

Field Tests of Economic Value-Based Evaluation and Supervisory Method

- Summary of the Results -

Table of Contents

I. Background and objectives	2
I.1. Background	2
I.2. Objectives	2
II. Contents	3
II.1. Summary	3
II.2. Insurance companies covered by the tests	3
II.3. Calculation method.....	3
II.4. Internal model.....	4
II.5. Major changes from the previous field tests	4
III. Summary of the results	5
III.1. Risk and solvency condition	5
III.2. Status of the internal models	5
III.3. Other issues	6
IV. Future challenges.....	7

I. Background and objectives

I.1. Background

1. An economic value-based solvency regime is a framework intended to appropriately recognize the financial conditions of insurance companies by consistently evaluating assets and liabilities based on economic value, and also contributes to the sophistication of their risk management. Therefore, the FSA has been conducting studies through field tests covering all insurance companies in June 2010 and June 2014, as well as dialogues with relevant parties.
2. On the other hand, the IAIS¹ is developing the ICS,² covering IAIGs³ on the premise of the economic valuation, and it conducted public consultation in July 2016 on the technical issues, such as valuation methods.

I.2. Objectives

3. In consideration of these circumstances, the FSA conducted the current field tests to comprehend to what practical extent insurance companies are dealing with the calculation of the economic value of assets, insurance liabilities, qualifying capital resources, capital requirements, etc., as well as the solvency position at the current low interest rate environment, with the aim of examining an appropriate evaluation and supervisory method for Japan.
4. The tests were conducted based on the technical specifications for the ICS field tests (as of June 2016).⁴ However, it should not be interpreted as a final direction for an evaluation and supervisory method, but rather intended to analyze the variance from the previous field tests and contribute to international discussions on the ICS in the IAIS.

¹ International Association of Insurance Supervisors

² Risk-based Global Insurance Capital Standard

³ Internationally Active Insurance Groups

⁴ Refer to the IAIS website. Based on current discussions in the IAIS, consideration is being given to changing some important issues, such as discount rates for insurance liabilities and capital requirements.

II. Contents

II.1. Summary

5. Insurance companies were requested to calculate the following items on market consistent economic value on both solo and consolidated bases. They were also requested to report, in the form of responses to a questionnaire, on practical issues and challenges that they encountered in the process of the calculation. The test period was June through December in 2016.

- a. Assets and other liabilities
- b. Current estimate of insurance liabilities
- c. Qualifying capital resource⁵
- d. MOCE⁶
- e. Capital requirement for individual risks

II.2. Insurance companies covered by the tests

6. All life insurance companies (41 companies) and non-life insurance companies (51 companies) in Japan were covered by the tests. Calculations on a consolidated basis were conducted at the ultimate parent insurance companies or holding companies in Japan.

II.3. Calculation method

7. The calculation methods were based on the MAV approach⁷ to the technical specifications for the ICS field tests.

8. The base date of the calculations was set in principle as March 31, 2016.⁸ In addition, calculations under the following scenarios were also conducted to comprehend sensitivity to economic assumptions.

- a. Change of only economic assumptions to those on March 31, 2015

⁵ Qualifying capital resources consist of Tier 1 and Tier 2. Tier 1 capital resources are regarded to have higher loss-absorption capacity.

⁶ Margin over the Current Estimate. Refer to the ICP (Insurance Core Principles) 14.7.

⁷ Market Adjusted Valuation. Although the GAAP+ approach is also being considered in the ICS, it was not field-tested in light of consistencies with our previous studies and potential workloads.

⁸ For some companies with practical difficulties, the base date was set as March 31, 2015. In that case, under scenario A., economic assumptions were changed to those on March 31, 2016.

- b. 50bps upward parallel shift of JPY yield curve
- c. 50bps downward parallel shift of JPY yield curve
- d. 10% downward stress for equity and real estate value
- e. 10% JPY appreciation

9. Regarding life insurance companies, the following two methods were field-tested to comprehend an effect caused by different extrapolation methods of discount rates⁹ for insurance liabilities.

- a. An extrapolation method in which the forward rate converges to the UFR^{10,11}
- b. An extrapolation method in which the forward rate of the final year for the subsequent years remains constant

II.4. Internal model

10. Insurance companies that have already used internal models for management purposes were requested to provide calculation results of the internal models. They were also requested to report, in the form of responses to a questionnaire, on variance analysis from the current field tests, as well as specifications and validation frameworks for the models.

II.5. Major changes from the previous field tests

11. Regarding discount rates for insurance liabilities, in addition to the changes of extrapolation methods for hyper-long-term rates, spread adjustments applied to risk-free rates were newly field-tested.

12. Regarding capital requirements, in addition to the changes of some risk factors and stress scenarios, calculations for mass lapse risk, some catastrophe risks such as terrorist attacks, pandemics and latent liability scenarios, and asset concentration risk were newly field-tested.

⁹ Discount rates for any maturities for which interest rates can be observed in liquid and reliable markets were determined based on the market interest rates, while those beyond the maturities need to be extrapolated in a certain method.

¹⁰ Ultimate Forward Rate

¹¹ This method is consistent with the technical specifications for the ICS field tests in which the last liquid point, the convergence period and the UFR for JPY were set to 30 years, 30 years and 3.5% respectively. The UFR was determined by a macroeconomic approach, and 3.5% for JPY was the sum of long term economic growth (1.5%) and long term target inflation (2.0%).

13. As for the rest, evaluations of assets and qualifying capital resources, calculations on a consolidated basis, etc. were newly field-tested.

III. Summary of the results

III.1. Risk and solvency condition

14. Average ESR¹² was 150% (for 41 life insurance companies) and 201% (for 51 non-life insurance companies) under the economic assumptions as of March 2015, and 104% (for life) and 194% (for non-life) as of March 2016, which means qualifying capital resources exceeded capital requirements in each case. It was also confirmed that the ESR for life insurance companies was sensitive to economic assumptions (especially JPY interest rates).

15. Based on some breakdown analysis on qualifying capital resources (numerator of the ESR) for life insurance companies, unrealized gains¹³ which made up a large proportion of capital resources were proved to be the main cause of net assets sensitivity to economic assumptions (Figure 1). Regarding non-life insurance companies, sensitivity to economic assumptions was smaller compared to life insurance companies (Figure 2).

16. Regarding the composition of capital requirements by risk category, the results are shown in Figure 3 (for life) and Figure 4 (for non-life).

III.2. Status of the internal models

17. It was confirmed that the use of the internal models for management purposes has accelerated in many companies, and that validation frameworks for the models have been sophisticated continuously by individual companies with the recognition of some challenges.

¹² Economic Solvency Ratio = Economic qualifying capital resources / Economic capital requirements

¹³ As one of the Tier1 components, this item includes unrealized gains/losses on investment assets as well as difference between insurance liabilities in the current regime and those based on economic value.

18. The validation of the internal models was carried out for the items which individual companies deem important, including data quality, appropriateness of calculation assumptions and methods, compliance with model governance, status of documentation, etc. Furthermore, the validation by model owners was combined with that by independent third parties as necessary to secure effectiveness of the validation.

19. Regarding the independent validation by third parties, it was confirmed that many companies used external auditors and/or consultants to complement some expertise in addition to internal audits. It was also confirmed that actual operations of the use of the external specialists were different from company to company, and that some companies changed outsourcing companies for model validation on a regular basis while others used the same company for both model development and validation.

20. Regarding variance analysis on the models from the tests, although the variances were different from company to company, the causes of the variances were analyzed and comprehended by individual companies.

III.3. Other issues

21. It was confirmed that extrapolation methods used for ultra-long-term discount rates for insurance liabilities had a substantial impact on the ESR of life insurance companies, especially in a situation where yield curves remain flattened. It was also confirmed that different extrapolation methods from the tests, such as the last liquid point, the UFR, etc., were widely used in actual risk management practices.

22. Based on asset management portfolios of life insurance companies, many companies suggested that it would be important to fully examine such issues as follows:

- What spread is added to discount rates for insurance liabilities
- How to reflect the impact of increasing investments in foreign bonds
- How to consider counter-cyclical measures during an economic downturn

23. Some companies advocated that a domestic solvency regime should reflect the unique features of insurance companies in Japan since the ICS is applied only to IAIGs. Others advocated that a solvency regime on a solo basis should reflect intra-group transactions¹⁴ appropriately since the ICS is on a consolidated basis.

24. Regarding general comments on the introduction of an economic value-based solvency regime, in the previous field tests, many companies commented on the securing of sufficient preparation periods and development of IT platforms, but in the current field tests, comments were mainly on some concerns and points to be considered relating to supervisory uses of economic value-based indices in a solvency regime.

IV. Future challenges

25. It is essential for insurance companies to maintain sufficient capital considering their risks to earn the trust of policyholders, etc. On that condition, it is necessary to secure returns through sound risk-taking in conjunction with risk management in response to environmental changes. In other words, insurance companies are required to make management decisions in consideration of the balance between returns, risks and capital, and when making these decisions, it is important that they would appropriately recognize their own financial conditions.

26. For the purpose of the appropriate recognition of the financial conditions of insurance companies, the ESR is a useful index which is calculated covering assets and liabilities at the base date, based on a scenario where future economic variables will change as per the expectation implied in the latest economic assumptions. On the other hand, under the calculation methods applied in the tests, the ESR is calculated based on the conservative economic assumptions that JPY interest rates will remain at a low level over several decades, under a special condition where a low and flattened JPY yield curve was observed.

¹⁴ Intra-group transactions include risk transfers to other companies within the group through reinsurance.

27. Since it was confirmed that these characteristics of the ESR became obvious in the tests, it was reacknowledged that multilateral assessment would be important for the financial conditions of insurance companies in consideration of the level of the ESR as well as their risk-taking activities and internal controls derived from existing supervisory tools, such as ORSA,¹⁵ cashflow analysis by appointed actuaries, etc.

28. If the ESR is introduced in a solvency regime, there may be cases where the ESR would invite excessively risk-adverse behavior which would pose unintended impacts on the long-term solvency of insurance companies, the financial market, the social role of insurance groups, etc., depending on how ESR is evaluated and what supervisory methods are used. Regarding the introduction of the ESR in a domestic solvency regime for insurance companies, in light of these unintended impacts and international trends, the FSA will conduct further examination with a strong emphasis on dialogue with relevant parties. Furthermore, the FSA will actively participate in discussions on the ICS in the IAIS with the awareness of these issues in mind.

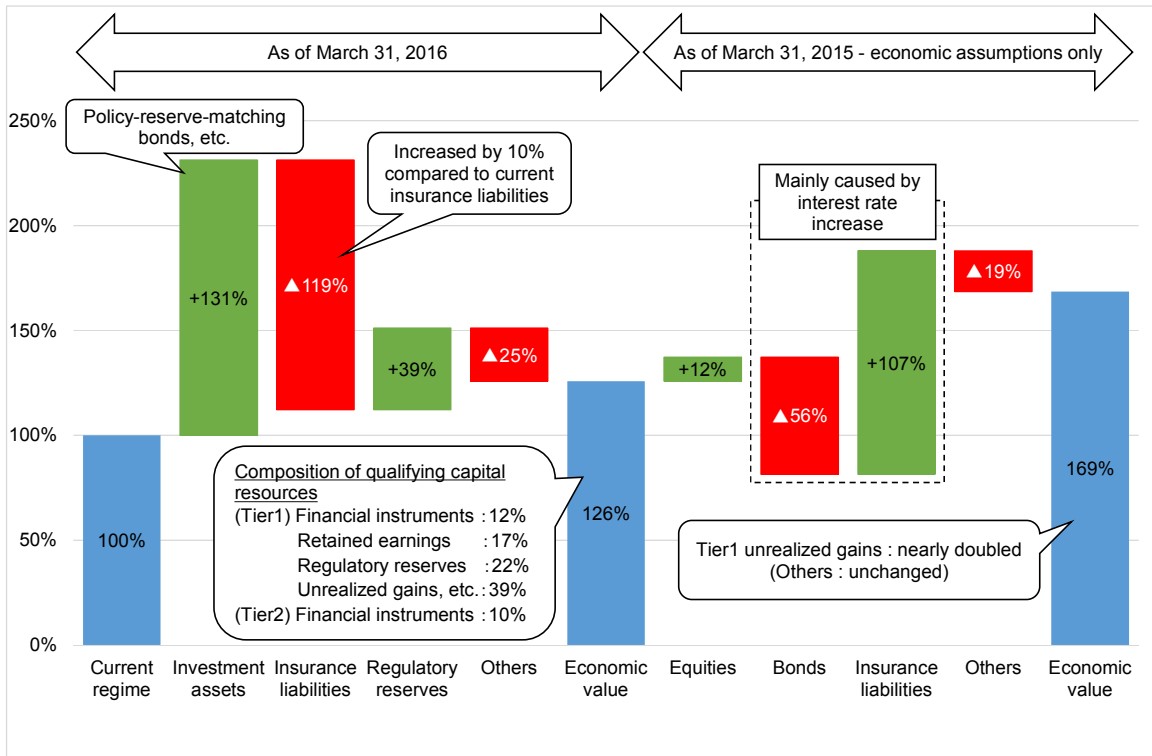
29. If internal models are used in a solvency regime, the FSA will review them efficiently based on the following:

- Importance of risks which the models cover
- Complexity and validation framework of the models
- Review framework in the FSA

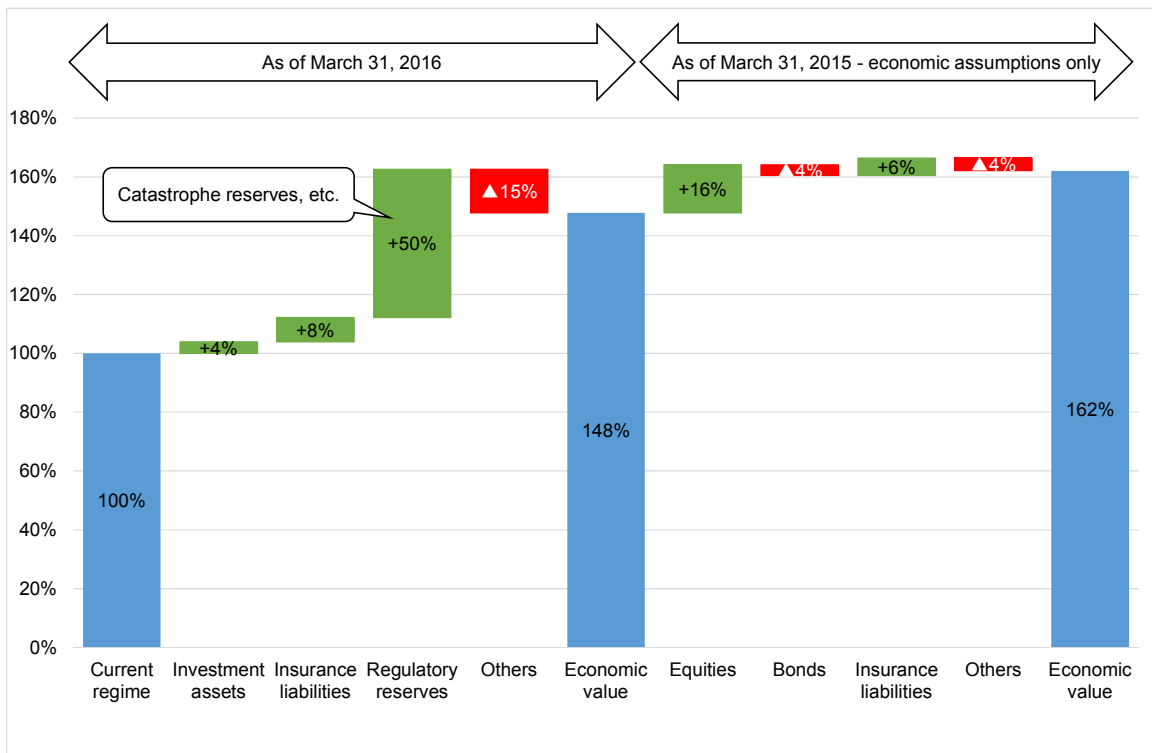
Furthermore, in order to secure comparability, the FSA considers it important to take proper care of the balance with standard models. From these points of view, the FSA will continue to conduct further examination on the uses of the models, and also encourage insurance companies to sophisticate their model validation framework through ORSA, etc.

¹⁵ Own Risk and Solvency Assessment

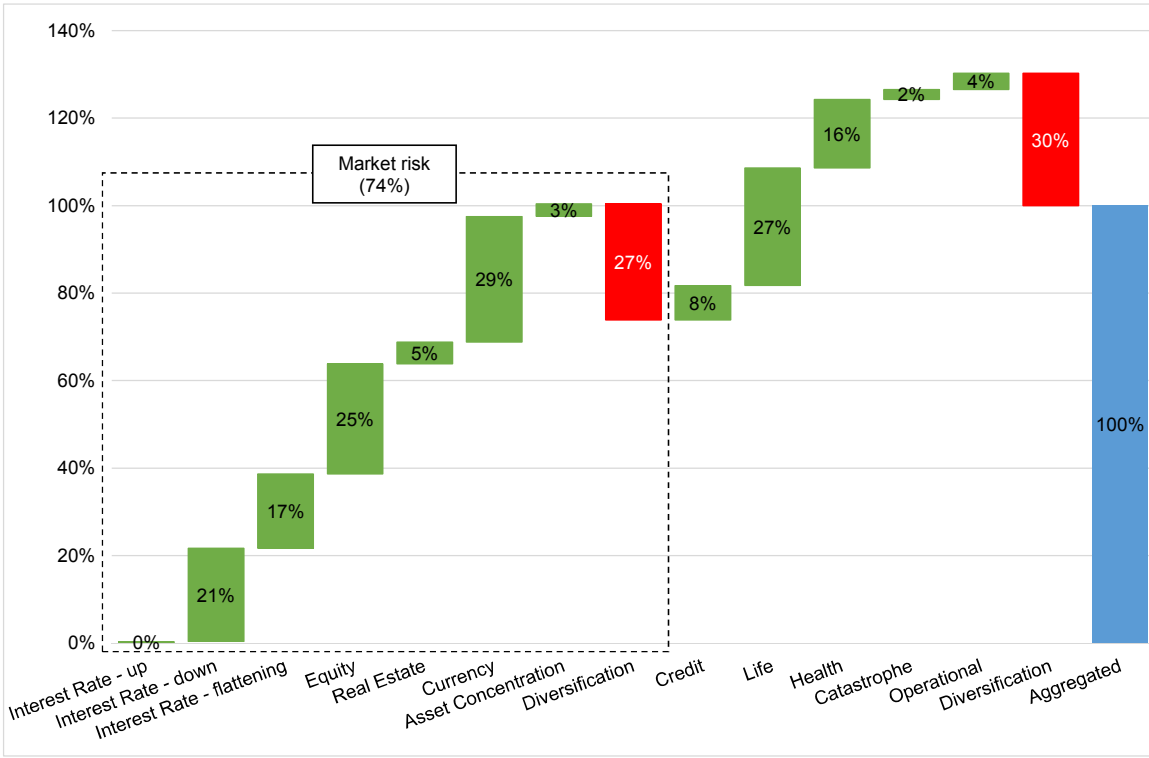
(Figure 1) Drivers of the net asset changes for life insurance companies (solo)



(Figure 2) Drivers of the net asset changes for non-life insurance companies (solo)



(Figure 3) Composition of the capital requirements for life insurance companies (March 31, 2016, solo)



(Figure 4) Composition of the capital requirements for non-life insurance companies (March 31, 2016, solo)

