PART III B

Chapter 16

Disaster Risk Management in Japan*

by

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Japan is a particularly exposed country in respect of earthquakes, tsunamis and volcanic eruptions. In order to address these potentially catastrophic risks, which often lead to disastrous human and economic losses in Japan, the government first established in 1966 the Earthquake Insurance System backed by the State Budget. This scheme was then deeply amended notably in 1980, inter alia to extend its coverage. The scheme was then successively revised in 1991, 1996 and 2001 in order to provide more tailored coverage and price rating to households. The note provides a detailed assessment of this revision process and of the organization and mechanisms established by the present scheme including the respective role of the insurance market and the government.

* The background note of Mr K. Kawachimaru's presentation (NIPPONKOA Insurance Company Ltd) is based on *Governmental Earthquake Insurance System in Japan*, from *Earthquake Insurance in Japan*, written and published in March 2003 by Non-Life Insurance Rating Organization of Japan.

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1. Establishment of the Earthquake Insurance Systems

1.1. Background of Establishment

The Niigata Earthquake (M 7.5) occurred on June 16, 1964, around 1:00 pm, with a hypocenter off the shore of Niigata Prefecture. The damage from this earthquake spread nine prefectures from Yamagata to Akita, centering on Niigata Prefecture, with 26 dead, 447 injured. As for damage to residences, 1,960 were completely destroyed, 6,640 were partially destroyed, 15,297 were flooded and 67,825 were partially damaged. As for buildings other than residences, 16,283 suffered damage, and ships, roads, bridges, railways, banks, etc., suffered great damage. Additionally, the damage due to ground liquefaction inside Niigata City was also significant.

This earthquake disaster was focused on at the Diet and a resolution was passed that the establishment of an earthquake insurance system should be swiftly investigated.

In such a situation, Kakuei Tanaka, the Minister of Finance at that time, convened a general meeting of the Insurance Council and consulted with them concerning concrete measures in order to contribute to the stabilization of the livelihood of the nation at times of earthquake disasters without notice.

The Insurance Council performed deliberations concerning the coverage of earthquake disaster, insurable property and losses to be covered, prevention of adverse selection, ways for the nation to be involved, the amount to be insured, the limit of total payments, the sharing of liability between the Government and private insurance companies, etc. The Insurance Council discussed such with great deliberations and in 1965 made its report on an earthquake insurance system. In order to attempt the commencement of an actually achievable system, it was unavoidable that the specifics of the insurance system in the report contained various restrictions, due to various problems such as the financial burden of the Government.

1.2. Implementation of the Earthquake Insurance System

Specifics of the earthquake insurance established in 1966 were as follows:

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Losses to be covered

Losses due to earthquakes, volcanic eruptions or tsunami due to said, and only in ease of total loss (including economically total loss) shall such be covered.

Insurable property

Buildings used for residential use and movables for living (household goods).

Method of contract

Contract shall be made incidental to householders' comprehensive insurance and storekeepers' comprehensive insurance (automatic attachment).

Amount insured and limit amount to be paid

Such shall be 30% of the amount insured of householders' comprehensive insurance and storekeepers' comprehensive insurance; however, 900,000 yen for buildings and 600,000 yen for households goods shall be the limit amount to be paid.

Limit of total payment amount for insurance claims due to a single earthquake. etc., shall be 30 billion yen.

1.3. Enactment of Laws Concerning Earthquake Insurance

Upon the implementation of an earthquake insurance system, the Government announced officially the "Law concerning Earthquake Insurance, Enforcement Order, Regulation for Enforcing Thereof" and "Earthquake Reinsurance Special Accounting Law, Enforcement Order, Regulation for Enforcing Thereof," and came into force in 1966.

The earthquake insurance system was subject to the backing of the nation, and because of the necessity to perform stable management of the system, and for contribution to the stabilization of the lives of the victims, the coverage details, payment standards, amounts of underwriting limit, reinsurance, accounting treatment, etc., were specifically stipulated in laws.

2. Transition of Earthquake Insurance System

The earthquake insurance system established in 1966 was quite restricted due to the uniqueness of the seismic risk. However, owing to changes in the social and economic circumstances afterwards, along with the experiences from several great earthquake disasters, etc., policyholders expressed various needs.

In order to deal with these, many revisions were made, such as raising the limit of insurable amount, improving the coverage, raising the limit of the total amount of insurance claims to be paid, changes in premium rates, etc.

Major revisions concurrent with changes in the premium rates are as follows:

2.1. 1980 Revision

The Miyagiken-oki Earthquake (M 7.1) occurred on June 12, 1978, at about 5:00 pm. Huge damage was wreaked by this earthquake, centered on Miyagi Prefecture, with 1,183 houses completely destroyed, 5,574 partially destroyed, and 60,124 partial damage, etc. Since the damage of partial destruction and partial damage, which occurred massively in this earthquake, was not covered by the earthquake insurance, policyholders requested improvement of the coverage. There was even discussion in the Diet concerning the coverage of this earthquake insurance. Additionally, there was an investigation by the Insurance Council, and the report entitled "Concerning the Revision of the Earthquake Insurance System" was submitted in 1979. In accordance with this report, broad revision of the earthquake insurance system was expedited.

The specifics of the revisions are as follows:

Introduction of half-loss coverage

In addition to total loss coverage, half loss coverage was newly introduced into the coverage. As for buildings, in addition to total loss, half loss was covered, and as for household goods, in addition to total loss, losses which were not total, but rather were household goods contained in buildings that were themselves more than half loss, was to be covered as half loss.

It was determined that the payment method for half loss was 50% of the amount insured for buildings, and 10% of the amount insured for household goods to be paid respectively.

Attachment method, change of attachment target contracts

Out of consideration of policyholder convenience, the Attachment method was changed to "automatic attachment in principle," in which if the policyholder desired not to attach the earthquake insurance, they could do without it, for all fire insurance types that were the targets of attachment of earthquake insurance.

Raising of proportion insured and limit amount insured

The proportion insured, which had been uniformly 30% of the amount of fire insurance, was extended to be in the range of from 30% to 50%, and the amount of earthquake insurance was determined to be set within that range. Concurrent with this, the limit of amount insured was raised, from 2,400,000 yen to 10,000,000 yen for buildings, and from 1,500,000 yen to 5,000,000 yen for household goods.

Premium rates

Since half loss coverage was introduced as an improvement of coverage, premium rates were reconsidered. Upon reconsideration, according to the outlines of the Insurance Council's Report ((1) concerning differences between areas, etc., as earthquake insurance had been an automatic attachment up to then, the public position had been not to make the difference so great; however, concurrent with the changes in the underwriting method, seismic risk needed to be reflected in the rates as fully as possible, (2) buildings and household goods were to be on separate systems), the class location was changed to a five-class system from three, and the rates for buildings and household goods were separated.

2.2. 1991 Revision

The Chibaken Toho-oki Earthquake (M6.7) occurred on December 17, 1987 causing massive damage centering on Chiba Prefecture, bringing about complete destruction of 10 houses, and more than 60,000 with partial damage. Additionally, at the time of the Izuhanto-oki Earthquake swarm, which had occurred from July to August 1989, a large amount of partial damage occurred. However, since partial damage was not covered by the earthquake insurance, policyholders requested that partial damage should also be covered. Subject to said, an investigation was performed and revision was implemented in 1991.

The specifics of the revision are as follows:

Introduction of partial loss coverage

In addition to total and half loss coverage, partial loss coverage was newly introduced for the coverage. As for buildings, total loss, half loss and partial loss were covered, and as for household goods, in addition to total loss, losses which were not total, but rather were household goods contained in buildings that were themselves more than half lost, were to be covered as half, and household goods contained in buildings that were partially lost, were to be covered as partial loss.

It was determined that the payment method for partial loss was 5% of the amount insured both for the buildings and for the household goods, and it was to be paid respectively.

Reconsideration of premium rates

Since partial loss coverage was introduced as an improvement for the coverage, premium rates for earthquake insurance were reconsidered.

3. Great Hanshin-Awaji Earthquake and Revision of Earthquake Insurance

The Hyogoken-Nanbu Earthquake (M 7.3) occurred on 17 January 1995, at 5:46 a.m., centered on Hyogo Prefecture, and causing massive damage. According to the announcement by the Fire Defense Agency, damages reached as high as more than 6,000 dead and missing, more than 40,000 injured, more than 240,000 houses totally or half destroyed, more than 6,000 houses total or half bumed down, and because of its scale, it was named as "Great Hanshin-Awaji Earthquake." This earthquake was a so-called city inland earthquake, which occurred on active faults close to a big city with highly developed urban functions, and dealt a severe shock to the society and the economy.

Interest in earthquakes in the Kansai area was very low at that time, but, stimulated by this earthquake, interest in earthquake insurance became higher and the number of the earthquake insurance policies increased vastly.

After the Great Hanshin-Awaji Earthquake, subject to requests by policyholders, improvement of coverage details, raising of the limit amount of participation and reconsideration of premium rates were performed and these revisions were made in 1996.

3.1. 1996 Revision

In order to pay the insurance claims quickly to suffering policyholders, the method was employed in earthquake insurance of making loss assessment for household goods (cases of half or partial loss) and loss assessment of buildings the same. Therefore, even though they suffered serious damage to their household goods due to this earthquake, there were cases in which victims could not get sufficient amount for earthquake insurance claims paid because there was zero or only slight damage to their buildings, and this created confusion among policyholders. In order to avoid

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such a situation, there was a request that loss assessment for household goods should be by the method of using the degree of damage to household goods themselves.

Additionally, there were many opinions that the limit of participation at that time of 10,000,000 yen for buildings and 5,000,000 yen for household goods, and that the configuration of payments for half loss of household goods being 10% of the amount insured were insufficient and such should be raised.

Subject to these requests, improvement of coverage details for household goods, raising of the limit amount of participation and reconsideration of premium rates were performed in January 1996.

Specifics of the revisions are as follows:

Changes in loss assessment standards for household goods

Concerning loss assessment for household goods, as for half and partial losses, the assessment method of using the degree of damage to buildings was changed to an assessment method of using the degree of damage to household goods themselves.

Changes in payments for half loss of household goods

The payment rate for half loss of household goods was raised from 10% to 50% of the amount insured.

Raising of participation limit amount

The participation limit amount was raised and as for buildings, such was changed to 50,000,000 yen from 10,000,000 yen, and for household goods, to 10,000,000yen from 5,000,000 yen.

Reconsideration of premium rates

Concurrent with the improvement in coverage details for household goods, reconsideration of premium rates was performed and rates for buildings and household goods were set as the same. Through this, the rates for buildings were lowered and the rates for household goods were raised. The class location was unchanged.

3.2. 2001 Revision

Exceedingly many buildings suffered damage in the Great Hanshin-Awaji Earthquake. As a result of research and study by numerous scholars and experts concerning the damage situation, it was verified that the degree of damage clearly differs depending on differences in earthquake resistance capacity of buildings.

Due to such facts, there was a request that earthquake resistance capacity of residences should be more fully reflected in premium rates or earthquake insurance from such groups as the "Association of Diet Members to Protect Japan from Earthquakes," formed after the Great Hanshin-Awaji Earthquake (later renamed the "Association of Diet Members to Protect the Nation from Natural Disasters," with about 140 members) and the "Investigation Committee concerning the System of Residence Rebuilding Support for Victims" in the National Land Agency, and from the Government's "Three Year Deregulation Promotion Plan (re-revised)".

On the other hand, in October 2000, the Ministry of Construction (present the Ministry of Land, Infrastructure and Transportation) began enforcing the Housing Performance Indication System under the Law Concerning Promotion of Quality Guarantee of Housing (hereinafter referred to as the "Quality Guarantee Law"). Through this, earthquake resistance capacity of residences began to be evaluated properly by the "earthquake resistance class" index.

On the basis on these situations, two kinds of discount systems in accordance with earthquake resistance capacity of residences were newly introduced and additionally, basic rates were lowered.

A summary of the revisions is as follows, and the details will be stated in the next section.

Basic rate

Reconsideration of the basic rate was performed and rates for wooden structures were lowered. There was no change for the class location section.

Discount rate

As a discount system for residences with high earthquake-resistance capacity, a construction age discount rate and earthquake resistance class discount rate were introduced. However, in case of the earthquake resistance class discount rate being applied, the application of the construction age discount rate could not be applied.

a. Construction age discount rate

The construction age discount rate was introduced, a discount on premium rates for houses newly constructed under the ongoing Building Standards Law, in other words, for houses newly constructed after June 1, 1981, in case the construction period of the building is confirmed with documents such as building registration certificates. This discount rate was 10%.

b. Earthquake resistance class discount rate

The earthquake resistance performance of buildings is indicated as earthquake resistance class (three classes) in the building performance appraisals by the housing performance indication system of the Housing Quality Guarantee Law, or in earthquake-resistance performance appraisals by seismic evaluation. The earthquake resistance class discount rate, a discount on the premium rate on the basis of these, was introduced. The applicable discount rate was 30% for the earthquake resistance class of 3, the highest earthquake resistance performance, 20% for class 2, the second highest earthquake resistance-performance, and l0% for class 1.

3.3. Victim Reconstruction Support and Earthquake Insurance

Since exceedingly many houses suffered damage due to the Hyogoken-Nanbu Earthquake, at the peak 320,000 people had no other recourse but to live as evacuees in the more than 1,200 evacuation, areas such as schools; and, afterwards 48,300 first-aid temporary housings were constructed for the victims.

On the other hand, many monetary donations were sent from all across the nation, with the amount exceeding 17 billion yen. However, since the number of the victims was large, the amount distributed to each was low, and was insufficient as aid for them, and the rebuilding of houses did not progress rapidly. Against this such background, autonomous bodies, various types of organizations, political parties, etc., performed various investigations concerning the two support systems: house rebuilding support and life rebuilding support for victims of natural disasters.

Additionally, in relation to house rebuilding support, discussions were actively made concerning earthquake insurance, and revisions were performed in 1996 and 2001.

Discussion of life rebuilding support for victims progressed well and a ACT concerning Support for Rebuilding dwellings of Disaster Victims was established in 1998 and put into effect, becoming Japan’s first publicly-supported individual compensation system.

House rebuilding support system for victims

Concerning a house rebuilding support system for victims of natural disasters, many suggestions and recommendations were made by various types of organizations, autonomous bodies, political parties, and individuals, etc., after the Great Hanshin-Awaji Earthquake. Concerning these suggestions and recommendations, beginning with the various political parties, and also in administrative and citizen's groups, etc., various discussions and investigations were performed. In particular, discussion centering on the aforementioned Association of Diet Members to Protect the Nation from Natural Disasters has been ongoing. The discussion continues at present as well, differentiated from the ongoing earthquake insurance system, concerning the indemnity system from the establishment of a new foundation system for house rebuilding support, or mutual aid systems targeting the whole nation.

Livelihood rebuilding support system for victims

Various discussions were also performed about Livelihood recovery and rehabilitation support for victims of natural disasters, in parallel with the discussions of house rebuilding support. In particular, bills and suggestions, etc., concerning a publicly-supported individual compensation system were made.

Livelihood recovery and rehabilitation support is a matter of providing support for victims who are having difficulties rebuilding their Livelihood for economic reasons and discussions on said started about one year after the Great Hanshin-Awaji Earthquake, with bills being proposed by citizen's groups and Diet meembers. Thereafter, discussion moved forward rapidly, and a bill was established in 1998 and put into effect. Specifically, this system provides support money of a maximum of one million yen in accordance with the victim's annual income, in case of suffering damages exceeding a certain scale due to natural disaster, and, moreover, when the housing is completely destroyed.

This system will be operated employing a total of 60 billion yen as a fund, which is to be contributed by the prefectures in accordance with their share. Additionally, there is a system where in case support money is supplied from this fund, half the supplied amount will be subsidized by the nation.

4. Specifics of Earthquake Insurance

Since the Government is undertaking the reinsurance for the earthquake insurance, necessary laws have been constituted, such as the "Laws Concerning Earthquake Insurance." Pursuant to these laws, coverage of insurance, losses to be covered, payment methods of insurance claims, participation method, amounts insured, etc., are set forth. Specifics of earthquake insurance as of April 2002 are as follows.

4.1. Coverage of Insurance

The coverage of earthquake insurance policies is limited to buildings for residential use and/or movables for living (households and personal properties) pursuant to the Earthquake Insurance Law. Specifically, the scope of the coverage of insurance is set forth as follows:

Buildings for residential use

This shall consist of buildings, all of or part of which are provided for residential use.

Movables for living

This shall consist of furniture, equipment and clothing used for living and other movables usually necessary for living; provided, however, that gemstones, semiprecious, noble metals, pearls and the products of said, products of tortoiseshell, coral, amber, ivory, cloisonne enamel, and calligraphic works and paintings, antiques and artworks and crafts, the value of one piece or one pair of which exceeds 300,000 yen, are excluded.

4.2. Losses to be covered

Losses to be covered in earthquake insurance are losses arising concerning the object Insured due to fire, destruction, burial or flood directly or indirectly caused by earthquake, volcanic eruption or tsunami due to said (hereinafter referred to as the "Earthquake, etc."), and, moreover, the degree of loss is total loss, half loss or partial loss. Total loss, half loss or partial loss is defined in earthquake insurance as follows:

Total loss

– Buildings:

  Cases in which the amount of loss of major structural parts of the building (framework (pillars, beams, etc.), foundations, roofs, outer walls, etc.) comes to no less than 50% of the market value of the relevant building, or cases in which floor space burned and lost or washed away comes to no less than 70% of the total floor space of the relevant building. The amount of loss includes minimum expenses considered to be directly necessary for the recovery of foundations, etc., for the restoration of the building (land re-grading expenses, etc.) (same as half loss and partial loss).

Additionally, in case buildings for residential use become incapable of being lived in due to the occurrence of imminent dangers due to landslide or other disasters due to Earthquakes, etc., the buildings shall be deemed to be total loss.

– Movables:

Cases in which the amount of loss of movables a household and personal properties comes to no less than 80% of the market value of the movables.

Half loss

– Building:

Cases in which the amount of loss of major structural parts of the building comes to no less than 20% and no more then 50% of the market value of the relevant building, or cases in which floor space burned and lost or washed away come to no less than 20% and no more than 70% of the total floor space of the relevant building

– Movables:

Cases in which the amount of loss of a movables come to no less than 30% and no more than 80% of the market value of the movables.

Partial loss

– Building:

When the amount of loss of major structural parts of the building comes to no less than 3% and no more than 20% of the market value of the building, or when a building for residential use is flooded above the floor level or flooded in excess of 45 centimeters from the ground due to water damage due 'to floods, etc., caused by Earthquake, etc., shall also be deemed to be partial loss.

– Movables:

Cases in which the amount of loss of a movables come to no less than 10% and no more than 30% of the market value of the movables.

4.3. Payment Method of Insurance Claims

Payment methods of insurance claims shall be as follows, the same for both buildings for residential use and movables for living.

Total loss

The entire amount insured of earthquake insurance (100%) shall be paid; provided, however, that such shall be limited to the insurable value.

Half loss

> An amount equivalent to 50% of the amount insured shall be paid; provided, however, that such shall be limited to an amount equivalent to 50% of insurable value.

Partial loss

> Amount equivalent to 5% of the amount insured shall be paid; provided, however, that such shall be limited to an amount equivalent to 5% of insurable value

4.4. Participation Method

Earthquake insurance policies shall be participated in through policies incidental to fire insurance for residences covering buildings for residential use or movables for living.

Additionally, when a warning statement against earthquake disaster under the Large Scale Earthquake Countermeasures Act (Law No.73 of 1978) targeting the Tokai Earthquake (hereinafter referred to as the "Warning Statement") has been issued, concerning the object of insurance located in the area designated as the Area under Intensified Measures against Earthquake Disaster under the said Law, during the period from the time when the Warning Statement was issued till the day of issuance of the statement of withdrawal of the warning against the earthquake disaster, no new earthquake insurance policies may be entered into; provided, however, that earthquake insurance policies that had been entered into by the time the Warning Statement was issued and expired after the Warning Statement, can be renewal, if the insured and object insured are the same, and if the amount is the same or lower.

4.5. Amount Insured

The amount insured for the earthquake insurance policies is set forth under the Earthquake Insurance Law as being equivalent to an amount no less than 30% and no more than 50% of the amount insured of the principal contract, and said amount is set forth in the enforcement ordinance as limited to 50 million yen for buildings for residential use and 10 million yen for movables for living.

4.6. Limit of Total Amount of Insurance Claims to be Paid

Losses due to earthquakes differ greatly depending on the scale, place of occurrence, time of earthquake occurrence and meteorological conditions, etc., and sometimes the losses can be gigantic. Therefore, it is impossible to estimate correctly how gigantic a loss will occur due to a great earthquake in the future.

Thereupon, in order for the Government and the insurance companies to secure the payment of insurance claims due to earthquakes, a limit amount of total payments of insurance claims due to a single earthquake, etc., (hereinafter referred to as the "Insurance Claim Total Payment Limit"), with the shares of burden and burden amounts for the insurance companies and the Government is stipulated in the enforcement ordinances and regulation enforcing of the Earthquake Insurance Law. This Insurance Claim Total Payment Limit is 4.5 trillion yen as of April 2002. The share of burden of and burden amount of the insurance companies and the Government will be stated in Section 5 "Reinsurance."

It has been determined that in case the total amount of insurance claims to be paid due to a single Earthquake, etc., exceeds the Insurance Claim Total Payment Limit, the respective insurance claims can be reduced and paid in accordance with the proportion of the Insurance Claim Total Payment Limit to the total amount of insurance claims to be paid.

Two or more Earthquakes, etc., having occurred within 72 consecutive hours shall be deemed collectively to be a single Earthquake, etc., and whether or not the above reduction of insurance claims is to be performed shall be judged; provided, however, that this shall not apply to the situation where the areas affected do not overlap at all.

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5. Reinsurance and Liability Reserves

5.1. Reinsurance

Normally, reinsurance contracts are made between private insurance companies; however, in the earthquake insurance systems of Japan, reinsurance contracts are performed not only with private insurance companies, but also with the Government.

The major reasons for such are the following two points:

1. Earthquakes have a possibility to cause extremely massive losses and it is difficult for private insurance companies to share the risk alone.
2. In order to standardize the risk for great earthquakes, which occur at a low frequency, the income and outgo of insurance in the extraordinarily long run must be considered, and it is difficult for private insurance companies alone, which consider the short-term balance of insurance, to manage stably.

In order for the Government to undertake reinsurance contracts for earthquake insurance, the Earthquake Insurance Law has been constituted. This Law sets forth that the reinsurance partners for the Government shall be reinsurance companies. Therefore, Japan Earthquake Reinsurance Company, Ltd. (hereinafter referred to as the "J.E.R."), which only handles reinsurance of earthquake insurance, was established in 1966 together with the establishment of earthquake insurance.

Reinsurance structure

The earthquake insurance systems in Japan are operated subject to the undertaking of reinsurance by the Government.

1. Reinsurance agreement between private insurance companies and the J.E.R.

   Private insurance companies selling earthquake insurance inside Japan in accordance with the Earthquake Insurance Law execute the Earthquake Reinsurance Treaty (A) (hereinafter referred to as the "A Reinsurance Treaty") with the J.E.R. In accordance with this A Reinsurance Treaty, private insurance companies shall have the J.E.R. perform reinsurance of all the insurance liability of the undertaken earthquake insurance contracts and the J.E.R. shall undertake such.

2. Reinsurance agreement between the J.E.R and the private insurance companies

   Of the reinsurance liability undertaken pursuant to the Special Contract A in above (1), the J.E.R. performs reinsurance for respective private insurance companies of a part of the remainder of the liability after the Government performs reinsurance. This part is executed between J.E.R. and the various private insurance companies respectively (including The Toa Reinsurance Company Limited, hereinafter referred to as the "Private Insurance Companies, etc.") for the risk diversification of the J.E.R., and is called Earthquake Reinsurance Treaty (B) (hereinafter referred to as the "B Reinsurance Treaty").

3. Reinsurance agreement from the J.E.R. and the Japanese Government

   The J.E.R., under the reinsurance agreement with the Government, performs reinsurance again with the Government of part of the reinsurance liability which was undertaken from the direct insurance company pursuant to the A Re insurance Treaty in above (1). This reinsurance agreement with the Government is called "Excess of Loss Reinsurance" (hereinafter referred to as the "C Reinsurance Treaty"), and is the method by which reinsurance claims are to be paid in case the total payment of insurance claims due to a single Earthquake, etc., exceeds a certain amount.

Liability sharing of insurance companies and Japanese Government

Burden sharing and the total maximum liability of insurance companies (the J.E.R. and the Private Insurance Companies, etc.) and the Government for insurance claims to be paid due to a single Earthquake, etc., are stipulated in the enforcement ordinances and enforcement ordinance regulations of the Earthquake Insurance Law. In "earthquake insurance reinsurance scheme", the horizontal axis is the amount of burden due to a single Earthquake, etc., and the vertical axis is the proportion of burden of insurance companies and the Government. That is, in accordance with this scheme, payment of up to 75 billion yen shall be borne 100% by the insurance companies and concerning the payment amount of 75 billion yen and up to 1.0774 trillion yen, insurance companies and the Government shall each bear 50% of the payment of insurance claims. Moreover, the Government shall bear 95% and insurance companies the remaining 5% of payments for amounts exceeding 1.0774 trillion yen.

The Insurance Claim Total Payment Limit due to a single Earthquake, etc., is stipulated to be 4.5 trillion yen as of April 2002. This payment limit is determined so that there should be no obstacle to payment of insurance claims even in case a huge earthquake of the Great Kanto Earthquake class should occur, and the burden of share of insurance companies for this amount is 747.33 billion yen, while the burden of share of the Government for this amount is 3.75267 trillion yen.

It is stipulated that in case the total amount of insurance claims to be paid due to a single Earthquake, etc., exceeds 4.5 trillion yen, the Aggregate Limit, the respective insurance claims can be reduced and paid in accordance with the proportion of the Aggregate Limit to the total amount of insurance claims to be paid.

5.2. Liability Reserves

The frequency of occurrence of earthquake disasters is low, and besides, although they sometimes cause massive losses, it is impossible to predict when they will occur. Therefore, as for insurance premiums paid by policyholders, both insurance companies and the Government are obligated by the law to accumulate the total amount of such, excluding the portion of necessary expenses for contracts, as liability reserve in preparation for future earthquake disasters.

Additionally, it is obligated that all the investment profits from the accumulated liability reserves also be accumulated as liability reserves.

Respective insurance companies are respectively accumulating the insurance premiums distributed in accordance with the respective burden of share as liability reserves, and are also accumulating all the investment profits from the accumulated liability reserves as liability reserves. The J.E.R. is managing and performing investment of these liability reserves in lump sum so as to pay insurance claims quickly to the victims of earthquake disasters. Investment of these liability reserves is limited to savings, national bonds, public bonds and corporate bonds, etc., since liquidity and safety of investment are required at the time of earthquake disasters.

The Government is accumulating the reinsurance premiums obtained and all the investment profits from the liability reserves as liability reserves. These liability reserves are accumulated separately from general accounting, under the Earthquake Insurance Special Accounting Law.

Annex 1

List of Speakers and Presentations at the Conference*

Session 1 - Insurability of catastrophic risks

- Economics of catastrophe risk insurance, *Christian Gollier (University of Toulouse).*
- Insurability of terrorism risk: challenges and perspectives, *Howard Kunreuther and Erwann Michel-Kerjan (Wharton School, University of Pennsylvania).*
- Industrial, technological and other catastrophes, *Christian Lahnstein (Munich Re).*
- Recent trends in the catastrophe risk insurance/reinsurance market, *Patrick Murphy O'Connor (Benfield).*
- Role of the reinsurance industry in the management of weather related risks, *Peter Zimmerli (Swiss Re).*
- Issues and options in the management of terrorism risk through insurance, *Robert Reville (Rand Corporation).*
- Current state of the coverage for war and terrorism risks - including NBC - in the aviation sector, *Eugene Hoeven (IATA)*
- Free market solutions for terrorism risks coverage, *Ben Garston (MAP Underwriting and Lloyd's Terrorism Panel).*

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* Power point presentations summarising papers included in this publication as well as other presentations made at the conference are available on the OECD Insurance homepage: http://www.oecd.org/daf/insurance.

- Improving insurability and affordability: the role of insurance in hazard identification, risk assessment, risk prevention and mitigation for industrial/chemical accidents, *Satyananda Mishra, IAS, Disaster Management Institute, Bhopal - Government of Madhya Pradesh, India).*

Session 2 - Financial market solutions to manage catastrophic risks

- International financing solutions to catastrophic risk exposures, *Torben Juul Andersen (Copenhagen Business School).*
- The use of risk linked securities to manage catastrophic risks, including terrorism, *Christian Mumenthaler (Swiss Re).*
- Current challenges in terrorism risk securitization, *Gordon Woo (RMS).*
- Financing catastrophic risks in non-OECD countries: challenges and perspectives*, Reinhard Mechler (IIASA).*
- Current market trends for catastrophe bonds and risk kinked securities, *Christopher McGhee (MMC Securities, Guy Carpenter).*
- The potential for new risk transfer instruments to cover terrorism risks, *Michele David (The Bond Market Association).*
- Rating agency's perspective on catastrophe bonds and risk linked securities, *Rodrigo Araya (Moody's).*

Session 3 - Role of governments and development of public-private partnerships for catastrophe risk management

- Role of governments in natural catastrophe risk management and financing in OECD countries, *Paul K. Freeman (University of Denver).*
- Catastrophe insurance programs in emerging countries: field experience, *Eugene Gurenko (World Bank, Financial Sector Operations and Policy Department).*
- Potential role for governments in terrorism coverage, *Dwight Jaffee (Haas School of Business, UC Berkeley).*
- Public-private partnerships to cover terrorism risks in OECD countries, *John Cooke (International Economic Relations Consultant, London).*

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- Role of the US government in the prevention and mitigation of terrorism risks, *Robert Liscouski (Infrastructure Protection Office, Department of Homeland Security, USA).*
- Disaster risk management policy in Japan, *Kazuhiro Kawachimaru (NIPPONKOA Insurance Company Ltd).*
- The Spanish experience in the management of extraordinary risks, including terrorism, *Ignacio Machetti (Consorcio de Compensación de Seguros).*
- A stakeholder approach for developing a public-private partnership: the Hungarian case*, Reinhard Mechler (IIASA).*
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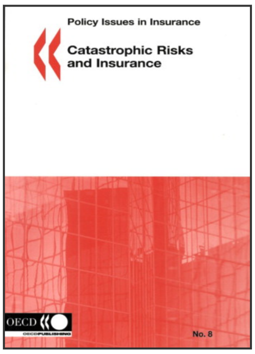
* Background Note of Mr Kawachimaru's presentation (NIPPONKOA Insurance Company Ltd), based on *Governmental Earthquake Insurance System in Japan*, from *Earthquake Insurance in Japan*, written and published in March 2003 by Non-Life Insurance Rating Organization of Japan.



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