insurance company ARA 1857 S.p.A. In addition, they announced in 2023 that Sompo Seguros S.A., its Brazilian subsidiary, completed the transfer of all assets and liabilities related to the



consumer business to Sampo Consumer Seguradora S.A., a new insurance subsidiary of Sampo Seguros.^{10,11}

In 2021, Tokio Marine Holdings, Inc.'s subsidiary in Brazil, Tokio Marine Seguradora S.A. and Caixa Seguridade Participações S.A., an insurance holding subsidiary of Caixa Econômica Federal, a Brazilian state-owned bank, established a joint venture to underwrite mortgage and homeowners insurance. In addition, Tokio Marine Holdings, Inc. announced in 2024 that it had completed the sale of Tokio Marine Pacific Insurance Limited, its subsidiary in Guam, the U.S. and the sale of all of its shares in Arabian Shield Cooperative Insurance Company, a life and non-life insurance company in Saudi Arabia.^{12,13,14}

With a focus on life and non-life insurance, on the other hand, the three groups are expanding and strengthening an array of various areas based on synergies with insurance products and promotion of insurtech, including financial services, risk solutions and services, nursing and senior care, healthcare, and digital. They are enhancing alliances and investments in a variety of overseas companies including artificial intelligence startups and insurtech companies.

(4) Claim Payment for Natural Disasters

Japan is exposed to natural disasters such as typhoons and earthquakes, and in various ways non-life insurance products and their related services support those who suffer losses from natural disasters.

Largest Claims Paid for Typhoons and Windstorms in Japan
(Updated March 2022 by GIAJ)¹⁵

	Name of Disaster	Date	Total amount of claim payments (in billions of yen)
1	Typhoon No. 21 (Typhoon Jebi)	Sep. 3-5, 2018	1,067.8
2	Typhoon No. 19 (Typhoon Hagibis)	Oct. 6-13, 2019	582.6
3	Typhoon No. 19 (Typhoon Mireille)	Sep. 26-28, 1991	568.0
4	Typhoon No. 15 (Typhoon Faxai)	Sep. 5-10, 2019	465.6
5	Typhoon No. 18 (Typhoon Songda)	Sep. 4-8, 2004	387.4

GIAJ released the figures for claims paid on dwelling risks for the 2024 Noto Peninsula Earthquake (occurred on January 1, 2024) in total of 91.0 billion yen as of May 31, 2024, which ranks as the 6th largest among claims related to domestic earthquakes in history.¹⁶

Largest Claims Paid for Earthquake Insurance on Dwelling Risks
(As of March 31 2023)¹⁷

	Earthquake (Region Name)	Date of Occurrence	Total amount of claim payments (in billions of yen)
1	The 2011 off the Pacific coast of Tohoku	Mar. 11, 2011	1,289.4
2	The 2016 Kumamoto	Apr. 14, 2016	390.9
3	Fukushima-ken-oki	Mar. 16, 2022	265.4
4	Fukushima-ken-oki	Feb. 13, 2021	250.9
5	The 2018 Northern Osaka	Jun. 18, 2018	124.8

2. Topics of the Non-Life Insurance Market

(1) Trends in the Fire Insurance Market

Due to the fact that fire insurance business results in Japan have deteriorated by major natural disasters and so on, the Reference Loss Cost Rates (advisory pure premium rates) for fire insurance, as calculated by General Insurance Rating Organization of Japan (GIROJ), has been raised four times since 2018. Non-life primary insurance companies have revised their premium rates in response to the Reference Loss Cost Rates revisions, and have also consistently phased in tighter terms and conditions (besides those related to premium rates) such as shortening the maximum policy period for fire insurance to five years from ten years, increasing deductibles, and setting limits of liability, in order to improve fire insurance results.

** Under the Act on Non-Life Insurance Rating Organizations, GIROJ calculates Reference Loss Cost Rates (for voluntary automobile insurance, fire insurance, personal accident insurance, and so on), which are pure premium rates, and Standard Full Rates (for compulsory automobile liability insurance and earthquake insurance), which consist of pure premium rates and expense loading, based on insurance statistics from the data reported by its member insurance companies. GIROJ provides them to its member insurance companies as advisory rates.¹⁸

Outline of Announcements by GIROJ	
July 2018 ¹⁹	Reference Loss Cost Rates for Homeowners' Comprehensive Insurance increase by 5.5% on average. Background of revision: Increase in claims related to natural disasters and water damage from plumbing
December 2019 ²⁰	Reference Loss Cost Rates of Homeowners' Comprehensive Insurance increase by an average of 4.9% with discounts for relatively new dwellings. Background of revision: Increase in claims related to natural disasters and reflection of risk differentials by building age
July 2021 ²¹	Reference Loss Cost Rates of Homeowners' Comprehensive Insurance increase by an average of 10.9 %. Key background factors for revision: Increase in natural hazard risk and reflection of risk trend
September 2023 ²²	Reference Loss Cost Rates for Homeowners' Comprehensive Insurance are to increase by an average of 13.0 % with segmentalization of Premium Rates for water disasters into five categories according to the regional risks. Key background factors for revision: <ul style="list-style-type: none"> • Increase in the amount of claims by natural disasters and significant change of the risk environment • To ensure the fairness among policyholders in terms of the burden of water disaster premium rates

*** In case where each insurance company chooses to reflect the revision of the Reference Loss Cost Rates in their fire insurance products, it may take 1 year or more from the date of the GIROJ announcement.

(2) Reinsurance Renewals in 2024

Most reinsurance contracts of domestic non-life insurance companies, including cooperatives and SASTI companies, are renewed at the start of their fiscal year, generally April 1.

Having turned from the hardening trend of recent years, the April Reinsurance renewals for 2024 in Japan were orderly and in general proceeded with stable terms and conditions. This is because increases in premium rates and tightening of reinsurance conditions had been effected in previous years. Additionally, the improvement in the supply-demand balance of reinsurance capacity, influenced by the recovery of reinsurers' capital strength due to improved business performance, and by the depreciation of the Japanese yen, as well as limited insurance losses in 2023 from natural disasters such as typhoons, also affected the renewal negotiations.

As a whole, the range of premium rates was close to flat or even slightly lower for some lines of business. In specific business lines such as liability, further improvements in the terms and conditions were requested owing to reinsurers' concerns about U.S. exposure.

(3) Acceleration of Digital Transformation

Major insurers and others have rapidly accelerated digital transformation using various digital technologies premised on 'zero contact.' The following are examples:

- The introduction of various mechanisms and tools that enable remote and paperless customer interactions including insurance consultations, contract application and loss reporting, along with insurance premium and claims settlement.
- The application of AI techniques for customer communications, risk assessment, claim surveying, disaster prediction and mitigation, as well as for various new products and services.

(4) Trends in Regulation by Regulatory Agencies

Over the several years, the Japanese Financial Services Agency (JFSA) has been identifying the financial, economic, and global situations and has also been conducting in-depth monitoring of financial institutions through data analysis and dialogue with them in order for financial institutions to perform their financial intermediary functions sufficiently while maintaining their soundness even as the environment surrounding them is changing.

As for insurance companies, the JFSA has stated that if policyholder protection has been found to be deficient, they would take strict actions based on laws and regulations, and it would also develop and implement effective measures to prevent the recurrence of similar cases of misconduct.

Because of the increase in insurance money payments amid the increasing frequency and severity of natural disasters in recent years, property insurance premium rates have followed an uptrend. In this situation, in order to ensure that non-life insurance companies more appropriately exercise the function of guarding against natural disasters, the JFSA encourages non-life insurance companies to develop more advanced enterprise risk management (ERM), review and revise the insurance coverage and premium rates in consideration of customers' needs and the risk situation, and provide services useful for disaster risk reduction.²³

The JFSA has been conducting studies to introduce the new economic value-based solvency regulation in FY2025, in parallel with the introduction of the Insurance Capital Standard (ICS) by the International Association of Insurance Supervisors (IAIS). In preparation for the introduction of an economic value-based solvency regulation, the JFSA published "Direction of remaining issues on economic value-based solvency regulation" in May 2024.²⁴



The JFSA has noted that introducing the economic value-based solvency ratio into the regulatory regime may bring unexpected consequences, such as excessively risk-averse behavior among insurance companies. Therefore, it is investigating unintended consequences and international trends while continuing its examination and preparation with emphasis on dialogue with relevant parties for a smooth transition to the new regime.

(5) ESG and SDGs Initiatives

Japan is among the countries promoting ESG and SDGs. Led by major insurers, various companies are proceeding with implementation of a broad array of studies and initiatives in areas including asset management, personnel systems, corporate governance, compliance and social contribution, in addition to improving insurance products and services.

The three largest non-life insurance groups have established sustainability committees, and have officially incorporated the ESG framework into the decision-making process for insurance operations and investment. They regularly publish the sustainability reports. In addition, they are addressing the greater frequency and intensity of natural disasters as a result of climate change by cooperating more closely with other industries, local governments and other organizations in disaster mitigation initiatives ranging from disaster prevention to repair cost reduction. The three groups are also enhancing insurance products that facilitate and support renewable energy development.

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https://www.fsa.go.jp/policy/economic_value-based_solvency/07_1.pdf

4 Trends in Japan's Life Insurance Industry

Life Planning Department

The Toa Reinsurance Company, Limited

1. Overview of Business Results for Fiscal 2023

During the fiscal year ended March 31, 2024 (fiscal 2023), premium income and other revenues of Japan's 42 life insurance companies increased by 13.0% year on year to 43.0 trillion yen, due largely to an increase in sales of yen-denominated single-payment products as interest rates in Japan entered a rising phase.

Due to a decrease in hospitalization benefit payments and other payments related to the COVID-19 pandemic, which had a significant impact on performance in the previous fiscal year, ordinary profits increased 26.6% year on year to 3.2 trillion yen, and basic profits,* which represent profits from core businesses, increased 41.5% year on year to 3.9 trillion yen.

Business performance has improved because of a number of factors including reduced hospitalization benefit payments related to COVID-19 and rising interest rates in Japan. Life insurance companies are demonstrating a clear commitment to returning the increased profits to policyholders, with some companies announcing increases in policyholder dividends and dividends to shareholders.

* Basic profits are calculated by deducting capital gain/loss and extraordinary gain/loss from ordinary profits.

2. Impact of COVID-19 and Relevant Initiatives of Life Insurance Companies

The COVID-19 pandemic began wreaking havoc in 2020. While the number of infected people has declined and the situation has basically returned to normal, COVID-19 has had a significant impact on society and the economy. This unprecedented pandemic affected Japan's life insurance industry in various ways.

The life insurance industry responded to societal needs by extending the grace period for premium payments, reducing interest on new loans to policyholders, and expanding the scope of payments related to COVID-19. Specifically, insurance companies applied special measures so that "accidental death benefits" and "deemed hospitalization benefits*" that had been ineligible for benefit payments under the policy clause became eligible for payment. As a result, benefit payments related to COVID-19 totaled approximately 1,314.4 billion yen as of September 30, 2023. Benefit payments

Benefit Payments Related to COVID-19*					
	Death benefits		Hospitalization benefits		Total
		Of which, accidental death benefits		Of which, deemed hospitalization benefits	
Total number of cases	61,848 cases	31,082 cases	Approx. 11.30 million cases	Approx. 10.88 million cases	Approx. 11.36 million cases
Total amount paid	Approx. 306.7 billion yen	Approx. 69.6 billion yen	Approx. 1,007.7 billion yen	Approx. 959.8 billion yen	Approx. 1,314.4 billion yen

* As of September 30, 2023



resulting from special measures amounted to approximately 1,029.4 billion yen, accounting for nearly 80% of the total benefit payments related to COVID-19. This large total was unprecedented given that benefit payments by the life insurance industry associated with the Great East Japan Earthquake totaled approximately 159.9 billion yen. Of note, “deemed hospitalization” and the various other special measures that were introduced in response to COVID-19 ended on May 8, 2023.

These rapid and flexible initiatives by the life insurance industry showed that insurance companies have been fulfilling their expected societal role of contributing to social stability.

On the other hand, COVID-19 has highlighted the challenges facing the life insurance industry. Although life insurance sales channels in Japan have become more diverse, face-to-face sales by sales representatives remain the largest channel. As a result, sales of new policies decreased significantly at the beginning of the pandemic because life insurance companies were forced to restrict face-to-face sales in order to prevent the spread of infection. The slow pace of digitalization, which has been an issue for Japanese society as a whole, also affected the life insurance industry during the COVID-19 pandemic.

In addition, customers expressed dissatisfaction with the confusion that arose when some new products developed in response to the COVID-19 pandemic were quickly discontinued because the sharp increase in “deemed hospitalization benefits” had a significant negative impact on business performance. Other commentary suggested that products designed to pay benefits to people after contracting COVID-19 may in fact have contributed to the spread of the disease (as people may have been complacent knowing that they could receive insurance benefits), which resulted in the strain on hospitals.

The COVID-19 pandemic was an unprecedented event, and the insurance industry must use the lessons learned from this experience to prepare for future disturbances that may occur if an unforeseen event like the COVID-19 outbreak occurs again.

* Hospitalization benefit paid to COVID-19-positive people who received certification for self-care at home or at a hotel instead of at a hospital, based on a doctor's diagnosis. This measure was implemented in response to a shortage of hospital beds due to an increase in the number of people infected with COVID-19.

3. Increased Activity in the Group Credit Life Insurance Market

Competition is intensifying among insurance companies involved in group credit life insurance in Japan. Group credit life insurance reduces the balance of a loan to zero if the policyholder dies or becomes severely disabled while repaying the loan. In Japan, people taking on large loans for purchases such as housing are often required to take out group credit life insurance. Intensifying competition is backed by more aggressive initiatives among both banks that sell group credit life insurance and insurance companies that underwrite group credit insurance. Banks are enhancing initiatives to differentiate the features of group credit life insurance, as their ability to compete by reducing mortgage interest rates has reached its limit. Meanwhile, insurance companies, especially life insurance companies just entering

the market, are enhancing initiatives to position group credit life insurance as a product that will generate stable earnings over the medium-to-long term.

Banks often require group credit life insurance when structuring loans, so sales at bank counters are a primary channel for acquiring customers. Insurance companies have conventionally strengthened their relationships with banks in ways such as collaborating with banks within their corporate groups and attracting local banks by offering sales incentives. Now, insurance companies are promoting more flexible insurance policies, raising upper limits on the amount of assurance that an applicant can apply for with declaration (non-medical), and providing additional services to further strengthen their relationships with banks and to address banks' need to differentiate themselves through group credit life insurance.

In offering more flexible insurance policies, including raising upper limits on application without medical examinations, insurance companies are underwriting customers with products that are better suited to their lifestyles, including products featuring broad coverage for customers not eligible for group credit life insurance through normal declaration procedures due to their health condition, as well as joint group credit life insurance policies for couples that exempt one partner from loan repayments if the other partner dies or becomes severely disabled. Another reason that companies are raising upper limits on application without medical examinations is to address the pronounced increase in housing prices.

Specific examples of additional services include a supplementary living benefit that guarantees a portion of the loan balance if the policyholder contracts cancer or another major illness, but does not incur additional interest or, from the policyholder's perspective, additional premiums. Extending repayment periods is another option that is attractive to young customers because longer repayment periods reduce premium installment payments with guaranteed repayment periods of up to 50 years. Additional services that go beyond insurance policies themselves are also now being offered. Examples include the creation of specialized agencies staffed by mortgage loan experts who provide financial planning and consulting services, health consultation services over the phone available 24 hours a day, and services that provide second opinions through interviews with general practitioners.

Targeting group credit life insurance portfolio growth, insurance companies are increasing products and services based on bank and market needs to enhance their relationships with banks. Competition among insurers is therefore expected to continue in the future.



4. Life Insurance Product Trends in a Higher Interest Rate Environment

The Bank of Japan (BOJ; Japan's central bank) controls yields mainly through large-scale Japanese government bond purchases. In December 2022, the BOJ raised the long-term yield cap from the previous 0.25% to 0.50% with the goal of improving market functions, and in October 2023 set the upper limit for yield curve control at 1.0%. In addition, in March 2024 the BOJ lifted its long-term negative interest rate policy and ended yield curve control, which had been designed to keep long-term interest rates low. These policy reviews by the BOJ are affecting life insurance companies.

Sales of single-premium products denominated in foreign currencies (regardless of the currency in which payments are made) have been increasing since around 2022 in response to rising interest rates overseas. In 2023, however, sales of yen-denominated single-premium savings insurance increased as Japanese interest rates also began to rise. From April to December 2023, sales of these insurance products among nine life insurance companies in Japan that handle such products doubled compared to the same period a year earlier to approximately 2.92 trillion yen.

Amid strong sales of savings products, life insurance companies have raised their assumed interest rates in succession. Sumitomo Life raised its assumed interest rate for savings insurance from 0.9% to 1.0% in November 2023. Nippon Life then raised its assumed interest rate for single-premium whole life insurance from 0.6% to 1.0% in January 2024, and Meiji Yasuda Life raised its assumed interest rate for single-premium whole life insurance from 0.94% to 1.10% in May 2024. Raising assumed interest rates will reduce the insurance premiums paid by policyholders and therefore are projected to support increased product sales. At the same time, however, raising assumed interest rates is also expected to intensify savings product sales competition among insurance companies.

Sales of savings products have been brisk, but sales of protection products such as life and health insurance have been slower. Selling protection products requires careful explanation of future risks to stimulate need of customers. However, COVID-19 limited face-to-face sales and the opportunities to provide such explanations, which was a factor slowing sales. In addition, protection products are effective for preparing for risks, but are less appealing as investments. Market interest rates have risen and the introduction and expansion of the Nippon Individual Savings Account (NISA) program for tax-exempt small investments by individuals has led to greater interest in asset management among individuals. Thus, the fading appeal of protection products is another factor contributing to weaker sales.

Protection products are more profitable than savings products and will be an important source of future profitability for life insurance companies. However, the business environment is expected to remain challenging for sales of protection products because the Nikkei average has risen to its highest levels since the late 1980s and early 1990s, and interest in asset management is expected to grow further, including the transfer of assets overseas due to the ongoing weakness of the yen. Life insurance company initiatives to stimulate demand for protection insurance under these circumstances are therefore of interest.

5. Life Insurance Company Objectives in Entering Non-Insurance Markets

Japan's insurance market is expected to shrink due to a declining population, so life insurance companies are accelerating their expansion into non-insurance markets.

In November 2023, Nippon Life acquired Nichii Holdings, which owns Nichii Gakkan, the largest nursing care company in Japan. In March 2024, Dai-ichi Life announced that it would acquire Benefit One, a comprehensive employee benefit service company that provides corporate employee benefit services, health support, and education and training support, through a tender offer.

The accelerating decline in the birthrate and the aging population in Japan, along with the expected contraction of the insurance market in the future, are encouraging insurance companies to enter non-insurance markets to secure new sources of revenue outside of their core insurance business. Also, it seems that another objective is to strengthen sales of insurance products by leveraging the services offered by companies in non-insurance markets.

Nippon Life will be able to leverage Nichii's nursing care business services to provide added value to its policyholders in ways such as introducing nursing care services and care managers. Nippon Life therefore expects to strengthen its insurance sales with its expanded service offerings. Meanwhile, Dai-ichi Life has been providing a benefits package to its corporate customers, which includes offering services to the corporate customers' employees through a health app as a component of customer service, and aims to promote insurance sales by expanding its service offerings using the know-how that Benefit One has cultivated.

In Japan, environmental changes such as aging and population decline are accompanied by the growing diversity of customer needs, which presents challenges for addressing customer risks and needs with traditional insurance products and services alone. Given the increasing importance of providing value and service in more ways to meet customer needs, the acquisitions by Nippon Life and Dai-ichi Life will be a test of whether this trend will accelerate. The post-acquisition initiatives of both companies will therefore be a focus of attention.

Company Overview

Profile

The Toa Reinsurance Company, Limited (Toa Re), was established in 1940. With the reinsurance market evolving and clients' needs expanding, we have recognized the importance of being able to provide a diverse line of life and non-life reinsurance products to lead the market as Japan's primary professional reinsurer. Toa Re is based in Tokyo with subsidiaries in New Jersey (U.S.A.) and Zürich (Switzerland). Increasing demand for reinsurance products in Asian countries prompted us to expand our operations in those regions and establish branch offices in Singapore, Kuala Lumpur and Hong Kong.

In acknowledgment of Toa Re's outstanding financial profile, credit rating agencies, Standard & Poor's Financial Services LLC, A.M. Best Company, Inc. and Japan Credit Rating Agency, Ltd., have assigned Toa Re ratings of A, A and AA+, respectively. As of March 31, 2024, the Toa Re Group boasted total assets of 1,021.4 billion yen. Net premiums written during the fiscal year ended March 31, 2024, totaled 280.8 billion yen.

Mission Statement



ToaRe Mission Statement

Providing Peace of Mind

Toa Re aims to realize its mission by

working with society and applying the principles of fairness and integrity to all aspects of our business

offering long-term, solid support to our clients by supplying reinsurance products and services that enable them to maintain stable operations

striving to enhance our corporate value for the interests of our shareholders through open and transparent corporate management

respecting the creativity of our group employees and valuing their contributions

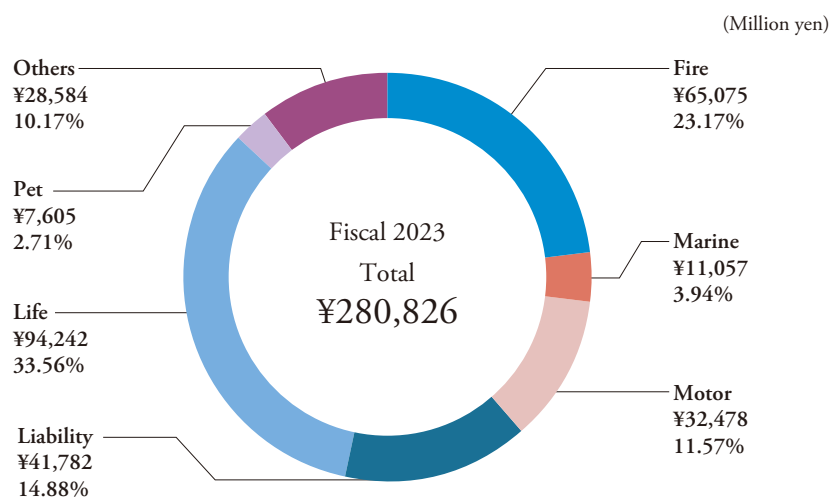
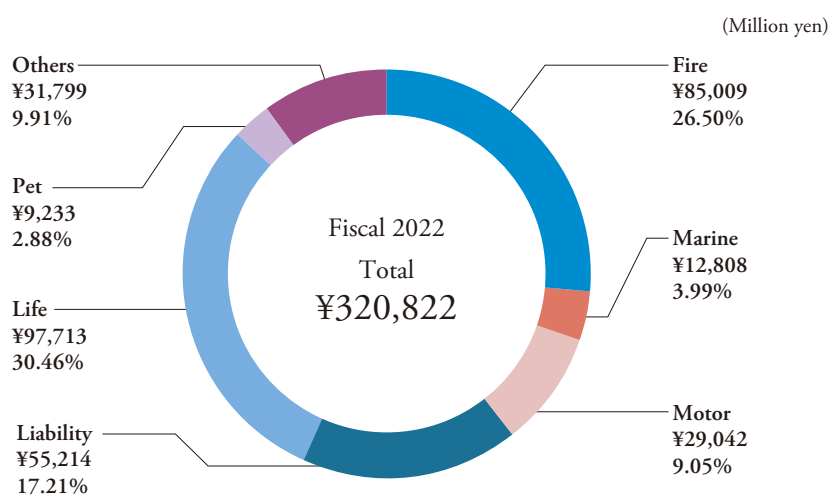
conserving the environment and contributing to a sustainable society

Consolidated Financial Highlights

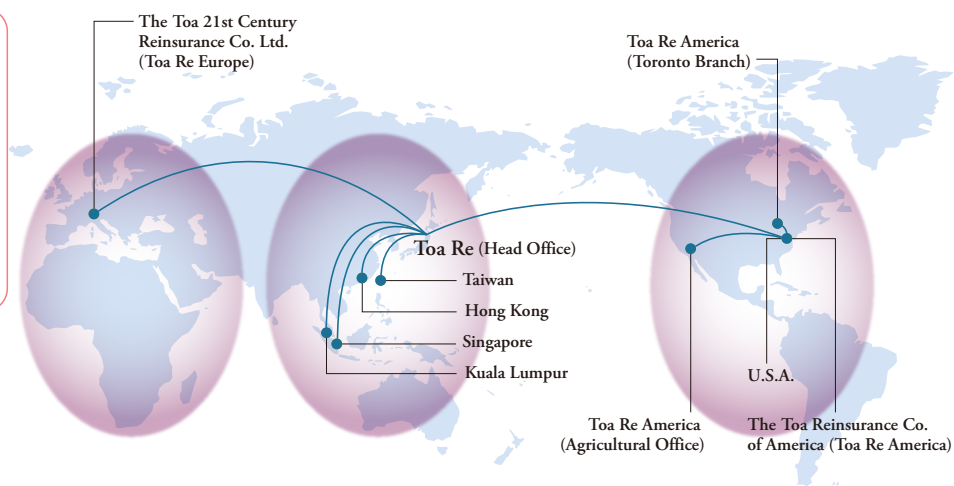
	Million yen					Thousand U.S. dollars
	2024	2023	2022	2021	2020	2024
For the year ended March 31						
Ordinary income	¥329,071	¥349,337	¥329,804	¥312,101	¥297,757	\$2,173,376
Net premiums written	280,826	320,822	302,024	287,547	270,252	1,854,738
Ordinary profit (loss)	21,197	3,238	827	2,164	88	139,997
Net income (loss) attributable to owners of the parent	15,556	2,450	(1,248)	2,745	(2,141)	102,740
As of March 31						
Total net assets	289,658	196,303	201,307	182,257	167,141	1,913,070
Total assets	1,021,441	905,749	860,421	772,108	711,690	6,746,192

(Rate: ¥151.41 = US\$1)

Net Premiums Written by Class (Consolidated Basis)



Overseas Network



Locations

Branches

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Providing Peace of Mind

The Toa Re Group is a global composite reinsurer that provides peace of mind to its clients by protecting them from a broad range of perils such as catastrophic earthquakes and typhoons, casualty events, crop damage, mortality and health care.

We at the Toa Re Group aim to be chosen by clients from across the world because of our ability to offer a secure long-term partnership of optimal solutions and strong financial security.

