

Japan's Insurance Market 2015



Japan's Insurance Market 2015

Contents	Page
To Our Clients	
Tomoatsu Noguchi President and Chief Executive, The Toa Reinsurance Company, Limited	1
1. The Earthquake Insurance System and Japan Earthquake Reinsurance Co., Ltd.	
Masamichi Irie President Japan Earthquake Reinsurance Co., Ltd.	2
2. General Concepts Applied to a Proprietary View of Risk	
Oriol Gaspa Rebull Catastrophe Management, Aon Benfield John Moore Head of International Analytics, Aon Benfield	10
3. Preparing for a Japan Typhoon Megadisaster	
Milan Simic, Ph.D., SVP Managing Director of International Operations, AIR Worldwide Ruilong Li, Ph.D. Senior Engineer, AIR Worldwide	19
4. Recent Developments in Enterprise Risk Management among Japanese Insurance Companies	
Nobuyoshi Yamori Professor, Research Institute for Economics and Business Administration Kobe University	25
5. Trends in Japan's Non-Life Insurance Industry	
Underwriting & Planning Department The Toa Reinsurance Company, Limited	29
6. Trends in Japan's Life Insurance Industry	
Life Underwriting & Planning Department The Toa Reinsurance Company, Limited	34
Supplemental Data: Results of Japanese Major Non-Life Insurance Groups (Company) for Fiscal 2014, Ended March 31, 2015 (Non-Consolidated Basis)	40

To Our Clients

It gives me great pleasure to have the opportunity to welcome you to our brochure, *Japan's Insurance Market 2015*. It is encouraging to know that over the years our brochures 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.

During fiscal 2014, the year ended March 31, 2015, the Japanese economy remained on a moderate recovery track. Although the consumption tax increase weakened personal consumption somewhat, capital investment trended upward, reflecting an improvement in corporate earnings.

In the non-life insurance industry in Japan, net premium income and profit trended upward mainly owing to strong sales of fire insurance policies and new types of insurance policies, while also benefiting from the revision of insurance premium rates and insurance products for automotive insurance.

In the life insurance industry in Japan, net premium income trended upward supported by buoyant sales of savings-type insurance products and medical insurance policies.

In the reinsurance market, owing to the large amount of capital flowing from financial markets into the reinsurance market and the brisk performance of reinsurance companies, reinsurance premium rates further softened and competition for contracts intensified among reinsurers.

In these circumstances, in accordance with the Forward 2014 medium-term management plan launched in 2012, the Toa Re Group implemented initiatives to realize the corporate vision articulated in the plan. Utilizing sophisticated expertise and intelligence, we provide peace of mind with high-quality solutions and services with the goal of being a growing, profitable global reinsurance group trusted by all stakeholders.

By endeavoring to act as an exemplary reinsurance company, we are resolved to fulfill our mission: "Providing Peace of Mind."

In conclusion, I hope that our brochure will 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.



Tomoatsu Noguchi

President and Chief Executive
The Toa Reinsurance Company, Limited



The Earthquake Insurance System and Japan Earthquake Reinsurance Co., Ltd.

1.

Masamichi Irie

President
Japan Earthquake Reinsurance Co., Ltd.

Foreword

Japan's land area is only 0.25% of Earth's total land area, but 20.8% of earthquakes of magnitude 6.0 or greater worldwide have occurred in Japan, and 27,271 earthquakes have occurred in Japan over the 10 years since 2005. Japan is located on the boundary between an oceanic plate and a continental plate. The oceanic plate moves beneath the continental plate at a rate of several centimeters per year, which causes large subduction earthquakes and inland earthquakes due to plate movement. Moreover, Japan is located in the Ring of Fire and has about 7% of the world's active volcanoes. Japan is therefore prone to earthquakes.

Japan Earthquake Reinsurance Co., Ltd. (JER) is the only reinsurance company in Japan that exclusively handles earthquake insurance, and will celebrate its 50th anniversary next year. I would therefore like to provide an overview of our position in Japan's earthquake insurance system and discuss JER's preparation for major earthquakes.

1. Earthquake Insurance System in Japan

(1) Specifics and Features of Earthquake Insurance

Insured risk:

Loss or damage due to fire, destruction, burial or flooding caused directly or indirectly by any earthquake or volcanic eruption, or resulting tsunami (earthquake, etc.)

Insured interests:

Buildings for residential use and/or personal property. Commercial and industrial risks (extended coverage for earthquake) are not insured.

Underwriting method:

Rider attached to a fire insurance policy. Currently, an earthquake insurance rider is attached to just under 60% of fire insurance policies.

Sum insured:

30% to 50% of the sum insured by the main policy (fire insurance). However, the sum insured is limited to a maximum of 50 million yen for a building and 10 million yen for personal property.

Payable degrees of loss:

Total loss, half loss, partial loss

Payable benefits:

- Total loss – total sum insured
- Half loss – 50% of sum insured
- Partial loss – 5% of sum insured

Limit of total amount of insurance claims to be paid:

Total amount of insurance claims to be paid is limited to 7,000 billion yen per earthquake, etc. for all of the non-life insurance market.

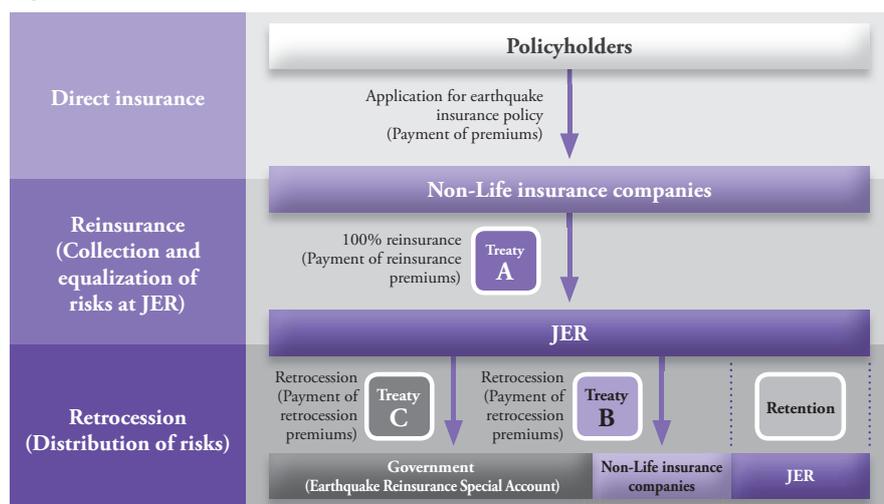


(2) Reinsurance Mechanism

① Reinsurance Flow

JER concludes a reinsurance treaty (Treaty A) on earthquake risk with each direct insurance company that sells earthquake insurance. As Figure 1 shows, in accordance with the Act on Earthquake Insurance, direct insurance companies cede to JER 100% of the sum insured they accept, and JER is obliged to take up the full liability for this earthquake insurance without question. JER also concludes an earthquake retrocession treaty (Treaty B) with each direct insurance company, and with Toa Re, to retrocede a certain part of the liabilities accepted under Treaty A in accordance with the predetermined share for each company. In addition, JER enters into an excess of loss retrocession treaty (Treaty C) with the government and retrocedes to the government part of the insurance liability taken up under Treaty A. JER retains the liabilities that remain after retrocession through Treaty B and Treaty C of insurance liabilities underwritten under Treaty A.

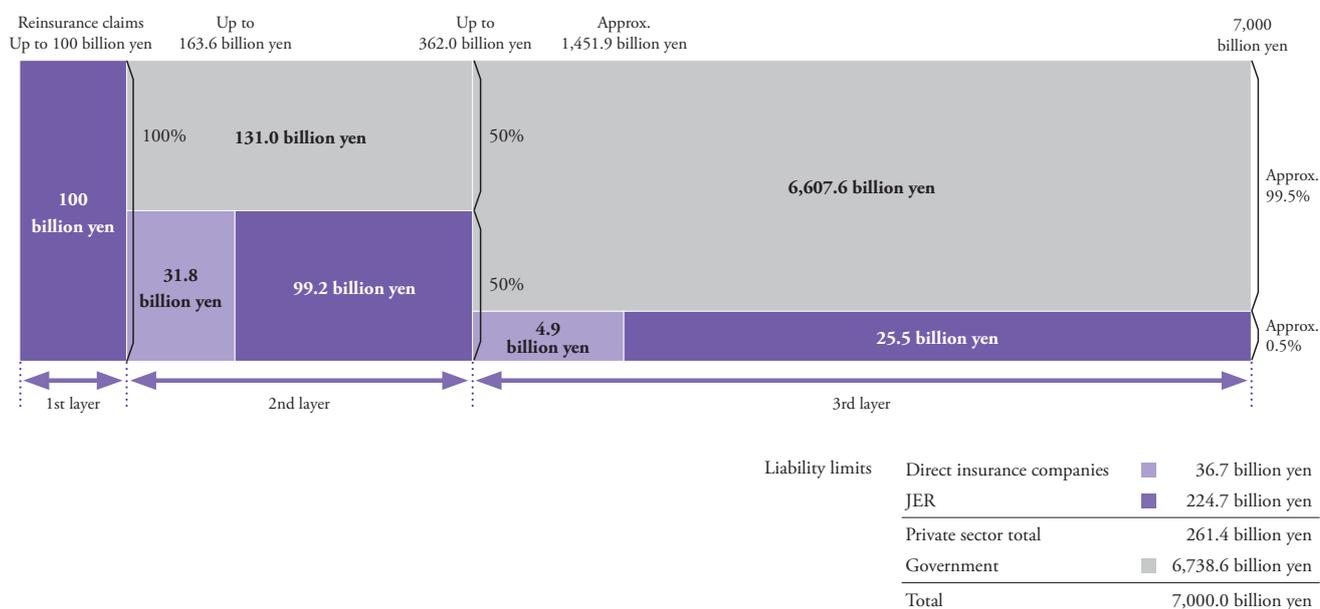
Figure 1: Reinsurance Flow



② Reinsurance Scheme

As shown in Figure 2, the current reinsurance scheme consists of three layers. In the first layer, JER as a private insurance company pays reinsurance claims up to 100 billion yen per earthquake, etc. In the second layer, the government and non-life insurance companies equally share reinsurance claims for the layer covering 262 billion yen in excess of 100 billion yen. In the third layer, the government pays a majority of reinsurance claims (approximately 99.5%) for the portion exceeding 362 billion yen up to 7,000 billion yen. In portions of insurance claims to be paid by the private sector, JER pays 100% of reinsurance claims in the first layer. In the second and third layers, non-life insurance companies pay the lower portion and JER bears the upper portion.

Figure 2: Reinsurance Scheme (As of April 1, 2015)



③ Accumulation of Reserves

The probability of earthquake loss is extremely low compared with other insured incidents, but the damage from earthquakes can be massive. Japan’s earthquake insurance system is therefore predicated on an equilibrium between premiums and payouts over an extremely long period. The reinsurance premiums that the government receives from JER are accumulated in a reserve in a separate account, the “Earthquake Reinsurance Special Account.” The government would first reverse this reserve to pay out reinsurance claims in the event of a major earthquake, and would then pay from a fund, which would be transferred from the general account or debt, to cover a temporary shortfall should the reserve be insufficient. This fund would be repaid with future reinsurance premium income, which serves as a mechanism to maintain the equilibrium between premiums and payouts. At the same time, private insurance companies reserve net premium income after deducting relevant operating expenses from premium income in the reserve at the end of each fiscal year. In addition, insurance companies are obligated to accumulate investment income from these reserves, which is a mechanism that keeps insurance companies from profiting from this system.



④ Liability Limit and Reserves

Private non-life insurance companies are supposed to bear as much of the liability from earthquake insurance as they are able. However, excessive liability would impact their ability to underwrite other types of insurance. Another problem is that a massive earthquake could saddle insurance companies with liabilities that threaten their ability to remain in business. A liability limit has therefore been set based on the reserves of insurance companies. However, the decrease in reserves among private insurance companies as a result of the Great East Japan Earthquake provided the impetus for a fiscal 2013 change of the liability limit of the private sector to address two consecutive major earthquakes. This added reliability to insurance benefit payouts and enhanced trust in the earthquake insurance system.

Table 1: Liability Limit and Reserves

(Billions of yen)

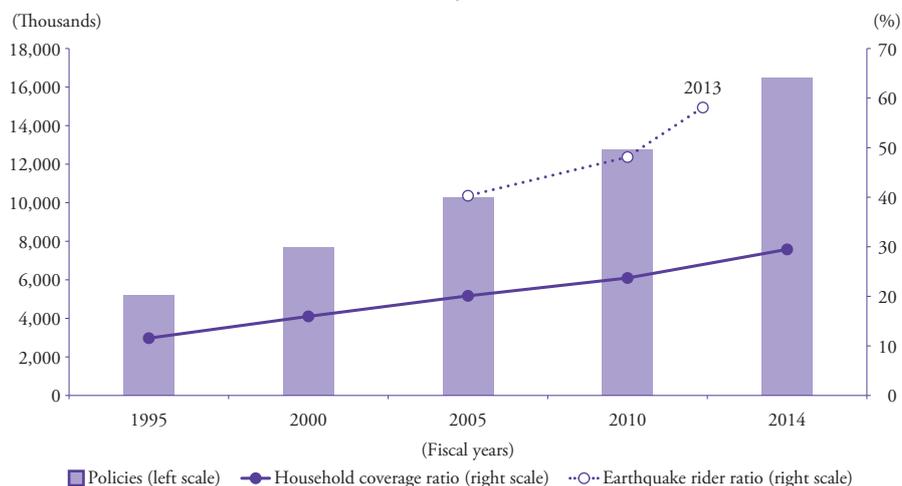
Fiscal year	Private sector		Government	
	Liability limit	Reserves	Liability limit	Reserves
2010	1,198.75	913.5	4,301.25	1,342.7
2011	724.45	394.2	4,775.55	886.8
2012	488.00	421.5	5,712.00	962.3
2013	240.50	450.6	5,959.50	1,072.7
2014	261.40	491.7	6,738.60	1,193.4

⑤ Penetration Ratio and Ratio of Fire Insurance Policies with an Earthquake Rider Attached

Every area of Japan is exposed to earthquake risk. Japan therefore created an earthquake insurance system with the goal of providing stability in the lives of people who are affected by major earthquakes. This resulted in a need to increase the number of policyholders by popularizing earthquake insurance. The General Insurance Association of Japan (GIAJ) and non-life insurance companies therefore engage in a diverse range of activities to promote understanding of earthquake insurance and increase the penetration ratio.

Figure 3 shows that the penetration ratio is below 30% even though major earthquakes in the past have resulted in steady increases in the penetration ratio. Recent data show that the ratio of fire insurance policies with an earthquake rider attached is just under 60%. The industry must maintain ongoing initiatives to increase these ratios.

Figure 3: Household Earthquake Insurance Coverage Ratio and Ratio of Fire Insurance Policies with an Earthquake Rider Attached



Note: The household coverage ratio for fiscal 2014 is a provisional figure calculated using the number of households for fiscal 2013. The earthquake rider ratio had not been publicly announced when this article was being written.

2. JER's History and Current Status

(1) History of JER

The frequency and magnitude of earthquakes are difficult to determine statistically. The irregular timing of earthquakes and risk that they can be massive creates various issues for risk coverage by the conventional insurance system. However, the massive damage caused by the Niigata Earthquake of 1964 added momentum to the movement to create an earthquake insurance system, which was established in June 1966 along with JER.

Japan's earthquake insurance system was created with the assumption that it would be supported by the government and would be managed according to the relevant laws. These laws are the basis for JER's role as a company that reinsures the liabilities assumed by insurance companies. JER is a completely private company funded by Japan's non-life insurance companies to serve as the government's counterparty in reinsurance contracts for earthquake risk, and is therefore a central component of a reinsurance system designed to strengthen the core of the earthquake insurance system provided by a public-private partnership.

(2) JER's Operations

JER's management philosophy is to be a company that society broadly trusts by contributing to the continuity and development of a well-funded and reliable social system through the sound management of a system for providing earthquake insurance.

Our mission is to financially support the swift payout of insurance benefits by direct non-life insurance companies by paying out reinsurance claims in order to immediately stabilize policyholders' lives in the event of a massive earthquake.



JER administers and manages the reserves of direct insurance companies collectively with its own reserves to ensure the rapid availability of capital if massive earthquake damage occurs. Our approach to asset management focuses first and foremost on soundness and liquidity because we may have to dispose of all assets to handle massive reinsurance claims payouts. The profitability of asset management is important for us, but as an additional consideration to soundness and liquidity. We primarily invest in highly liquid, highly rated financial instruments including government bonds, and do not invest in riskier assets such as equities.

JER is a small company with about 30 employees, but is concentrating intensely on strengthening and raising the sophistication of its business continuity management (BCM) in the event of a massive earthquake. Our compact organization requires all employees to enhance their performance, and we emphasize employee development as a key management priority.

(3) Key Performance Indicators

Our key performance indicators for the past five years follow below. Net premium income has increased by 50% over the past five years. On the other hand, net claims paid after recovery of reinsurance claims increased to nearly 200 billion yen in fiscal 2011, but has been trending downward in tandem with payout of insurance benefits by direct insurance companies resulting from the Great East Japan Earthquake.

Total assets decreased by more than half to the 500 billion yen range as a result of payment for the Great East Japan Earthquake, but currently have recovered to the 600 billion yen range. Return on investment was nearly one-third the level five years ago because interest rates have remained low amid persistent deflationary conditions and have been further impacted by the ultra-low interest rates that have become the norm worldwide.

Table 2: Key Performance Indicators of JER

(Millions of yen)

Fiscal year	2010	2011	2012	2013	2014
Net premium income	71,532	83,671	92,996	92,248	108,994
Net claims paid	1,033	196,625	31,607	15,010	9,563
Total assets	1,154,108	509,498	536,808	577,305	640,137
Return on investment	1.20%	1.18%	0.89%	0.70%	0.42%
Number of employees	25	26	27	26	29

3. JER's Role after the Great East Japan Earthquake

On March 11, 2011, the non-life insurance industry established the Earthquake Insurance Central Command at GIAJ after the Great East Japan Earthquake occurred. Rapid payment of a large number of claims to policyholders ensued, with the industry paying out more than 1,200 billion yen for 780 thousand claims within about three months.

The payout of estimated reinsurance claims was an initiative that was the first of its kind since Japan's earthquake insurance system was established. In a typical reinsurance transaction, the direct insurance company first pays claims to policyholders and then submits a statement of account for a reinsurance claim to the reinsurer. However, the advance payments to policyholders by direct insurance companies could run into trillions of yen if a massive earthquake occurs. The earthquake insurance system therefore created a procedure for paying estimated reinsurance claims. As a result of this procedure, JER had provided a total of nearly 1 trillion yen in four payments to direct insurance companies by May 25, 2011, or 75 days after the earthquake occurred on March 11, 2011.

4. Preparing for Future Earthquakes: Specific Initiatives in Anticipation of an Inland Earthquake in the Tokyo Metropolitan Area

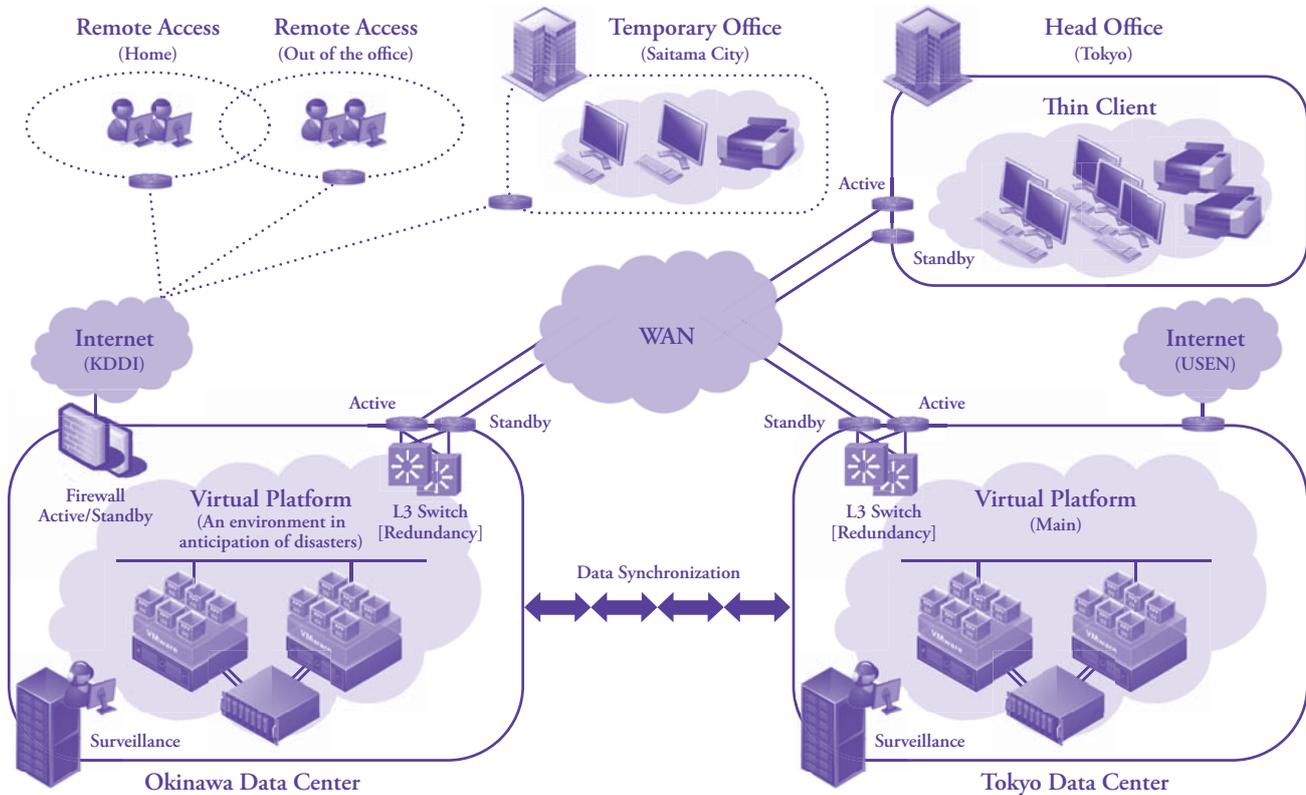
The experience of the Great East Japan Earthquake reaffirmed the importance of business continuation at JER because we are infrastructure that secures the cash flow of non-life direct insurance companies. JER functioned effectively after the earthquake, but Tokyo did not suffer significant damage and our normal business activities resumed soon after the earthquake occurred. We have been upgrading various aspects of our operations environment including IT system infrastructure to maintain highly precise operations even in the high-pressure situation of an inland earthquake in the Tokyo metropolitan area.

Specifically, in fiscal 2012 we renovated internal IT system infrastructure and established a virtual IT platform at data centers in Tokyo. At the same time, we established a backup data center in Okinawa because it does not rely on the Tokyo electric power grid, which experienced electricity shortages as a result of problems at nuclear power plants after the Great East Japan Earthquake, and the probability that it will experience a disaster at the same time as Tokyo is low. We also constructed a framework for synchronizing data in Tokyo and Okinawa using telecommunication lines. In addition, we installed thin client terminals and consolidated data in the virtual platform to introduce a remote access framework that allows employees to directly access data center systems via the Internet from their homes or other offsite locations. Moreover, in fiscal 2014 we established a provisional office in Saitama Prefecture to secure space we can use if a disaster renders the head office unusable. We completed the installation of terminals and other equipment needed to conduct operations, thus constructing a system that enables operations to continue within the same IT system infrastructure as the head office through the use of remote access.

We have conducted repeated training and drills from employee homes and the provisional office using the environment we have prepared so that we can conduct various crucial operations such as the payout of estimated reinsurance claims if an emergency occurs. These initiatives do not have an endpoint because they are an important ongoing effort to improve our capabilities.



Figure 4: IT System Infrastructure in Anticipation of an Inland Earthquake in the Tokyo Metropolitan Area



Conclusion

In 2013, the government's Central Disaster Management Council estimated the probability of a magnitude 7 class inland earthquake in metropolitan Tokyo within the next 30 years at approximately 70%, and predicted the probability of a magnitude 8 to 9 class Nankai Trough earthquake at 70% as well.

The government's Disaster Management Basic Plan advocates that the earthquake insurance system should be strengthened as a means for citizens to enhance their own efforts to prepare for an earthquake. Rapid, reliable insurance benefit payouts from the earthquake insurance system when an emergency occurs will become even more important.

Given these circumstances, JER's role and mission are to function reliably in the event of a massive earthquake and to contribute to the earthquake insurance system's evolution and development as a company that specializes in earthquake reinsurance.

JER initiated a three-year medium-term management plan in fiscal 2015 as a step toward its next 50 years. The subtitle of the plan is "Strengthening Our Ability to Pay Earthquake Reinsurance Claims," and implementing these initiatives is a top priority.

Japan's earthquake insurance system is an excellent public-private partnership within an outstanding framework, and the system functioned effectively after the Great East Japan Earthquake. JER has an important role as the only company in Japan that exclusively handles earthquake reinsurance. We have reaffirmed the importance of our responsibility to society and will fulfill our role and mission.

General Concepts Applied to a Proprietary View of Risk

2.

Oriol Gaspa Rebull

Catastrophe Management, Aon Benfield

John Moore

Head of International Analytics, Aon Benfield

Introduction

In recent years, owning a view of risk has become a crucial part of a good Enterprise Risk Management (ERM), but having a proprietary view of risk can be subject to strong requirements, such as those set by Solvency II and the Own Risk and Solvency Assessment (ORSA) in Europe.

Throughout this article we will try to provide some guidance on general concepts involved in a “proprietary” view of risk, together with examples of tools and processes used to accurately assess and manage risk, with a view to shedding light on how to face and respond to present and future regulatory requests.

1. International Approach to Risk Management

At the heart of the prudential Solvency II directive, the ORSA is defined as a set of processes constituting a tool for decision-making and strategic analysis. It aims to assess, in a continuous and prospective way, the overall solvency needs related to the specific risk profile of the insurance company.

The second pillar of Solvency II plans to complement the quantitative capital requirements with qualitative ones and a global and appropriate risk management system. The reform provides measures on governance, internal control and internal audit in order to ensure sound and prudent management practices from insurers. Impacts in terms of risk and solvency should feed into upstream strategic decisions. The internal assessment process of risks and solvency, known as the ORSA, is the centrepiece of this plan.

In an operational way, the ORSA is part of the global process of Enterprise Risk Management (ERM).

Figure 1: Potential Stakeholders of the Insurance Industry



It is part of a cyclical and iterative system involving the board of directors, internal audit, senior management, internal control and all employees of the company. It aims to provide a reasonable assurance of compliance with the strategy of the company against risks.



The General conditions in the guidelines on ORSA described by European Insurance and Occupational Pensions Authority EIOPA (EIOPA-CP-11/008) state that: “The undertaking should develop its own processes for the ORSA, tailored to fit into its organisational structure and risk management system with appropriate and adequate techniques to assess its overall solvency needs, taking into consideration the nature, scale and complexity of the risks inherent to the business.”

But what are these “appropriate” and “adequate” techniques to assess the solvency needs?

2. General Concepts Involved in a “View of Risk”

Although there are many ways to achieve a specific view of risk, it is possible to group them in three main areas.

- Data Quality & Benchmarking
- Modelling
- Adjustments

(1) Data Quality & Benchmarking

The first stage towards achieving a consistent view of risk is to have good quality data and reliable quality control procedures on this data. Regardless of the line of business, it is very difficult to have an accurate understanding of modelling outputs without knowing the inputs provided.

The concept of GIGO (Garbage In Garbage Out) is as applicable in the computing world as it is in the insurance sector. No model or tool will deliver an accurate and reliable output unless the inputs provided have a minimum standard of quality.

It is very complicated to have a clear and defined risk strategy when there is no control on the exposure underwritten. The higher the resolution and granularity of the insurance portfolios, the lesser the uncertainty around the assessment of the risk.

Standards of quality can vary by region, peril and line of business, but anyone aiming to have their own view of risk should strive towards the highest quality exposure data possible.

Data quality control alone is sometimes not enough. To achieve a comprehensive view of risk, a second process is often required.

Data benchmarking provides an objective perspective towards the consistency and accuracy of the data. Regardless of the quality of the records and procedures used to compile them, it is important to have an opinion on how that data looks, and to compare it against data from other sources.

For example an insurance company might have gone through an intense process of increasing the quality of its portfolio risk types (occupancies and construction types within the exposure). Although this guarantees a high standard of data quality, it is equally important to compare this data set against a general market view. If that insurance company has a 90% portfolio weighting of industrial exposures versus a 50% average in the market, we can assume that their property diversification is low, hence heavily biased towards a single line of business, which would not be considered best risk management practice.

(2) Modelling

Modelling is a valuable (but not the only) way to assess the risk a company might be subject to, and entails a large number of disciplines and products available for risk assessment.

From catastrophe to capital models they all share the same core idea: “The process of using computer-assisted calculations to estimate the expected loss associated to events with a distinct frequency and severity”.

All models are based on a historical catalogue of events and the completeness of such catalogues is key when assessing the quality and suitability of the models.

Once the historical catalogue has been settled, each model will treat the historical data in the most appropriate way possible depending on the purpose of the model. Although models used in different areas of the insurance company may use very diverse sources of data, they all strongly rely on them.

For example, a catalogue in a catastrophe model will be implemented in the hazard module, but there are other components as important as the hazard, mostly the vulnerability and financial modules which have as much relevance in the calculation of the losses as the hazard. Vulnerability and Financial modules are separate and independent elements of a catastrophe model and fulfil very specific functions, designed to be able to assess losses due to natural and man-made catastrophes.

In general users do not have access to the component parts of such models, especially if they have been provided by a third party, but they can work on understanding the different constituent parts of such models.

Reaching an understanding of these parts is a step towards fulfilling what regulators see as “owning a view of risk” when they refer to modelling. Being able to identify the strengths and weaknesses of these models through a thorough study of their component parts and outputs, provides extremely valuable information on the reliability of the tools and their suitability to be able to represent an accurate view of risk.

(3) Adjustments

There is a different kind of *modelling* also available which does not rely on historical catalogues of events, but rather on loss experience.

This approach has the advantage of being independent of the mathematical models, but is still linked to the events suffered in a region and the lines of business relevant to each company.

The largest benefit of this approach is that it allows adjustments reflecting the real loss history suffered by a company based on the actual claims collected, rather than estimating physical properties of the events and then estimating a loss from it.

The main disadvantage is that is very dependent on the time span covered by the loss experience and subject to exposure variation, claims collection uncertainty, policy condition changes and other factors which can sometimes be very hard to control and quantify.

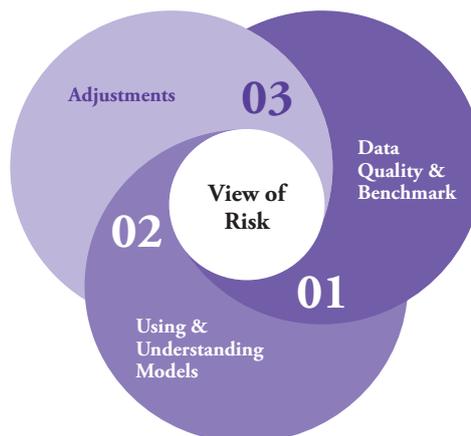
There is of course the possibility of combining both approaches. When the loss records do not provide a complete or partial picture, the results from the models can be blended with the data to achieve a more accurate (or less uncertain) result.



(4) Reaching a View of Risk

As we have seen, there are several ways to reach a “view of risk” and each of them feeds from the others, but there is a basic hierarchy to it (Figure 2).

Figure 2: Basic Components of a Proprietary View of Risk



Companies should not address Adjustments without a clear picture of the models and the data used, and companies should not blindly take the modelling results without a critical examination of their constituent parts and a strong control of the exposures modelled.

Under Solvency II and ORSA requirements, any technique or tool capable of providing a clear picture and addressing any of the issues involved in the aforementioned components’ view of risk, should be accepted as an appropriate and adequate one.

3. State of the Art Products for Risk Assessment

Insurers, reinsurers and brokers on behalf of their clients, all use a wide variety of tools, procedures and models to best estimate the risk their portfolios are subject to.

The range of complexity is quite wide, but there is always a tool which will suit the purpose set by a company to reach a higher level of understanding of their risks, which is by all means and purposes a step forward towards reaching their own view.

Here we will show a couple of examples which hopefully illustrate the variety and flexibility of tools available to anyone in the insurance sector with a basic analytical knowledge.

(1) Exposure Data Control

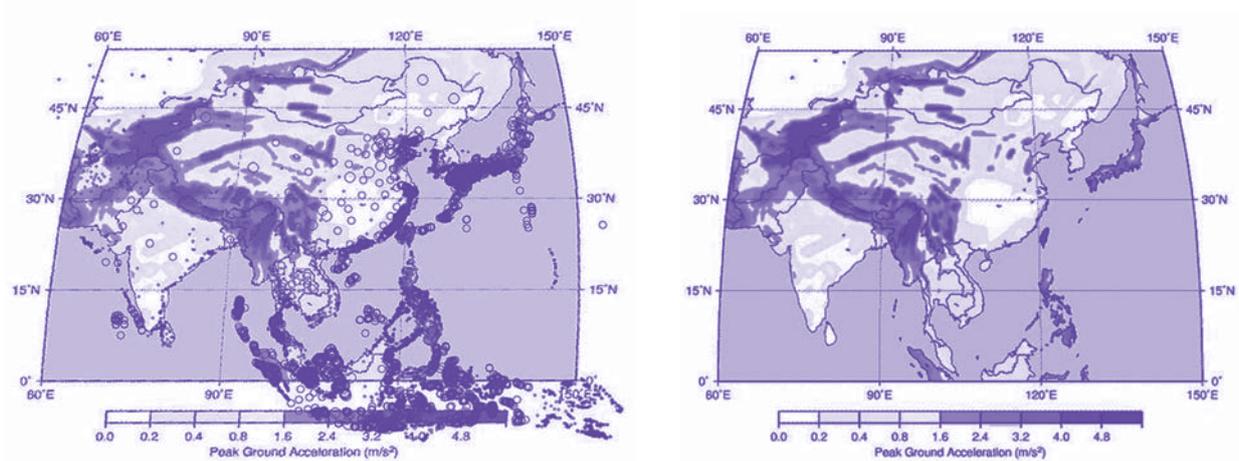
One of the inherent issues always present in insurance and reinsurance is lack of knowledge, regardless of the potential hazard affecting a book of business.

The concerns of companies are sometimes limited to the regions and perils available in the catastrophe models, based on the assumption that commercial models cover the main liabilities in the globe, but there are many countries and perils in the world that have not been implemented in catastrophe models so far, and yet have caused large losses at the time of their occurrence (for example, the Thai floods).

The idea behind exposure data control tools is a very basic and old one. What hazards are my portfolios exposed to? And can they cause large losses?

There are several tools available in the market that allow companies to overlay exposure information with hazard maps. These are known as Mapping or Geographical Information Systems (GIS) and their ultimate goal is to provide a reference (either visual or numerical) capable to help underwriters and risk managers to better control their exposure and risk (Figure 3).

Figure 3: A hypothetical exposure overlaid on top of a seismic hazard map (left). On the right, the same seismic hazard map from the Global Seismic Hazard Assessment Program (GSHAP) showing areas exposed to earthquake in Asia. Such simple exhibits are very useful for risk management purposes as they provide a clear picture between the risk underwritten and the perils they are exposed to.



Some of the commercial software available is highly innovative and runs on very versatile platforms that enable users to visualize and quantify their exposures to a given risk, in addition to performing sophisticated, detailed data analysis capable of driving insightful business decisions.

Such packages can assist users in global or individual risk mapping, pre-binding underwriting analysis, risk driver analysis, claims planning and preparedness, post-catastrophe analysis, identifying exposure accumulations around terrorist targets, and a host of other functions.

Some of them even enable users to view and track exposures worldwide by providing global mapping capabilities and portfolio analysis as well as up-to-date (real time) information on catastrophes including earthquakes, hurricanes, wildfires, tornados and hail events, volcanic eruptions, and other ad hoc events.

Sometimes, such level of complexity is not really needed. Commercially available GIS software is capable of plotting maps like the ones in Figure 3 and can provide equally powerful insights to support making underwriting decisions and growth exposure management.



(2) Models and Adjustments

Although catastrophe models are very powerful tools, they lack the capabilities to assess some lines of business, for example life and motor, outside the natural catastrophe world.

So, how is a company supposed to manage the risk linked to a line of business not covered by catastrophe models?

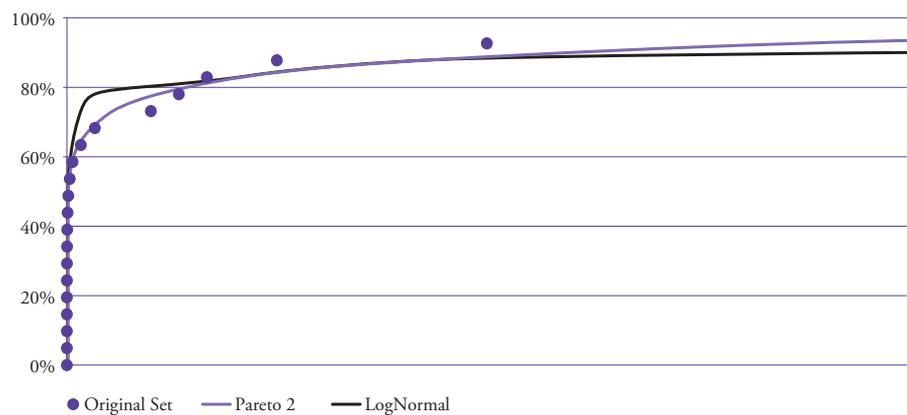
One way is to use a Dynamic Financial Analysis (DFA) tool to create loss distributions representative of the loss experience suffered by a company.

A good example is a process followed by insurance companies or brokers with access to a significant loss history record of the risks exposed.

The first step is to assess the quality of the loss data and establish the assumptions to be applied. Transparency is a paramount feature in these kinds of procedures and although such techniques are not always replicable they have to be at least caveated. Knowing the limitations of a model or a tool is as important as understanding its results.

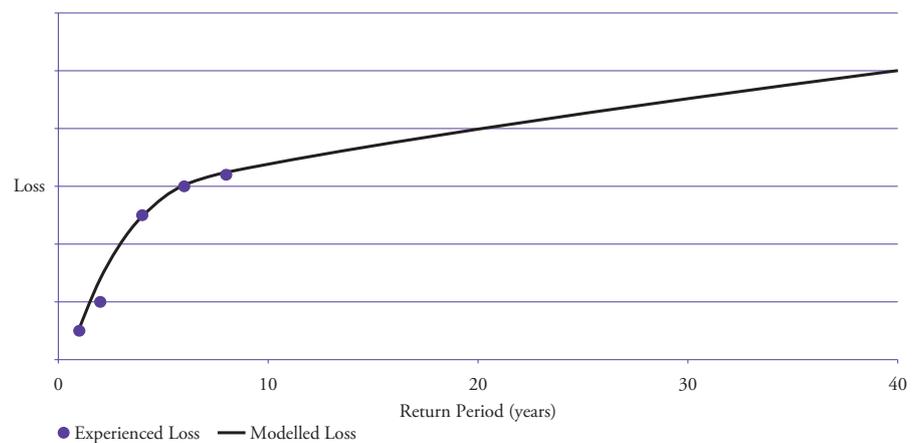
Once the data quality control is done, the second step is to fit a statistical distribution to the loss history. The mathematics behind are not straight forward, but the concept is. From a suite of available mathematical distributions, we have to find the best match to the experienced loss (Figure 4). The match is never perfect and the convergence in the tail can sometimes be poor, but actuaries and catastrophe modellers who work on a daily basis with such methods, will reach the most adequate compromise between data and modelling.

Figure 4: Loss frequency distribution of historical losses and the best fitting distributions. In our example a distribution (Pareto2 (MLE)) was chosen as the best fit for severity distribution.



Once a distribution is found, the last step is to use a probabilistic tool (as in a DFA model) to simulate losses based on some basic parameters like an underwriting limit or attachment. The events experienced in the loss data need to be assigned a rate of occurrence. Most of the data related to insurance losses follows a random behaviour, which can be represented by a Poisson distribution with a mean based on the time span of the historical data.

Figure 5: Per Risk Aggregate Ground-up Loss Curve Comparing the Historical Records with the Modelled Records Using a DFA



The final output is a distribution of modelled losses matching the historical data and capable to forecast losses for further return periods than the ones in the loss records (Figure 5).

But as mentioned already, there are several things to be considered in such an analysis if it has to be used as an adjustment tool. For example the original loss data might have to be compensated by indexation, loss records completeness, loss thresholds and changing financial conditions or other factors, but as long as there is a good understanding of the raw data (loss records benchmark), the data inputs to the model (rectified loss data) and the processes behind the tools used (model evaluation), such an exercise is extremely useful for underwriting purposes.

4. Japan Perspective

How can all these tools and concepts benefit the Japanese market?

The Japanese insurance market does not yet have a disclosed schedule of implementation of a strict regulatory framework like Solvency II, but many Japanese insurance companies, aware of the work carried on in Europe and the US, have started to address their risk management strategies in a more comprehensive and robust way.

The larger Japanese insurance groups have a significant contribution of risk coming from international exposures, mainly in Asia, the US and Western Europe. These groups are aware of international regulatory demands, ERM procedures and the importance of a healthy risk management strategy.



The General Insurance Rating Organisation of Japan (GIROJ), through its work in data collection, statistical analysis and modelling, has a significant role in solvency and the capital requirement in Japan. The treatment of cat reserves and the criteria driving them have been evolving in Japan for several decades and more recently there is a movement towards implementing a more ERM driven perspective.

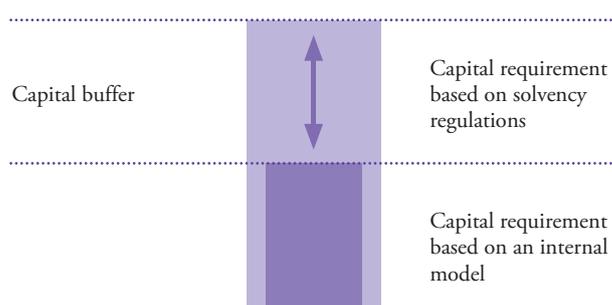
In a different approach to Solvency II's Standard Formula in Europe, insurance companies use GIROJ probabilistic model outputs to meet the solvency requirements in Japan, but they are not universally benchmarked against other catastrophe models to assess internal views of risk.

Generally speaking, the probabilistic nature of the GIROJ models may make them a more accurate regulatory tool to assess the risk insurance companies are exposed to than the Standard Formula. Effectively, what GIROJ does is to bring its own view of risk to the meeting of capital requirements in Japan.

This approach creates a dichotomy between Solvency needs and the internal view of risk, which can lead a Japanese insurance company to have two very different views of risk: one complying with the Solvency requirements established by GIROJ, and another one poles apart, as an internal interpretation of risk based on internal models, but both views are equally valid.

A meticulous capital management strategy requires a balance between capital and risk as well as a sustainable growth approach, but how is it possible to have a sound strategy when there is such an apparent contrast between the capital required by the Solvency regulation and the internal capital requirements estimated by the internal models (Figure 6)?

Figure 6: Hypothetical Gap Between an Internal View of Risk and the Solvency Requirements



How is an insurance company supposed to apply a sustainable growth strategy without a tight control of the capital buffer between different views of risk or without a fitted regulation around them both?

If, for example, GIROJ became the reference for solvency and internal risk management requirements in Japan, Japanese insurers might face a tougher test than the Solvency II Standard Formula when justifying a different view of risk from the one established by GIROJ.

Suddenly that capital buffer would disappear, with a cascade effect on other fields involved in the whole ERM framework.

One must consider the fact that proactive pre-emptive measures towards achieving a sound proprietary view of risk will help in the future to face tougher and stricter regulatory requirements.

Here is where the international experience and all the tools available in the market can help those who are ready to face such a challenge.

No insurance company is the same, and they all have very different internal and external risk management strategies in place, but the sooner they get familiar with all the general concepts applied to “a proprietary” view of risk, the better prepared will they be to establish the “appropriate and adequate techniques” to assess their own solvency and risk prerequisites.

Conclusions

Risk management is a very complex field, which involves many different disciplines and large amounts of uncertainty.

In this paper, we have only described a handful of concepts and tools available in the market used to create a “view of risk”. Whenever an insurance or reinsurance company takes on the task to create such a view, they will face many challenges, from understanding their exposures to how best to diversify their risk while following a suitable growth strategy.

But like any large and complex operation, once the constituent parts and largest drivers are identified, then the main issues can be tackled using the right tools in hand. Such tools are already available and have been used for several years in the international environment.

Every day the insurance market is becoming more and more technical and demanding. Everyone has a need to allocate key people or resources towards understanding the inputs and outputs of the tools and processes used in the creation of a view of risk. They also need to make sure that knowledge is well communicated and no information is lost in translation when shared among all the stakeholders.

A good ERM plan requires for all stakeholders to be aware of the main issues faced so a sound strategy can be placed for both internal and external purposes.



Preparing for a Japan Typhoon Megadisaster

3.

Milan Simic, Ph.D., SVP

Managing Director of International Operations, AIR Worldwide

Ruilong Li, Ph.D.

Senior Engineer, AIR Worldwide

Foreword

Using model scenarios to probe your portfolio's strengths and weaknesses is responsible risk management practice. It is important to prepare for a wide range of scenarios in order to respond effectively when disaster strikes. The scenario described in this article is just one example of the extensive and widespread damage a typhoon could produce in Japan and around Tokyo. The insured loss for this event has a modeled annual exceedance probability of about 1.3% (a 75-year return period) for all of Japan, and about 1.3% (75-year return period) for Tokyo. This is not an extreme tail event; far greater losses are possible.

1. Event Overview

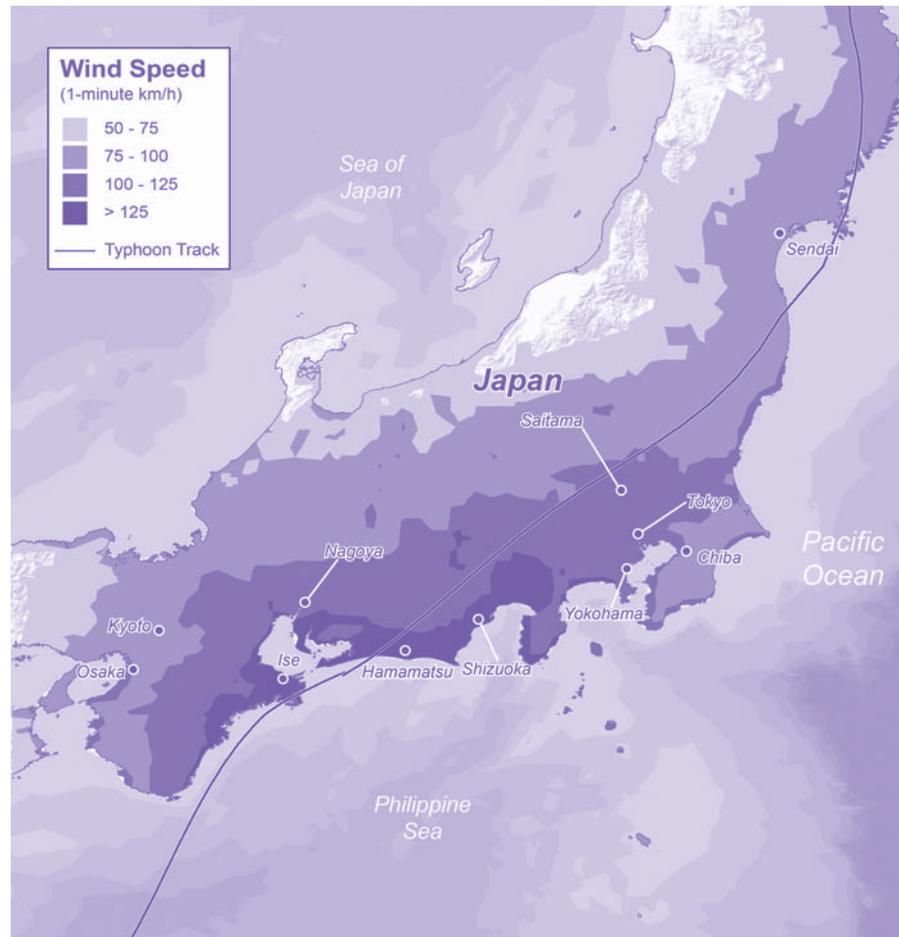
It is well into December when a Category 4 typhoon, the seventh typhoon landfall of the year, slams into Japan. The slow-moving storm brings fierce winds, some in excess of 160 km/h, to the coastal regions of Mie, Aichi, and Shizuoka prefectures. A high storm surge plows into the levees surrounding Ise Bay, testing flood defenses. Weakening as it moves inland over colder and more mountainous terrain, the storm passes north and west of Tokyo, causing extensive wind damage to the low-lying coastal areas around Tokyo Bay and higher elevations west of the city. The storm, which makes a total of five landfalls in Japan, continues to weaken as it moves across northern Honshu and Hokkaido.

Strong winds disrupt surface transportation, cause the cancellation of hundreds of flights, and prompt officials to issue evacuation orders or advisories to hundreds of thousands of residents. Heavy precipitation increases the risk of landslides. In Tokyo, officials suspend public transit and close down schools. Production along the highly industrialized southern coast is halted as vulnerable light metal roofing and siding are either heavily damaged or destroyed.

AIR estimates that if such an event were to actually happen today, insured losses would be 2.8 trillion yen (23.2 billion U.S. dollars)* for all of Japan and 630.7 billion yen (5.2 billion U.S. dollars) for the Tokyo metropolitan area. The heaviest losses are found in Shizuoka Prefecture and result from damage to industrial assets. Figure 1 shows the wind intensity footprint for this simulated storm.

*All U.S. dollar amounts are based on an exchange rate of JPY 1 = USD 0.00829, current as of May 1, 2015.

Figure 1: Wind Intensity Footprint (1-Minute Maximum Sustained Winds) of the Typhoon Megadisaster Scenario from the AIR Typhoon Model for Japan



Source: AIR

2. Japan's Typhoon Setting and History

The Northwest Pacific Basin produces more tropical cyclones than anywhere else in the world. Since 1951, an average of four typhoons per year have made landfall on one of Japan's four islands – and another five come within 500 km of the coastline. While typhoons can occur during any month of the year, most strike Japan between May and October, with July through September being peak season.



Wind drives most typhoon-related loss in Japan, but flooding is also a significant threat because of Japan’s orientation, location, and terrain. After the destruction caused in 1959 by Typhoon Vera – the costliest weather-related disaster in Japan’s history – the government undertook a massive effort to strengthen coastal and inland defenses, and most major cities are now protected by sophisticated flood defense systems.

Typhoon Vera was accompanied by an exceptionally destructive storm surge that destroyed a levee and dyke system and inundated the city of Nagoya. More than 5,000 people were killed, and more than 834,000 buildings were damaged or destroyed in Japan. Other significant historical storms include Typhoon Kathleen (1947) and Typhoon Ida (1958). A more recent storm, Typhoon Tokage (2004), affected some of the same areas as our *Megadisaster* scenario, but was far less powerful.

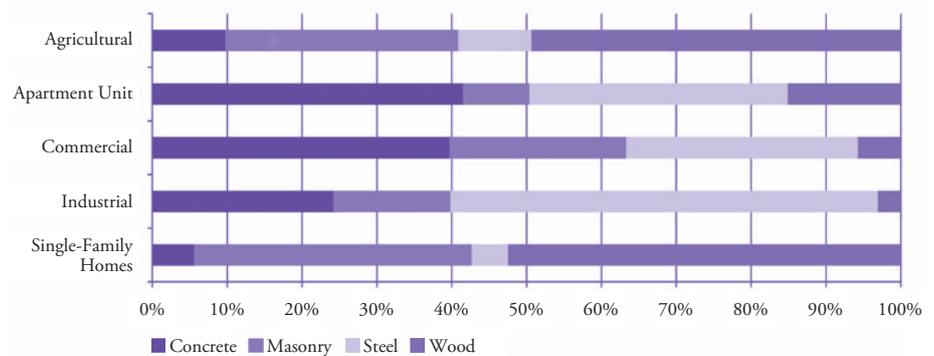
3. Affected Exposure

Throughout Japan, building codes are stringent and reflect the country’s exposure to both wind and earthquake hazards, but many existing structures predate the existence of these codes. Wood construction dominates residential exposures in Japan, and modern wood-frame houses exhibit good lateral resistance to wind loads; thus, major structural damage is expected to be limited at the wind speeds of the modeled storm. However, damage to roof coverings and windows can allow wind-driven rain to enter a building’s interior and cause extensive damage to building contents. Furthermore, dislodged external components can become wind-borne debris that can cause extensive damage to surrounding structures.

Larger multi-family apartment buildings and commercial and industrial structures are generally engineered and made of reinforced concrete or steel. Damage is usually confined to nonstructural components, such as mechanical equipment, roofing, cladding, and windows.

A significant portion of Japan’s industrial stock is of non-engineered light metal construction, which is one of the construction types most vulnerable to high winds. These buildings can experience extensive structural damage, and even collapse.

Figure 2: Japan’s Insurable Exposure by Construction Type

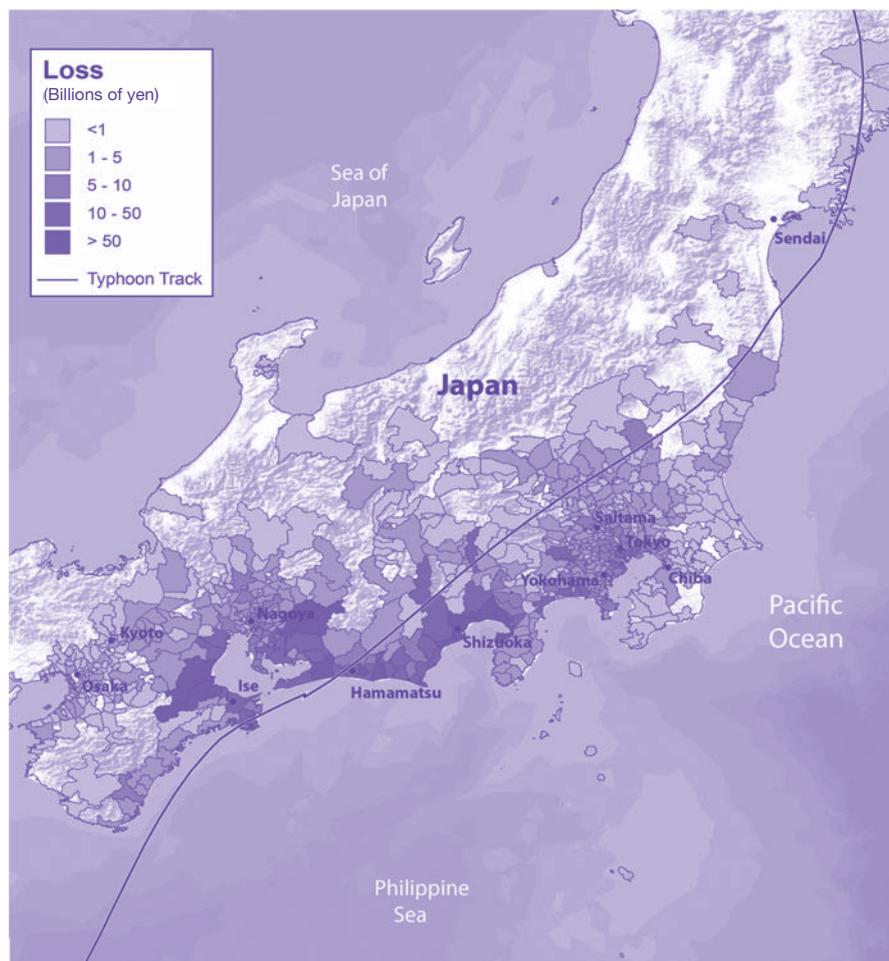


Source: AIR

4. *Estimating the
Impact*

AIR estimates that the simulated event featured here would cause insured losses of 2.8 trillion yen (23.2 billion U.S. dollars) for all of Japan. Figure 3 shows the distribution of modeled loss by municipality.

Figure 3: Insured Loss by Municipality

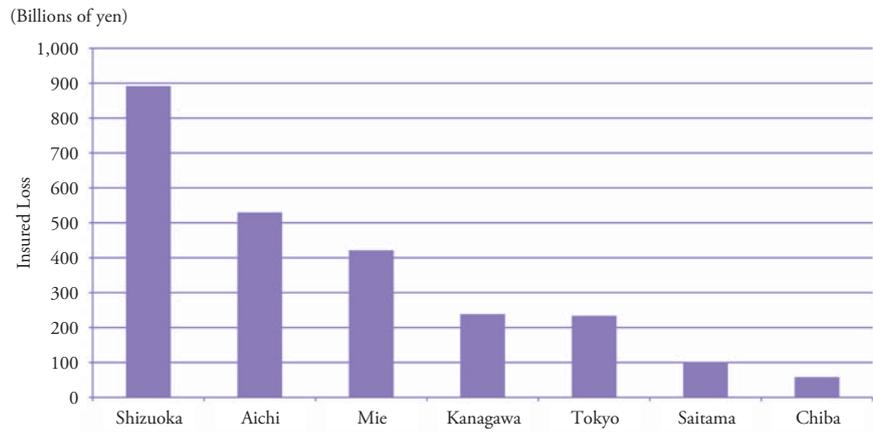


Source: AIR

The coast from Mie to Shizuoka is hit hardest. A storm surge, similar in height and size to the storm surge generated by Typhoon Vera, flows into Ise Bay, causing moderate flood damage. However, the levees protecting Nagoya, which failed in 1959, hold this time. Powerful winds rake the coasts of Aichi, Mie, and Shizuoka prefectures. Together these three prefectures account for almost two thirds of all insured loss from the modeled storm. Figure 4 shows insured losses in the most heavily affected prefectures.



Figure 4: Insured Loss in the Most Heavily Affected Prefectures



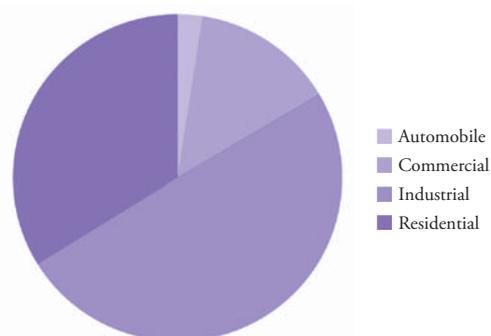
Source: AIR

Much of this loss is industrial because this region is a manufacturing hub and home to companies like Toyota, Brother Industries, Makita, Yamaha, and Suzuki. Note that insurance penetration for industrial and commercial lines is typically much higher than for residential lines, which is another contributing factor to high insured industrial losses. On an *insurable* loss basis, residential losses exceed industrial losses.

Shizuoka Prefecture alone sustains over 891.6 billion yen (7.4 billion U.S. dollars) in insured loss. Most of this loss is to industrial exposures in Hamamatsu and around the northern portions of Suruga Bay. Shizuoka’s residential loss, at 257.5 billion yen (2.8 billion U.S. dollars), is also the highest of any prefecture. To the west, most of the 529.6 billion yen (5.8 billion U.S. dollars) in Aichi prefecture is to industrial exposures on Atsumi Peninsula and in and around the city of Toyota.

With 630.7 billion yen (5.2 billion U.S. dollars) in insured loss, the densely populated Tokyo metropolitan area (consisting of the prefectures of Chiba, Kanagawa, Saitama, and Tokyo Metropolis) accounts for 22% of the event’s total insured loss, most of which is to residential properties. Strong winds affect all areas around Tokyo Bay and areas to the west, such as Hachioji, Machida, Suginami, and Nerima, but Edogawa and Ota are hit especially hard.

Figure 5: Insured Loss by Line of Business for Japan



Source: AIR

5. Are You Prepared?

A few modeling best practices can help ensure that your model produces the most realistic loss estimates:

- Building response to potentially damaging winds is highly dependent on its location and attributes. Accordingly, collect accurate, detailed information for the properties that make up your portfolio – including location and all primary building characteristics such as construction type, occupancy, building age, height – and a true replacement value. Relying solely on coarse resolution address data can lead to significant over- or underestimations of risk.
- Be aware that typhoons in Japan can result in high flood losses. While precipitation was not a significant source of loss in this *Megadisaster* scenario, the AIR model provides the ability to separate wind and flood losses, which have different policy conditions in Japan.
- Note that losses from extra cleanup expenses and debris removal can be a significant source of additional insured losses (more than 30% for some policies). While not included in the industry losses in this scenario, clients can explicitly model these losses for their own portfolios.
- Consider the potential for business interruption losses. While not included in this scenario, clients can use the AIR model to calculate business interruption losses as a function of downtime, the level of damage sustained, the size of the building, and its architectural complexity.
- Note that highly concentrated losses can trigger demand surge, which is an increase in the cost of materials and labor after a large catastrophe due to limited supply. This event triggers demand surge of about 10% for building damage, which is included in the industry modeled losses.
- Finally, consider your loss ratio, or how your estimated losses compare to the “total insured value” in each affected area. While your losses may at first appear to be high, the loss ratio they reflect (typically less than 10% even in the worst affected region of this *Megadisaster* analysis) should be entirely consistent with an infrequent but thoroughly plausible catastrophic event.

Extreme Disaster Scenarios

To help risk managers think about events that are unlikely to be captured by traditional catastrophe modeling techniques, AIR has created Extreme Disaster Scenarios (EDS) that can be analyzed using AIR's Touchstone® platform. These events are plausible but highly uncertain, and no attempt has been made to assign them loss exceedance probabilities. Two EDS are available for the AIR Typhoon Model for Japan that affect an area similar to the one in this *Megadisaster* scenario.

6. Closing Comments

AIR's models capture the behavior of physical phenomena and how those phenomena impact the built environment. They have been thoroughly validated using data from a wide variety of sources.

But no model can *predict* what the next megadisaster will actually be or when it will occur. This fundamental uncertainty makes it all the more important for companies to use catastrophe models to prepare for such losses. The full range of scenarios the models generate – simulating so many perils that impact so many places – provide a unique and important *global* perspective on an organization's overall risk. The careful analysis of model results can help risk managers prepare for many contingencies – thus ensuring that scenarios like the one presented here will not be entirely unexpected.



Recent Developments in Enterprise Risk Management among Japanese Insurance Companies

4.

Nobuyoshi Yamori

Professor, Research Institute for Economics and Business Administration
Kobe University

1. *The Importance of ERM*

Many large financial institutions in the United States and Europe experienced difficulties following the financial crisis in autumn 2008, forcing national governments to provide large amounts of financial support in order to stabilize the financial system. Naturally, people in each country rebelled against government decisions to rescue the very financial institutions that had caused the crisis. Governments therefore strengthened financial institution regulation and supervision to preclude similar crises in the future. While Japan's financial system was not disrupted significantly, Japanese regulatory authorities revamped the financial regulation framework in step with international trends.

Strengthening risk management and limiting the amount of risk in accordance with the tightened regulations, however, does not equate to "management" of financial institutions. Rather than limiting risk, financial institutions are now required to manage the types and amounts of risk they bear in accordance with their capacities and management philosophies in order to consistently increase corporate value over the long term. Given this perspective, Enterprise Risk Management (ERM) has naturally gained currency among Japanese insurance companies.

2. *The Current Situation of Japanese Non-Life Insurance Companies*

(1) The Challenging Environment of the Non-Life Insurance Business

Underwriting profit and investment profit are the primary sources of earnings for non-life insurance companies. Figure 1 shows profit and loss for Japan's non-life insurance companies according to each type of profit. Surprisingly, the industry experienced underwriting losses in seven of the twelve fiscal years from fiscal 2002 through fiscal 2013, and notably had underwriting losses for the four consecutive fiscal years from fiscal 2010.¹ In particular, underwriting losses were a significant 339.1 billion yen for fiscal 2011.

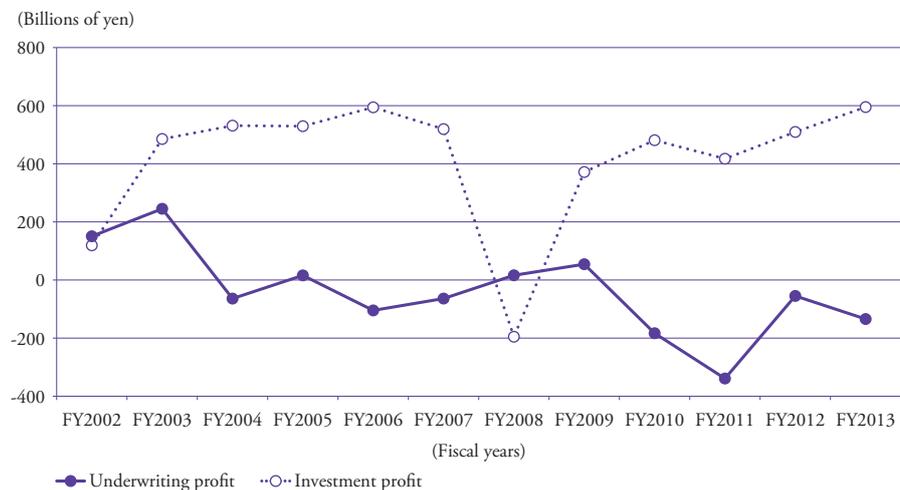
Analysis of the deterioration of underwriting profits in terms of the three main factors of premium income, insurance claims, and operating expenses (operating and administrative expenses associated with underwriting) is instructive. Insurance companies reduced operating expenses by improving efficiency, but lower premium income obviated these efforts.² In addition, insurance claims increased. Fiscal 2011 exemplifies this analysis. As a result of unexpected large-scale natural disasters including the Great East Japan Earthquake in March 2011 and floods in Thailand in summer 2011, the amount of net claims paid increased 1.2 trillion yen to 5.5 trillion yen from 4.3 trillion yen in the previous fiscal year. Notably, greater weather-related uncertainty resulting from climate change such as global warming is not the only factor increasing risk for Japan's insurance companies. The flooding in Thailand clearly showed that Japan's insurance companies are subject to global risks beyond the borders of Japan, because the activities of non-life insurance companies and their clients have become international. This shows that management of insurance risk has become much more difficult than ever before.

Notes: 1. In fiscal 2014, underwriting is expected to become profitable because automobile insurance cash flow improved, due largely to the revision of automobile insurance premiums.

2. Premium income totaled 9.3 trillion yen for fiscal 2002, but decreased to 8.7 trillion yen in fiscal 2013.

Nonetheless, non-life insurance companies have recorded positive pretax net earnings in all but one of the past twelve fiscal years. This was due to the contribution from investment income. Figure 1 shows that investment profit has averaged about 500 billion yen annually, which has compensated for reduced underwriting profits. However, there is still the risk of significant swings in investment income, as the direct impact of the financial crisis resulted in investment losses in 2008. Financial market volatility has increased amid structural changes in the global economy. It is obvious that management of investment risk has become increasingly difficult as a result.

Figure 1: Underwriting Profit and Investment Profit of Japanese Non-Life Insurance Companies*



*Based on data available from the General Insurance Association of Japan (GIAJ; aggregate non-consolidated data for GIAJ members).

Underwriting profit = underwriting income – underwriting expense – operating, general and administrative expenses associated with underwriting ± other income (expenses).

Investment profit = investment income – investment expenses.

(2) Pressure from Capital Markets to Increase Profitability

In the past, shareholders rarely pressured management of insurance companies under the system of cross-shareholdings among closely related banks and companies within the same financial group. The shareholder composition of Japan's large non-life insurance groups, however, shows that foreigners have come to account for about 40% of shareholders over the past several years. Foreign institutional investors with larger stakes are insisting on profitability and dividends to shareholders. In addition, Japanese institutional investors such as life insurance companies and pension funds have come to aggressively demand improvement in management from their investees because they need to improve their own performance.



These changes in shareholder composition and behavior have put intense pressure on insurance company executives for strong profitability. The management targets of all the major insurance groups include increased return on equity (ROE)³. For example, Sompo Japan Nipponkoa Holdings, Inc. (SJNK) announced at an investor relations meeting in May 2014 that a target for fiscal 2015 was to increase ROE to 7% or more from 4.3% in fiscal 2013. MS&AD Insurance Group Holdings, Inc. (MS&AD) has the goal of increasing ROE from 4.5% in fiscal 2013 to 7% in fiscal 2017, the final year of its new medium-term management plan, “Next Challenge 2017.” Similarly, Tokio Marine Holdings, Inc. set an ROE target of 7% or higher in its medium-term management plan, “Innovation and Execution 2014;” ROE was 7.6% for fiscal 2013.

Note: 3. Simple comparison of percentages of ROE is not appropriate as insurance companies have different ROE targets according to their strategies and circumstances.

3. Issues in the Sophistication of ERM

The author has conducted joint research with ERM managers from Japan's major insurance companies since 2013. Through the joint research, the author concluded that the ERM that Japanese insurance companies aim to achieve is management targeting consistent increases in corporate value to ensure soundness while maintaining and increasing profitability by determining the risks they should take and the losses they could accept, premised on their own management philosophies and missions.

Actually, the use of ERM as a key term in medium-term management plans has become the norm for Japan's major insurance companies. These companies have transitioned from building the ERM system to fully employing it in management. Many small and medium-sized insurance companies, however, are still building their ERM systems. Moreover, even major insurance companies still have issues they must resolve to raise the sophistication of their ERM.

The first issue is identifying and measuring risk. Each company is enhancing the sophistication of its methods for identifying and measuring risk. However, companies must constantly raise the sophistication of risk measurement because risk has become more complicated and new types of risk have emerged.

The second issue is enhancing risk control technology. If management cannot control risk appropriately, measuring risk is worthless to management.

The third issue is structuring ERM in terms of each company's management philosophy and mission. Soundness and profitability involve a trade-off that must be balanced, but the desirable balance must be determined in accordance with each company's management philosophy and mission, rather than ad hoc. For example, Japan is integrally subject to accumulated earthquake risk. It would be inappropriate and against its mission for a Japanese insurance company to refuse to underwrite earthquake risk from a risk management perspective. Japanese insurance companies are expected to consider how to handle earthquake risk in a manner that ensures peace of mind for the people of Japan, and then follow through.

The fourth issue is the strong determination of management executives to actually employ ERM in their management. For modern Japanese management executives, corporate management is tantamount to the extreme difficulty of driving a car at night in torrential rain. With the risk model as the headlights, risk control as the steering wheel, and the management philosophy as the map, the management executive is the person who actually uses all of these to navigate the deplorable roads that symbolize risk. Risk control sometimes involves painful reforms such as business portfolio restructuring. Companies need management executives who have the ability and the will to implement such reforms.

The final issue is the need for an ERM culture. All employees, not just management executives, must share an understanding of ERM for it to truly take root. For example, ERM would be ineffective if a company cannot develop a large number of employees who think and operate in terms of risk-based underwriting and investment in their daily activities. Moreover, companies must construct a framework that enables the continuity of ERM even if the top management changes.

4. Conclusions

When an emphasis on profitability was not as necessary because of low pressure from shareholders, management executives could succeed by keeping the ratio of risk to equity (= risk/equity) low to avoid risk. These days, however, the number of shareholders who emphasize ROE (= earnings/equity) is increasing.

Management executives cannot be allowed to manage inefficiently, but at the same time, an excessive emphasis on earnings by powerful shareholders can compromise soundness and damage the interests of policyholders. Insurance company management has a greater need for balance in the trade-off between soundness and profitability than corporate management in general. Insurance company management executives are now responsible for ensuring an appropriate return on risk (= earnings/risk) in order to achieve higher ROE by balancing capital and risk.

Establishing ERM in accordance with a company's management philosophy and mission involves clarifying the risks the company should take and engendering a deep, shared understanding of the company's risk appetite among shareholders, management executives, policyholders, regulatory authorities, and other stakeholders. This approach enables an insurance company to keep its management strategy including risk management without accepting inappropriate pressure from shareholders with a short-term perspective. This means that management executives of insurance companies must use ERM as a tool for communicating with stakeholders.

While ERM certainly evolved in response to international regulatory trends, Japanese insurance companies are expected to proactively employ the ERM framework to enhance their management capabilities.



5. Trends in Japan's Non-Life Insurance Industry

Underwriting & Planning Department

The Toa Reinsurance Company, Limited

1. Trends in Business Results of Non-Life Insurance Companies for Fiscal 2014

Fiscal 2014 results for Japan's non-life insurance companies were solid. An overview of the results of the 26 non-life insurers follows.

Net premium income in all lines of business increased to 8,083.1 billion yen, up 311.8 billion yen from the previous fiscal year, due to factors including higher premium income from automobile insurance due to the effect of revised premium rates and also the increase of household insurance premium. On the other hand, the loss ratio improved by 1.8 percentage points to 62.3%. Despite an increase in payout of claims associated with heavy snowfall in the Kanto region, claims paid due to natural disasters decreased in fiscal 2014 and automobile claims paid decreased as a result of fewer automobile accident claims. Expenses rose by 96.8 billion yen to 2,605.8 billion yen because higher premium income increased agency commissions. Net expense ratio decreased slightly by 0.1 percentage points to 32.2%. The underwriting result improved by 277.7 billion yen to an underwriting profit of 143.3 billion yen, because premium income increased and loss ratio improved. Major non-life companies enjoyed better combined ratios compared with the previous year, reflecting profit for the year.

Investment profit was solid, increasing 48.9 billion yen to 644.0 billion yen. Although an environment of low interest rates continued, a weaker yen and high stock prices contributed to the solid investment profit.

As a result of the above, results for both underwriting and investment were strong, supporting an increase in ordinary profits of 332.2 billion yen to 746.8 billion yen.

While the reduction of the corporate tax rate resulted in the reversal of deferred tax assets, net income increased 164.5 billion yen year on year to 378.8 billion yen.

2. Trends in the Non-Life Insurance Industry

(1) Overview of the Non-Life Insurance Industry

The integration of four companies in 2010 – Mitsui Sumitomo Insurance Co., Ltd. with Aioi Nissay Dowa Insurance Co., Ltd., and Sompo Japan Insurance Inc. with NIPPONKOA Insurance Co., Ltd. – began a cycle of business integration that established an oligopoly in Japan's non-life insurance market. As of March 31, 2015, the top three non-life insurance groups (MS&AD Insurance Group Holdings, Inc., Tokio Marine Holdings, Inc., and Sompo Japan Nipponkoa Holdings, Inc. (hereinafter abbreviated to "SOMPO HOLDINGS")) account for approximately 85% of net premium income for the industry as a whole.

In addition, AIU Insurance Company, Ltd. and The Fuji Fire and Marine Insurance Company, Ltd. of the American International Group, Inc. are integrating their businesses through a merger that will establish a new company, AIG General Insurance Co., Ltd., in July 2016 or later.

Thus, the non-life insurance industry is promoting increased operating efficiency through mergers, functional consolidation and cost reductions. At the same time, the industry is seeing initiatives to secure profits from new sources through business collaboration with non-insurance companies. In addition, non-life insurers are targeting increased earnings by investing in growth areas other than domestic non-life insurance, including the life insurance business and overseas operations such as those discussed below.

Changes and trends among the top three non-life insurance groups are as follows.

MS&AD Holdings was created through the 2010 business integration of two companies, Mitsui Sumitomo Insurance and Aioi Nissay Dowa Insurance. Since fiscal 2014, MS&AD Holdings has been implementing full-scale reorganization by function. For example, Mitsui Sumitomo Insurance is handling the Group's aviation and marine insurance. While maintaining the framework of two core non-life insurance companies, MS&AD Holdings is promoting growth and enhanced efficiency by taking full advantage of their unique characteristics.

Tokio Marine Holdings did not execute major mergers in Japan after Tokio Marine & Nichido Fire Insurance Co., Ltd. and Nisshin Fire & Marine Insurance Co., Ltd. integrated their businesses in 2006. More recently, in 2013 the Tokio Marine Group reached an alliance agreement with National Mutual Insurance Federation of Agricultural Cooperatives (Zenkyoren). This alliance is pursuing opportunities through broad business ties that go beyond the boundaries of the mutual aid business and the insurance business, such as business collaboration in the field of agricultural risk.

With respect to SOMPO HOLDINGS, Sompo Japan Insurance and Nipponkoa Insurance, both of which focus on the non-life insurance business in Japan, were merged into Sompo Japan Nipponkoa Insurance Inc., on September 1, 2014, forming the largest non-life insurance company in Japan in terms of non-consolidated premium income.

(2) Expansion of Overseas Business

The Japanese non-life insurance market is not likely to expand significantly due to the low birth rate and aging of society. Non-life insurance companies are therefore expanding their business base in overseas markets that are expected to grow. The top three non-life insurance groups have positioned overseas business as a group growth driver, and are aggressively implementing initiatives such as forming business alliances with local insurance companies and engaging in M&A.

Figure 1 shows overseas premium income for each of the groups. Since 2012, overseas net premium income¹ for the top three non-life insurance groups has been trending upward, and fiscal 2014 overseas net premium income was over twice that of fiscal 2010. In addition, the overseas businesses of the top three groups are now reaching close to 20% of total net premium income.

The medium-term management plans of the top three non-life insurance groups target overseas business expansion through M&A and organic growth, giving rise to expectations for further growth overseas.



Figure 1: Overseas Net Premium Income¹ for the Top Three Non-Life Insurance Groups
(Compiled by Toa Re from financial results for each company)



Note: 1. The total of net premium income from non-life insurance and life insurance premiums.

Key overseas business developments among the top three non-life insurance groups and recent trends follow below.

MS&AD Holdings acquired the general insurance operations in Asia of U.K. company Aviva plc in 2004, and used it as its base for advancing into the ASEAN region. Moreover, in April 2015 MS&AD Group acquired the shares of Box Innovation Group Limited, a major company in the United Kingdom's telematics automobile insurance² market, as a means to expand its business base and acquire expertise in the European retail business.

Note: 2. Telematics automobile insurance has premiums that reflect analysis of driver behavior and measurement of driving distance.

Tokio Marine Holdings has developed its overseas operations particularly in Europe and the United States. It acquired UK company Kiln Ltd. and U.S. company Philadelphia Consolidated Holding Corporation in 2008, then acquired U.S. company Delphi Financial Group, Inc. in 2012. Moreover, in June 2015 it announced acquisition of U.S. specialty insurer HCC Holdings.

SOMPO HOLDINGS acquired leading U.K. specialty insurer Canopus Group Limited in May 2014, thus expanding its international business significantly during fiscal 2014. In addition, in March 2015 it determined capital participation in French reinsurer SCOR SE to further expand its overseas business.

Table 1: Overseas Business Development among Japan's Top Three Non-Life Insurance Groups (2014-2015)

Month/Year	Name of Holding Company	Contents
February 2014	Tokio Marine Holdings	Investment in U.S.-based Managing General Agent via Tokio Marine Kiln Group Limited
May 2014	SOMPO HOLDINGS	Completed acquisition of Canopus Group Limited shares
May 2014	Tokio Marine Holdings	Acquired shares in CITIC Group Corporation
July 2014	SOMPO HOLDINGS	Entered the automotive repair and maintenance business in China
November 2014	MS&AD Holdings	Established operation companies (brokers) in Russia and Kazakhstan
November 2014	Tokio Marine Holdings	Increased shareholdings in Malayan Insurance Company, Inc.
January 2015	SOMPO HOLDINGS	Restructured Canopus Group holding company
February 2015	Tokio Marine Holdings	Entered a business relationship agreement with South African company Hollard Insurance Group
March 2015	SOMPO HOLDINGS	Determined capital participation in French reinsurer SCOR SE
April 2015	MS&AD Holdings	Acquired shares of major U.K. telematics auto insurance company Box Innovation Group
June 2015	Tokio Marine Holdings	Agreement to acquire HCC Insurance Holdings, Inc.

Source: Press releases and other sources available from the three holding companies

3. Product and Regulatory Trends

(1) Automobile Insurance

As a continuous trend of the Japanese market, profits in Japan's automobile insurance business had decreased due to factors including an increase in accidents among the elder drivers and lower automobile use among the young.

Non-life insurers have therefore moved to improve profits since 2008 through rate increases. These rate increases enhanced the profitability of automobile insurance and contributed to the solid results of non-life insurers in fiscal 2014.

In recent years, competition in the existing automobile insurance customer sales cycle has intensified because of the growth of direct automobile insurance sold with lower premiums via the Internet. Under these circumstances, some major non-life insurers have announced plans to introduce new discount products this fall that specifically target young drivers. Each company is expected to leverage its unique features in ongoing initiatives to secure stable profits.



(2) Revision of Household Earthquake Insurance Rates

The Japanese government and non-life insurance companies jointly maintain the household earthquake insurance³ system. Rates for this insurance increased an average of 15.5% nationwide in July 2014 to accommodate the increasing risk of a major earthquake in the aftermath of the Great East Japan Earthquake.

Note: 3. Household earthquake insurance in Japan is included in fire insurance policies as an optional addition, and covers catastrophe losses from earthquakes, volcanic eruptions and resulting tsunami. The system limits the liability of the government and non-life insurance companies to 7 trillion yen per incident in light of the limits on the ability of non-life insurance companies to pay claims.

However, the latest risk assessment has indicated the need to increase rates again. General Insurance Rating Organization of Japan, which comprises non-life insurers, and the Japanese government are currently implementing a rate increase so that the government and non-life insurers can secure a sufficient fund to cover the latest estimation of earthquake losses.

(3) Sophistication of ERM Promoted by the Regulatory Authorities

In the revised Insurance Core Principles (ICPs) adopted by the International Association of Insurance Supervisors (IAIS) in October 2011, one of the provisions introduced requires the authorities to supervise insurance companies and groups to ensure they implement enterprise risk management (ERM) and their own risk and solvency assessment (ORSA) practices. The Japanese Financial Service Agency (FSA) in February 2014 revised its Comprehensive Guidelines for the Supervision of Insurance Companies and aligned enterprise risk management system guidance, which formed the basis for conducting enterprise risk management system hearings.

At these hearings, the regulatory authority requested 25 life and non-life insurance companies to prepare and submit an ORSA report on a trial basis. Then, ORSA went into effect from 2015 onwards. Insurers are required to submit an ORSA report once a year.

Greater sophistication in risk management was a key component of the financial monitoring policy the FSA announced in September 2014. The introduction of an economic value-based solvency regime, which is an issue for the international insurance system, is another key component alongside the promotion of ERM.

In 2014, the field tests, in which insurance companies calculated the economic value of insurance liabilities and other items on a trial basis, were conducted for the second time since their initial implementation in 2010. The calculation method and confidence level (VaR 99.5%) are being fundamentally coordinated with studies by organizations including the IAIS and the European Union. The construction of a regulatory and supervisory framework for enhancing the sophistication of risk management among insurance companies is steadily proceeding based on the direction of international studies.



6. Trends in Japan's Life Insurance Industry

Life Underwriting & Planning Department

The Toa Reinsurance Company, Limited

1. General Topics Related to the Life Insurance Market

Historically Low Long-Term Interest Rates

Massive purchases of Japanese government bonds by the Bank of Japan (BOJ) caused the annual yield on newly issued 10-year government bonds, the benchmark for long-term interest rates, to fall below 0.2% to a record low of 0.195% in January 2015. Subsequently, a favorable economic outlook for the U.S. economy and stronger sentiment for monetary tightening at the Federal Reserve Board in the United States caused long-term rates in Japan to trend temporarily upward toward 0.4%, but they have remained at a low level.

Historically low long-term interest rates have also affected life insurance companies. Life insurance companies fund and invest the premiums paid by policyholders to prepare for insurance claims, but continued low interest rates on government bonds, their principal investment, have impeded high-yield asset management. Consequently, some life insurers, mainly major companies, have stopped selling certain savings-type products and have reduced assumed interest rates.

Given these circumstances, life insurance companies have broadened their investment portfolios to include investments such as foreign government bonds and real estate in order to secure higher investment income. For example, The Dai-ichi Life Insurance Company, Limited invested in rental condominiums, and Sumitomo Life Insurance Company invested in what it termed "growth markets" such as healthcare and energy. Further investment portfolio diversification in life insurers' assets is expected.

2. Overview of Business Results for Fiscal 2014

The fiscal 2014 business results for 42 life insurance companies were as follows:

(1) Total Amount of New Business

In the fiscal year ended March 31, 2014, the total insured amount of new business declined for both individual life and health and individual annuity due to the effect of higher premiums for insurance products on which the assumed interest rate was reduced because of the standard prospective yield reduction implemented in April 2013. However, in the fiscal year ended March 31, 2015, the total insured amount increased by 0.9% to 67.4 trillion yen for individual life and health, while it increased by 7.9% to 8.6 trillion yen for individual annuity compared with the previous fiscal year.

(2) Total Amount of In-force Business

The total insured amount of in-force business for individual life and health is 857.4 trillion yen, which is almost same as the amount in the previous fiscal year, as it declined among major life insurance companies while remaining steady among subsidiaries of non-life insurance companies and foreign life insurance companies. For individual annuity, the amount increased for the twelfth consecutive year to 104.1 trillion yen, up 0.3% from the previous fiscal year, mainly due to steady growth among major life insurance companies.



3. Trends in the Life Insurance Industry

(3) Premium Revenues and Total Assets

Total premium revenues increased to 38.7 trillion yen, up 8.1% from the previous fiscal year, due to the popularity of insurance products denominated in foreign currencies. Total assets rose to 367.3 trillion yen, up 4.8% from the previous fiscal year, due to a rise in the value of investment assets aided by higher stock prices and the depreciation of the yen.

(1) Nippon Life Insurance Company and The Dai-ichi Life Insurance Company Battling for Industry Leadership

Since World War II, Nippon Life had remained the leader of Japan's life insurance industry in premium income. However, for the first time in the post-war period Dai-ichi Life's premium and other income topped those of Nippon Life for the six months ended September 30, 2014. Dai-ichi Life also became the top company in the industry in premium income for the fiscal year ended March 31, 2015.

A key factor driving Dai-ichi Life's results was subsidiary The Dai-ichi Frontier Life Insurance Co., Ltd.'s focus on bancassurance. Interest rates remained low due to quantitative easing by the BOJ, which increased the popularity of savings products with favorable returns, particularly individual annuity products. Single-premium individual annuity products denominated in foreign currencies such as the Australian dollar that target higher returns than on yen deposits were popular, which drove growth in Dai-ichi Frontier Life's bancassurance sales and supported higher earnings for the Dai-ichi Life Group. Dai-ichi Frontier Life is strong in bancassurance, taking top industry share for savings-type single-premium policies in new business and the top spot among companies that specialize in bancassurance for policies in force. Bancassurance accounted for around 40% of Dai-ichi Life's total premium income, compared to about 10% for Nippon Life. Bancassurance was the factor that widened the gap between these two major companies.

While Dai-ichi Life may have led the industry in premium income, it still lags Nippon Life in earnings. The medium-term management plan for fiscal years 2015-2017 that Dai-ichi Life announced in March 2015 therefore sets the target of doubling consolidated adjusted net profit to 200 billion yen. Its plans for doing so include growth strategies for the three growth engines of domestic life insurance, overseas life insurance and asset management; making U.S. company Protective Life Corporation, which Dai-ichi Life acquired for 575 billion yen in 2015, into a wholly owned subsidiary; and making Dai-ichi Frontier Life profitable.

Domestic life insurance business:

Three domestic life insurance companies – Dai-ichi Life, Dai-ichi Frontier Life and The Neo First Life Insurance Company, Limited – will conduct marketing customized for the characteristics of customer and product segments.

Overseas life insurance business:

Operations in three areas, Japan, North America and Asia Pacific, will drive Group earnings.

Asset management business:

DIAM Asset Management and U.S. company Janus Capital Group Inc. will operate in asset management markets with strong growth potential and expand investment in new growth markets.

On the other hand, Nippon Life fell to the number two spot in Japan's life insurance industry for the first time since World War II and announced its medium-term management plan for fiscal years 2015-2017 in March 2015. Under the plan, Nippon Life will strengthen its domestic life insurance business by enhancing existing channels such as its sales personnel channel and increasing points of contact with customers through the use of independent agencies and other channels. Nippon Life will also strengthen its Group business by aggressively expanding overseas business through ways such as increasing investment in the overseas life insurance business and considering the acquisition of overseas life insurers.

Domestic life insurance business:

Deliver attractive products and services that address diversifying customer needs, and enhance and diversify sales and service channels such as independent agencies and bancassurance.

Group business:

Increase Group earnings with a focus on the overseas insurance business, asset management business and businesses that contribute significantly to the domestic life insurance business.

The domestic life insurance market has become intensely competitive among domestic, foreign life insurers and subsidiaries of non-life insurance companies because channels such as banks and independent agencies have become more important. Given this major industry trend, the competition between industry leaders Dai-ichi Life and Nippon Life is also likely to intensify.



(2) Expanding Sales at Insurance Shops

Sales personnel have been the traditional sales channel for large insurance companies. However, decreasing need for the death benefits that are the main product for sales personnel is posing a challenge for sales in this channel.

At the same time, independent insurance shops that handle the products of multiple life insurance companies continue to generate steady growth in sales. Now numbering more than 1,000 nationwide, these shops are primarily located around major urban train stations. They mainly offer insurance products that are low-cost and simple to understand, such as health insurance. Such insurance shops are preferred primarily by younger generations that tend to select insurance products by themselves.

Large life insurers have tens of thousands of sales personnel, so in the past supplying products through insurance shops would have created infringement issues with the sales personnel channel. However, large life insurers are realizing that customer self-selection needs for insurance products will grow and are therefore increasing their participation in the insurance shop channel.

Large life insurers are resolving the infringement issue by developing products with separate corporate branding. For example, Sumitomo Life established Medicare Life Insurance Co., Ltd., which has developed a full line of products for the insurance shop channel, and Dai-ichi Life has expanded its product lineups for previously neglected channels including insurance shops and Internet sales through Group company Neofirst Life.

Large life insurers are expected to further emphasize insurance shop sales to enter customer segments that they could not reach in the past via the sales personnel channel.

4. Product Trends

(1) Expansion of Private Long-Term Care Insurance

The number of elderly people who require long-term care is increasing with the aging society. Japan therefore established a public long-term care insurance system in 2000 as a social safety net to support the elderly. All people age 40 and older are enrolled in this public long-term care insurance and begin paying premiums. This performance-in-kind benefit plan involves 10% co-payment for predetermined nursing care services as they are needed.

On the other hand, private long-term care insurance provided by insurance companies involves a cash benefit plan with benefits paid as a lump sum or an annuity. It supplements co-payment amounts for public long-term care insurance and enables reimbursement for services not covered by the public long-term care system.

The need for nursing care is forecast to rise because of progress in aging. The need for long-term care insurance is rising because the responsibility of the elderly for nursing care will increase due to the deterioration of Japan's public finances. Private long-term care insurance sales volume is therefore expanding.

Japan's life insurance market is contracting because of the nation's low birth rate. Life insurers have positioned long-term care insurance as a growth business because sales of conventional core products, such as death benefit, have weakened, and are focusing on developing long-term care products. In addition, companies are enhancing services to address the various concerns of the elderly in order to increase the number of policyholders. For example, some life insurance companies are operating elderly care facilities and others are offering in-home consultation services free of charge through agreements with nursing care companies. Amid competition among life insurers, services associated with long-term care insurance are therefore expected to increase.

(2) Higher Age Joining Limits

The number of the elderly purchasing medical and/or other types of insurance is rising year by year because average life expectancy continues to increase in Japan. A number of life insurers have successively raised age joining limits for medical insurance into the 80s.

Key Examples

AFLAC (American Family Life Assurance Company of Columbus)

Raised the cancer insurance age joining limit to 85

Mitsui Life Raised the whole life insurance age joining limit to 80

Zurich Life Raised the cancer insurance age joining limit to 80

Conventionally, medical insurance was primarily attached to whole life insurance as a term medical rider, with many riders maturing at age 80. For subsequent medical protection, the elderly were required to re-enroll in new medical insurance. However, whole medical insurance typically had an age joining limit in the 70s, meaning that many elderly people were unable to re-enroll in medical insurance after their medical insurance riders matured.

For people 75 and older, the co-payment for medical treatment drops to 10% because expenses are covered by public health insurance. However, people must pay the full cost if they receive medical treatment that is not covered by public health insurance. This led to increasing demand for private medical insurance to cover the burden of medical expenses, and some life insurers have started to provide policies with a higher age joining limit.

With average life expectancy estimated to rise further, the trend toward higher age joining limits is likely to continue.



(3) Strong Sales of Medical Insurance for Women

With women playing a greater role in society, they have become more concerned about diseases specific to themselves. As a result, insurance companies have focused on medical insurance products geared to women, and they have enjoyed solid sales.

Medical insurance for women allows policyholders to receive hospitalization benefits that are greater than standard health insurance if they suffer medical conditions specific to women, such as uterine cancer, endometriosis and extra-uterine pregnancy or other diseases that mainly affect women, such as breast cancer. Moreover, some insurers have established companies that provide call centers through which policyholders can consult on healthcare issues and receive information on obstetrics and gynecology from hospitals staffed with female doctors.

With the continuing tendency to marry and have children later in life, demand is also expected to increase for expensive infertility treatments such as in vitro fertilization. As a result of this situation, insurance companies are projected to continue expanding the products and services they develop specifically for women.

5. *Developments in Regulation*

Living Bequests

The inheritance tax increased as of January 1, 2015, which has increased the popularity of life insurance that reduces the inheritance tax burden in the future through living bequests.

The basic mechanism for living bequests using life insurance is gifting the maximum annual amount of 1.1 million yen that is exempt from the gift tax in cash each year to fund a life insurance policy. This approach offers the benefit of transferring assets to descendants without having to pay the gift tax, and also reduces the inheritance tax burden for people who use it to transfer assets during their lifetime.

The major types of life insurance used for living bequests are individual annuities and whole life insurance. Relevant products have driven strong growth in new policies among life insurers.

The low birth rate and less interest in insurance among the younger generations have weakened demand for life insurance. Life insurers see these trends as a business opportunity, and have broadened their seminars to promote the merit of using life insurance for living bequests to uncover additional demand for life insurance. They are likely to continue enhancing their various initiatives.

Supplemental Data: Results of Japanese Major Non-Life Insurance Groups (Company) for Fiscal 2014, Ended March 31, 2015
(Non-Consolidated Basis)

(Unit: Millions of yen, %)

	MS&AD Holdings		SOMPO HOLDINGS			Tokio Marine Holdings		Fuji	Toa Re
	Mitsui Sumitomo	Aioi Nissay Dowa	Sompo Japan Nipponkoa	SOMPO JAPAN	NIPPONKOA	Tokio Marine & Nichido	Nisshin		
Net Premiums Written	Fiscal 2014	1,444,176	1,160,867	2,181,302	—	2,036,790	136,634	278,898	165,497
	Fiscal 2013	1,386,533	1,144,629	—	1,413,818	668,375	137,286	273,161	147,420
Net Claims Paid	Fiscal 2014	810,853	677,923	1,305,471	—	1,148,370	77,516	137,273	131,377
	Fiscal 2013	823,665	691,799	—	822,285	413,767	78,536	146,641	134,786
Underwriting Profit (Loss)	Fiscal 2014	14,000	14,793	45,232	—	59,917	14,748	(5,220)	(2,231)
	Fiscal 2013	(7,326)	(28,815)	—	(32,844)	(29,725)	1,612	5,705	(9,743)
Ordinary Profit (Loss)	Fiscal 2014	171,328	68,973	195,134	—	264,085	17,674	4,780	11,569
	Fiscal 2013	101,998	27,897	—	68,079	49,685	4,740	17,019	(372)
Net Profit (Loss) for the Year	Fiscal 2014	89,114	39,480	45,059	—	185,312	12,592	2,014	2,634
	Fiscal 2013	58,047	13,107	—	27,350	22,173	3,350	5,803	1,722
Total Assets	Fiscal 2014	6,790,021	3,470,706	7,326,234	—	9,078,083	431,903	866,933	489,561
	Fiscal 2013	6,098,017	3,257,180	—	4,838,707	2,260,231	418,313	857,372	468,875
Ratio 1 Loss Ratio (%)	Fiscal 2014	62.2	63.2	65.6	—	61.3	63.7	54.8	79.4
	Fiscal 2013	65.0	65.0	—	64.6	67.8	63.9	59.4	91.4
Ratio 2 Expense Ratio (%)	Fiscal 2014	31.8	35.0	31.8	—	30.2	32.6	37.6	22.8
	Fiscal 2013	32.0	34.5	—	31.4	34.0	32.5	35.8	23.2
Ratio 3 Yield on Investments (Income) (%)	Fiscal 2014	2.44	2.34	2.19	—	3.28	1.42	1.51	4.12
	Fiscal 2013	2.54	2.55	—	2.20	2.34	1.40	1.50	2.91
Ratio 4 Yield on Investments (Realised Gains / Losses) (%)	Fiscal 2014	4.55	3.04	3.77	—	4.51	1.53	2.42	4.83
	Fiscal 2013	3.95	3.08	—	4.04	5.54	1.57	2.28	3.46
Ratio 5 Solvency Margin Ratio (%)	Fiscal 2014	651.5	804.9	716.3	—	751.7	1,064.5	939.9	851.4
	Fiscal 2013	600.3	754.0	—	713.3	653.0	837.1	782.2	815.1

Sources: Each company's financial statements of fiscal 2014

Note: Sompo Japan and Nipponkoa merged to become Sompo Japan Nipponkoa Insurance Inc. on September 1, 2014.

The Toa Reinsurance Company, Limited

6, Kanda-Surugadai 3-chome, Chiyoda-ku, Tokyo 101-8703, Japan

<http://www.toare.co.jp>



Printed in Japan