

FSA's effort on Life Insurer's Risk Management

-- Including its View on Great East Japan Earthquake --

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Risk Analysis of Insurance Industry
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Effects of the Great East Japan Earthquake on Insurance Industry

- Insured Current Loss Estimates : \$33.7bn (¥2.7 trillion) * \$1 = ¥80
 - Non-life (Earthquake insurance for Household) : \$12.1bn
 - Non-life (mainly commercial line) : \$7.5bn (5/19)
 - sum of top 5 non-life companies
 - Life insurance : \$2.5bn (4/15)
 - Cooperative Insurance (ex. Zenkyoren) : \$11.2bn (Apr-May)

<reference>

Loss estimates of RMS : \$21 - \$34bn (4/12)

Loss estimates of EQECAT : \$22 - \$39bn (5/11)



Effects of the Great East Japan Earthquake on Insurance Industry

- Limited impacts in soundness of Japanese insurance industry
 - Earthquake Insurance system for household with government support
 - Liability sharing between insurance companies & government
 - Liability reserves
 - Limited burden for commercial lines
 - sum of top 5 insurers : \$2.5bn (¥200bn)
 - careful underwriting, Catastrophe (Cat) cover, Cat reserves, etc.
 - Limited burden for life insurers

Non-life Insurance Business, FY2010

¥ 100 million, %

	Net Premiums		Cat Loss (Net incurred)		Underwriting	Interest &	Capital	Net Income	
	yoy		2010/3		Profit	Dividend	gain/loss	2010/3	
<Tokio Marine Group>									
Tokio Marine Nichido	17,427	0.4%	1,040	229	-311	753	1,060	1,007	945
<MS&AD Group>									
Mitsui Sumitomo	12,305	2.2%	454	155	-503	607	308	229	255
Aioi Nissay Dowa	10,973	-0.8%	203	89	-333	429	204	-114	212
<NKSJ Group>									
Sompo Japan	12,566	-0.2%	537	133	-97	471	69	121	428
Nippon Koa	6,206	-2.0%	317	130	-250	221	90	-64	131

¥ 100 million, %

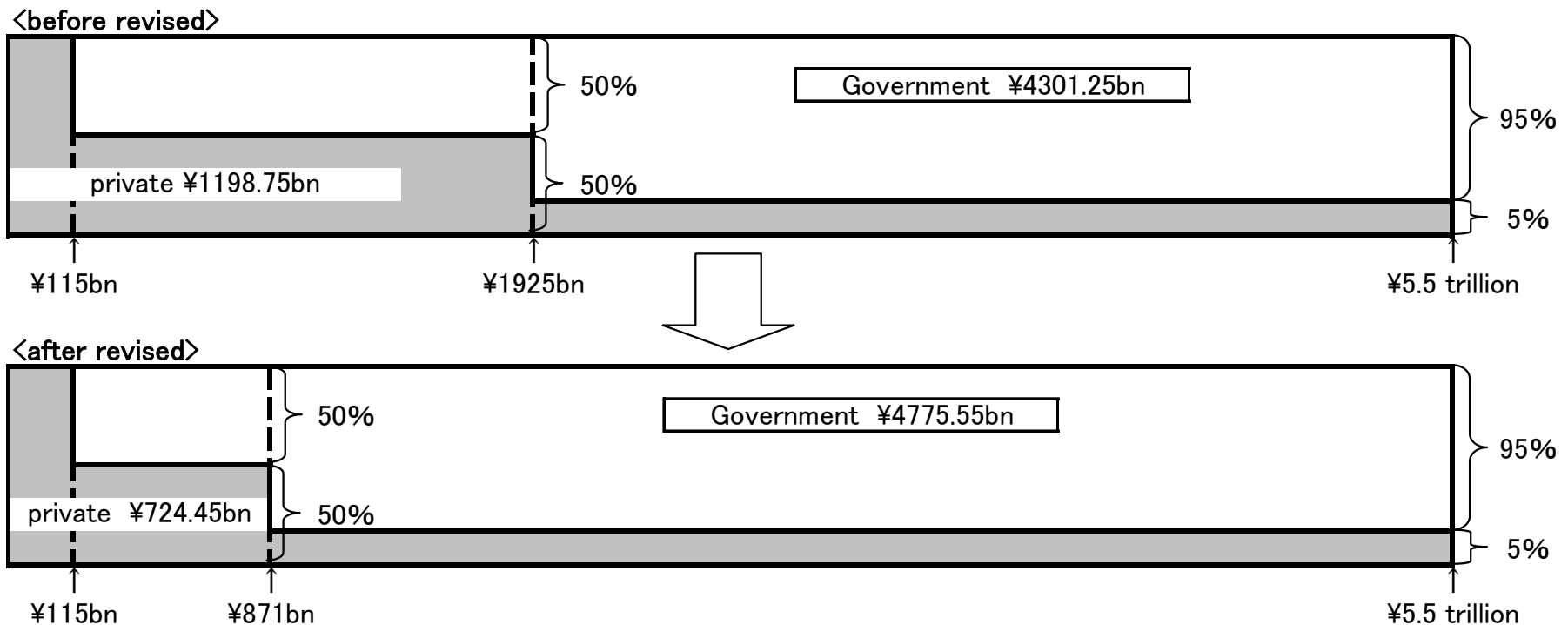
	Net Assets	Valuation Differences		Cat Loss Reserves		Investment yield		Solvency Margin Ratios	
		yoy		yoy		2010/3		yoy	
<Tokio Marine Group>									
Tokio Marine Nichido	16,762	8,942	-2,237	8,995	147	-0.9%	10.0%	823.8%	-28.8%
<MS&AD Group>									
Mitsui Sumitomo	10,540	4,406	-1,292	5,183	198	-1.1%	10.3%	768.8%	-70.6%
Aioi Nissay Dowa	4,767	164	-674	3,138	-197	-0.7%	8.2%	681.6%	#N/A
<NKSJ Group>									
Sompo Japan	6,960	2,958	-905	4,207	260	-1.4%	9.0%	748.6%	-51.4%
Nippon Koa	3,655	1,355	-424	2,401	55	-0.8%	7.6%	642.9%	-99.6%

* Aioi and Nissay Dowa merged in October 2010

* Interest & Dividend excludes investment income on savings-type insurance

Reinsurance structure of the earthquake insurance systems for household

- Liability sharing of insurance companies and Japanese government is as below
 - We revised liability sharing in May 2011, after the quake.



Effects of the Great East Japan Earthquake on Insurance Industry

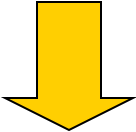
Significant natural catastrophes

in million USD

Period	Event	Country	Overall losses (A)	Insured losses (B)	(B)/(A)
2005	Hurricane Katrina	USA	125,000	62,200	49.8%
2011	East Japan Earthquake	Japan	210,000	30,000	14.3%
2008	Hurricane Ike	USA	38,300	18,500	48.3%
1992	Hurricane Andrew	USA	26,500	17,000	64.2%
1994	Northridge Earthquake	USA	44,000	15,300	34.8%
2004	Hurricane Ivan	USA	23,000	13,800	60.0%
2005	Hurricane Wilma	USA	22,000	12,500	56.8%
2005	Hurricane Rita	USA	16,000	12,100	75.6%
2011	Christchurch Earthquake	New Zealand	20,000	10,000	50.0%
2004	Hurricane Charley	USA	18,000	8,000	44.4%
2010	Chile Earthquake	Chile	30,000	8,000	26.7%
2010	Christchurch Earthquake	New Zealand	6,500	5,000	76.9%
1995	Hanshin Earthquake	Japan	100,000	3,000	3.0%
1999	Winter Storm	France etc.	11,500	5,900	51.3%
1991	Typhoon 19	Japan	10,000	7,000	70.0%
2007	Winter Storm	UK etc.	10,000	5,800	58.0%

Munich Re NatCatSERVICE

Development of Solvency Regulation

- “convoy system” to current system
 - Before new insurance business law (-1995)
 - Regulator had great authority.
 - They could not prevent from worsening life insurer’s solvency.
- 
- Current regulatory system
 - self-discipline
 - solvency regulation
 - market discipline



Development of Solvency Regulation

- Introduction of Solvency Margin Ratio (1996)
- Implementation of Prompt Corrective Action system for insurance companies (1999)
- Report by project team on the solvency margin regime (2007)
 - Near-term : improving reliability under the current framework
 - Mid-term : considering the implementation of economic value-based solvency regime
- Financial crisis (2008-)
- Revision of Solvency Margin Ratio (2010)
- Field test (2010)



Solvency Margin Ratio

$$\text{Solvency Margin Ratio} = \frac{\text{Margin (Capital)}}{1/2 * \text{Risk Amount}} > 200\%$$

Prompt corrective action

200% and more	No action → Early warning system
less than 200% and 100% or more	FSA issue a business improvement administrative order to the company.
less than 100% and 0% or more	FSA order ... <ul style="list-style-type: none"> – Submission of plans to increase the capability of paying claims – Prohibitions of payment of dividends – Restraint on operating expenses – Prohibitions of new business etc.
Less than 0%	FSA order suspension of business

Solvency Margin Ratio (Risk Amount)

Risk category	Case assumed	Amount measured
Insurance risks	Insurance claims payment is higher than normal expectations.	Certain level of insurance claims payment minus normally expected level
Assumed interest risks	Investment income earned is lower than originally assumed income.	Expected amount of the gap
Asset management risks		
Price fluctuation risks	Capital loss is higher than normal expectations.	Amount at risk with a 90% probability
Credit risks	Counterparty defaults.	Expected amount of loss (including that from credit derivatives)
Other risks for subsidiaries, derivative transaction, reinsurance and reinsurance recoverable		
Major catastrophe risks (general insurance only)	A natural disaster strikes.	Amount of damage caused by the largest earthquake or typhoon
Operational risks	Something not in the above categories happens.	2 or 3% of the total of the other risks



Near-term revision

- Improving reliability under the current framework
 - Tightening of margin allowance
 - Tightening and refining risk measurement

Solvency Margin Ratios, end of March 2011

	Current		Revised
Nippon life	966.2%	→	529.1%
Dai-ichi life	983.9%	→	547.7%
Sumitomo life	1002.2%	→	636.5%
Meiji Yasuda life	1156.8%	→	663.6%
Tokio Marine Nichido	823.8%	→	603.4%
Mitsui Sumitomo	768.8%	→	534.7%
Aioi Nissay Dowa	681.6%	→	508.7%
Sompo Japan	748.6%	→	562.5%
Nippon Koa	642.9%	→	521.8%



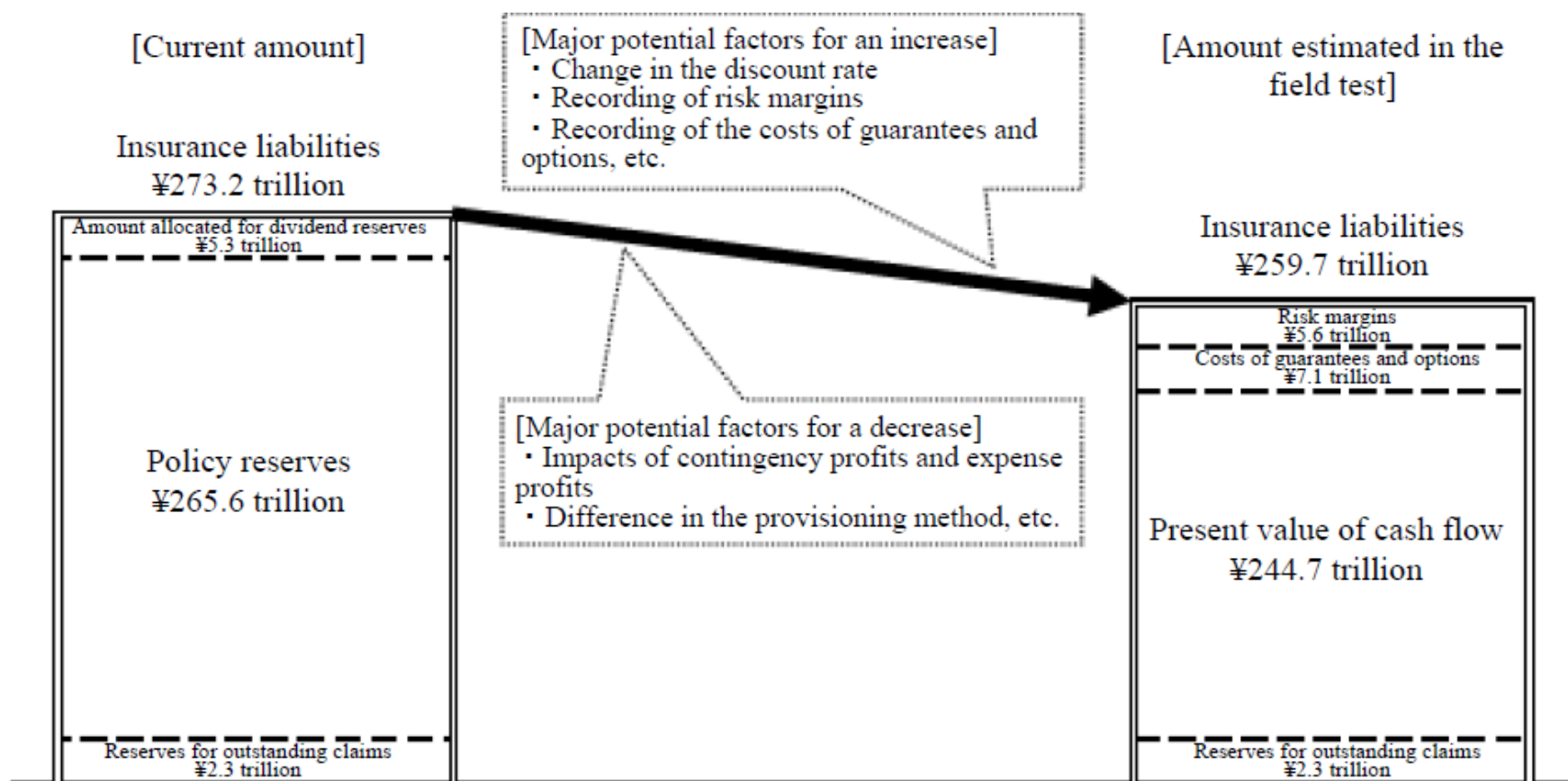
Field test

- Calculation of economic value-based insurance liability on a trial basis
 - Recognize the issues in the calculation process and utilize the results as reference going forward
 - Request all insurance companies (47 life & 50 non-life insurers)

- Summary of results disclosed in May 2011
 - Responses from all companies
 - Lots of positive opinions
 - Harmonization of their risk management
 - International progress
 - Issues in the calculation load

- Based on the results of the Field test, we continue to examine practical issues with the Institute of Actuaries of Japan, Non-life Insurance Rating Organization of Japan, and so on.

Changes in the amount of insurance liabilities (Total for life insurance companies)



Note 1: Costs of guarantees and options included are those of companies that calculated the costs.

Note 2: The current amount of policy reserves does not include contingency reserves and prepaid unearned premiums.

Note 3: Potential factors for an increase or a decrease may produce opposite effects depending on the characteristics of individual insurance policies of individual companies.



Enterprise Risk Management (ERM) of Insurers

- Risk profile of Japan's Insurers
 - Underwriting risk
 - Mortality / Morbidity = limited & stable
 - Longevity
 - Catastrophe (Wind & Flood, Earthquake)
 - Investment risks
 - ALM risk ('negative spread' problem)
 - Price fluctuation risk
 - Credit risk
 - Liquidity risk = largely limited
 - Operational risk



Enterprise Risk Management (ERM) of Insurers

- as compared to Bank
 - Wide variety of risk category
 - some risks are difficult to classify
 - Non-financial related risks
 - Developing valuation technique
 - Long-term liability, especially life insurance
 - Large difference between current system and economic value-based system
 - merit of economic value-based system
 - effective ALM (asset liability management)
 - avoid ‘latent loss’ , etc.

Mismatch between the locked-in liability and the economically valued assets

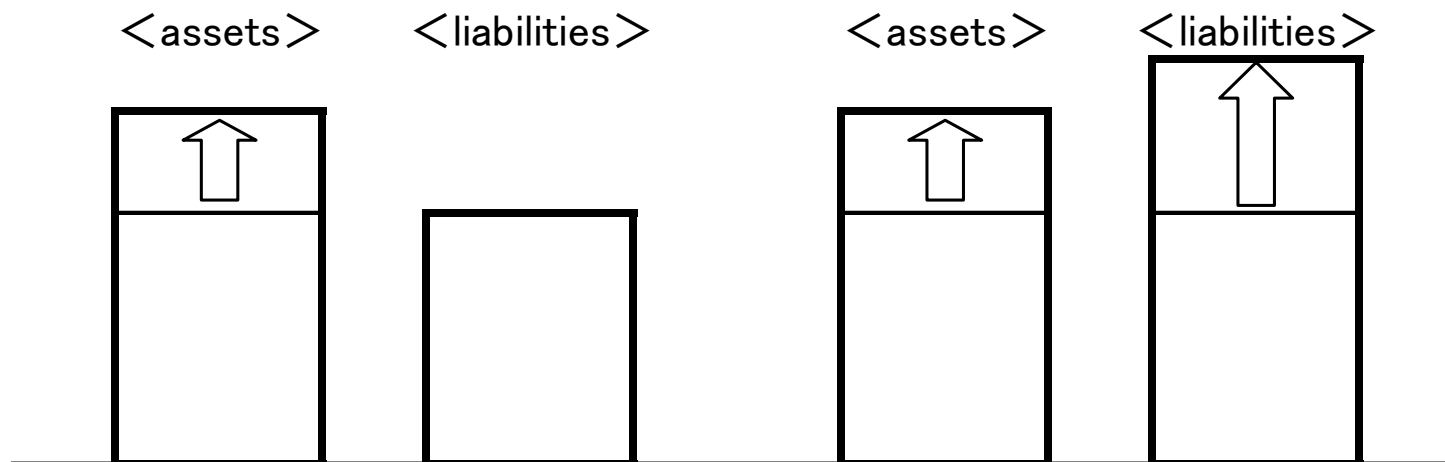
Estimated maturity of life insurer's bonds (year)

	05/3	06/3	07/3	08/3	09/3	10/3	11/3
Nippon	7.48	7.98	8.65	9.01	9.58	9.74	10.90
Dai-ichi	7.67	9.07	9.70	10.19	10.67	10.90	11.40
Sumitomo	5.56	6.37	6.47	7.75	9.40	10.63	11.32
MeijiYasuda	7.37	6.64	6.75	7.15	8.45	9.55	11.26
Mitsui	9.86	9.65	9.04	9.62	10.27	10.54	10.73
Asahi	5.83	7.93	8.70	9.53	9.81	9.82	10.73
Taiyo	6.51	7.42	7.62	8.54	10.06	10.61	10.87
Daido	4.86	5.08	4.59	4.51	4.71	5.43	6.80
Fukoku	5.73	5.99	7.82	8.92	10.10	10.79	11.62

* estimate as 0-1y = 0.5y, 1-3y = 2y, 3-5y = 4y, 5-7y = 6y, 7-10y = 8.5y, 10y- = 15y

Mismatch between the locked-in liability and the economically valued assets

Effects of declining interest rates



* By current accounting principle

* Actually ...

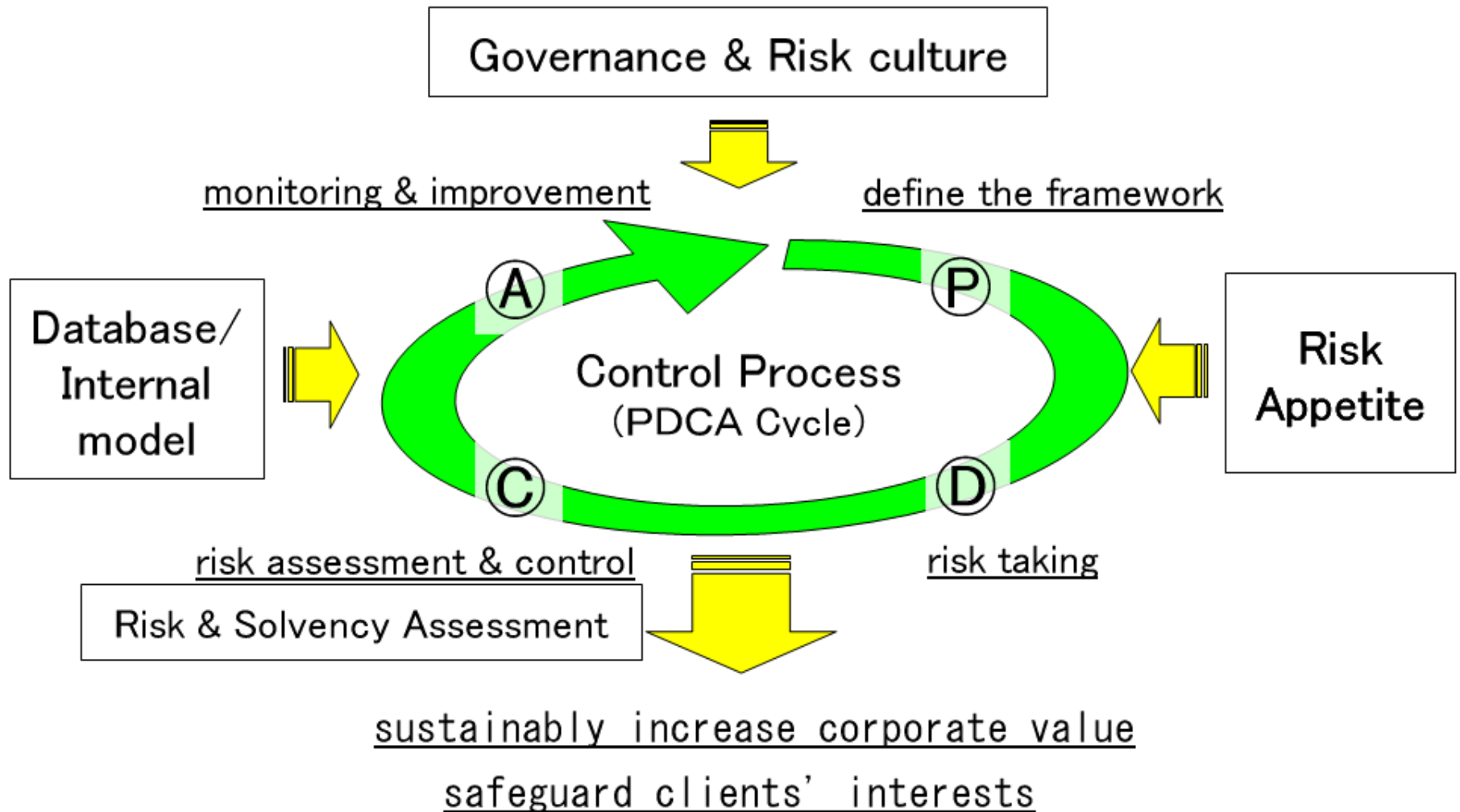
(If DuR of liabilities is greater than Dur of assets)



Enterprise Risk Management (ERM) of Insurers

- General concept of ERM
 - All relevant types of risk
 - Comprehensive coverage
 - Enterprise-wide management depending on their Risk Appetite
 - Continuing and group-wide activity
 - meet a strategic goal
 - sustainably increase corporate value
 - safeguard clients' interests

whole picture of ERM





Enterprise Risk Management (ERM) of Insurers

- Current status of ERM of major insurers
 - Be in an early stage for many insurers
 - Major insurers measure the amount of integrated risks and compare the risk amount with their capital
 - many groups are already shifting to the economic value-based risk management or using it in parallel with the current system
 - Challenge for top management
 - the grasp and use of the risk profile, clarification of risks allowed to be taken, the setting of the risk-tolerance level, and risk management differ from group to group
 - ERM may be effectively conducted only by particular divisions
 - ERM could be conducted as a matter of formality with no regard for its purpose or essence



Enterprise Risk Management (ERM) of Insurers

- Current status of ERM of major insurers
 - Room for improvement in each risk categories
 - Basel framework in Bank
 - We recognize the need for insurers' ERM based on their risk profile.
 - as compared to advanced ERM
 - Top management leadership for ERM
 - Clear relation between risk, capital and return
 - CRO as a specialist for risks
 - ERM is embedded in each segments.



ERM and the Supervisor

- Why do we FSA focus on insurers' ERM ?
 - The purpose of ERM is to enhance corporate value sustainably, with keeping their soundness
 - Essentially, ERM should be put into practice by insurers themselves, should not be pushed from outside.
 - We recognize to enhance corporate value sustainably, to contribute to protect policyholders
 - My book "Bankruptcies Caused by Lack of Governance – Reality of the Insurance Crisis in the Heisei Period"
 - Insufficient corporate governance increased bankruptcy risk.
 - Even if companies adopted excellent risk management systems, it does not mean that they implemented risk management properly if such a system or figures are not used in business operations.

Bankruptcies of mid-sized life insurers

	Total assets		100 million yen, %	
	Nissan life	yoy	Industry	yoy
FY 1985	3,680	19.1%	538,706	17.8%
FY 1986	4,441	20.7%	653,172	21.2%
FY 1987	6,964	56.8%	792,684	21.4%
FY 1988	13,230	90.0%	970,828	22.5%
FY 1989	16,270	23.0%	1,173,439	20.9%
FY 1990	18,555	14.0%	1,316,188	12.2%
FY 1991	19,443	4.8%	1,432,341	8.8%
FY 1992	20,285	4.3%	1,560,111	8.9%
FY 1993	21,029	3.7%	1,691,221	8.4%
FY 1994	21,461	2.1%	1,779,655	5.2%

percentage of the individual annuity in total reserve

<FY 1986>		<FY 1989>	
Nissan	Industry	Nissan	Industry
12.3%	2.9%	55.9%	6.8%

Bankruptcies of mid-sized life insurers

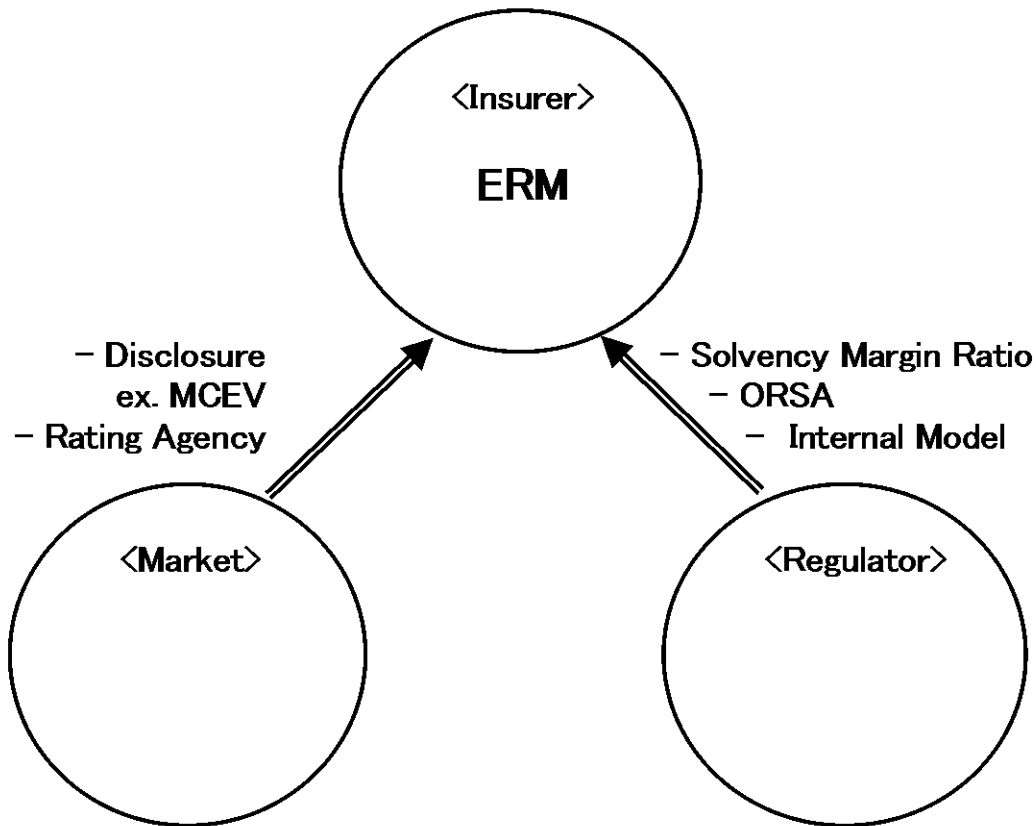
	Total assets		100 million yen, %	
	Kyoei life	yoy	Industry	yoy
FY 1985	12,124	20.5%	538,706	17.8%
FY 1986	15,037	24.0%	653,172	21.2%
FY 1987	18,996	26.3%	792,684	21.4%
FY 1988	24,601	29.5%	970,828	22.5%
FY 1989	30,009	22.0%	1,173,439	20.9%
FY 1990	35,034	16.7%	1,316,188	12.2%
FY 1991	39,343	12.3%	1,432,341	8.8%
FY 1992	44,803	13.9%	1,560,111	8.9%
FY 1993	50,641	13.0%	1,691,221	8.4%
FY 1994	54,357	7.3%	1,779,655	5.2%



ERM and the Supervisor

- Regulatory Developments
 - Supervisory Guideline for Insurance Companies
 - Newly-created for Integrated Risk Management
 - Promoting the sophistication of risk management in an annual Supervisory Policies for Insurance Companies
 - Revision on Insurance Inspection Manual
 - Newly-created checklist for 'Comprehensive Risk Management'
 - ERM hearing
 - It will be effective to not only set the minimum capital requirement under the solvency regime but also use a framework in which the FSA checks the status of insurers' own risk and solvency assessment.

ERM and the Supervisor





ERM and the Supervisor

- Points of our observation
 - We support Insurers' voluntary initiatives and encourage their implementing ERM
 - Not 'point out' 'detection', but 'encouragement'
 - Not in detail but in comprehensive and focus on important risks
 - Depending on their scale and risk profile
 - We stress 'governance and risk culture' 'risk appetite'
 - Without sufficient involvement by top management, ERM could be conducted as a matter of formality with no regard for its purpose or essence.
 - We focus on ALM.
 - Analysis and evaluation of insurance liabilities