May 20, 2024

SOMPO Himawari Life Insurance Inc.

Disclosure of Market Consistent Embedded Value as at March 31, 2024

SOMPO Himawari Life Insurance Inc. ("Himawari Life", CEO: Yasuhiro Ooba) herein reports its market consistent embedded value ("MCEV") with respect to its life insurance business, prepared and disclosed in compliance with the European Insurance CFO Forum Market Consistent Embedded Value Principles©[1] ("MCEV Principles") as at March 31, 2024.

Highlights

The MCEV of Himawari Life as at March 31, 2024 is 1,163.3 billion Yen, up by 55.6 billion Yen compared with the MCEV at March 31, 2023.

(in Billions of Yen)

	As at March 31, 2024	As at March 31, 2023	Change
MCEV	1,163.3	1,107.6	55.6
Adjusted net worth	15.3	157.2	(141.8)
Value of in-force	1,148.0	950.4	197.5
New business value	33.0	35.1	(2.1)

Note: In this disclosure, yen amounts are rounded down to the nearest 100 million yen.

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1. Introduction

1.1. About MCEV

Embedded values have been widely used in Europe and Canada as a measure of the value and performance of life insurance companies. Embedded values serve to supplement the financial information available from statutory accounting statements; they are particularly useful due to the nature of the life insurance business, where there is generally a time lag from the acquisition of new policies to the realization of profits arising from those policies.

MCEV represents a present value of current and future distributable earnings to shareholders generated from assets allocated to the covered business after allowance for the aggregate risks in the covered business. MCEV can be expressed as the EV evaluated using methods consistent with the market valuation of financial products traded in the financial markets and consists of the "corporate net asset value" and the "present value of future profits from existing business".

Insurance companies have widely disclosed EV in compliance with EEV Principles since the CFO Forum formed by the Chief Financial Officers (CFO) of major insurance companies in Europe issued the EEV Principles in May 2004. The CFO Forum released the MCEV Principles in June 2008, defining market consistent valuation methods to further enhance the consistency of valuation standards. The MCEV Principles were amended in May 2016 and now include guidance that allows the use of EU Solvency II methodologies with certain conditions. MCEV Principles have been positioned by the CFO Forum as an important standard and format for embedded value reporting.

Himawari Life has been disclosing its EV in compliance with the MCEV Principles beginning at the end of March 2010 in order to facilitate understanding of the status of Himawari Life, as EV disclosure in compliance with the EEV Principles or the MCEV Principles has been promoted in Japan.

1.2. Covered business

The business covered in this report is the life insurance business written by Himawari Life. Results in this report do not reflect life insurance business or non-life insurance business written by other insurance companies in the SOMPO Group.

1.3. Statement of directors

The Board of Directors of Himawari Life states that the MCEV results presented here were prepared in compliance with the MCEV Principles except for points of special notice. Please refer to "1.5. Compliance with MCEV Principles" for areas of non-compliance with the individual Principles and Guidelines defined in the MCEV Principles.

1.4. Opinion of outside specialist

Himawari Life requested Milliman, Inc., an external actuarial consulting firm with expert knowledge in the area of MCEV valuations, to review the methodology, assumptions and calculations and obtained an opinion from Milliman, Inc. Please refer to "5. Opinion of Outside Specialist" for details.

1.5. Compliance with MCEV Principles

MCEV results were calculated in accordance with the calculation methodologies and assumptions prescribed in the MCEV Principles. Areas of non-compliance with individual Principles and Guidance in the MCEV Principles are as follows:

- MCEV results were derived by using Japanese Government Bond (JGB) yields as reference rates for risk free rates rather than swap rates as stipulated in the MCEV Principles.
- MCEV results in this report are solely for the life insurance business written by Himawari Life, and they are not the consolidated results of the SOMPO Group. The MCEV results do not reflect the life or non-life insurance business written by any other insurance companies within the SOMPO Group.
- Group MCEV, as prescribed in the MCEV Principles, is not considered in this report, as the report is for Himawari Life on a standalone basis.

1.6. Use of JGB yields as reference rates for risk free rates

MCEV Principles stipulate that swap rates should be reference rates as a proxy for risk free rates, but a more appropriate alternative such as government bond yields can be used if swap rate availability is limited.
We considered ideal attributes of reference rates discussed for EU Solvency II (no credit risk, reliability, liquidity, and others) and concluded that it is more appropriate to use JGB yields.

2. MCEV Results

2.1. MCEV results

The MCEV of Himawari Life as at March 31, 2024, is 1,163.3 billion Yen, up by 55.6 billion Yen compared with the MCEV at March 31, 2023.

(in Billions of Yen)

	As at March 31, 2024	As at March 31, 2023	Change
MCEV	1,163.3	1,107.6	55.6
Adjusted net worth	15.3	157.2	(141.8)
Value of in-force	1,148.0	950.4	197.5
New business value	33.0	35.1	(2.1)

2.2. Adjusted net worth

The adjusted net worth is defined as the market value of assets allocated to the covered business in excess of statutory policy reserves and other liabilities as at the valuation date. More specifically, the adjusted net worth is the net assets on the statutory balance sheet plus the price fluctuation reserve, contingency reserves, general provision for loan losses, unallocated amount within policyholder dividend reserves, unrealized gains or losses on held-to-maturity bonds, unrealized gains or losses on policy-reserve-matching bonds, and unrealized gains or losses on derivatives, minus intangible fixed assets and tax adjustments on these eight items. Its breakdown is shown below.

Please refer to section 4.4. for the method of calculation of required capital.

(in Billions of Yen)

	March 31, 2024	March 31, 2023	Change
Adjusted net worth	15.3	157.2	(141.8)
Total net assets	185.3	101.1	84.1
Reserve for price fluctuations	12.0	10.9	1.0
Contingency reserves	34.9	34.3	0.6
General allowance for possible credit losses	0.0	0.0	(0.0)
Unallocated amount within policyholder dividend reserves	0.1	0.1	(0.0)
Unrealized gains or losses on held-to-maturity securities	(4.7)	137.2	(142.0)
Unrealized gains or losses on policy-reserve-matching bonds	(274.3)	(101.2)	(173.1)
Unrealized gains or losses on derivatives	-	-	-
Intangible fixed assets	(4.1)	(3.6)	(0.5)
Tax effect related to above eight items	66.1	(21.7)	87.8

(in Billions of Yen)

	March 31, 2024	March 31, 2023	Change
Adjusted net worth	15.3	157.2	(141.8)
Free surplus	(97.0)	69.1	(166.1)
Required capital	112.3	88.0	24.3

In this fiscal year, the free surplus turned negative due to a decrease in unrealized gains on bonds. The impact of an increase in required capital is mainly due to a reclassification of a portion of bonds held to maturity to bonds available for sale.

2.3. Value of in-force

The value of in-force reflects the value of distributable earnings to shareholders generated in the future from the existing business, expressed as a present value as at the valuation date (March 31, 2024). The value of in-force is the certainty equivalent present value of future profits net of the time value of options and guarantees, the frictional costs and the cost of non-hedgeable risks, broken down as below. Please refer to "4. Calculation method of MCEV" for details of each component.

(in Billions of Yen)

	March 31, 2024	March 31, 2023	Change
Value of in-force	1,148.0	950.4	197.5
Certainty equivalent present value of future profits	1,463.9	1,316.5	147.3
Time value of options and guarantees	(17.6)	(19.1)	1.5
Frictional costs	(27.5)	(17.0)	(10.4)
Cost of non-hedgeable risks	(270.7)	(329.8)	59.0

2.4. New business value

New business value shows the value of policies acquired during the Japanese fiscal year starting April 1, 2023 and ending March 31, 2024 (referred to as "the fiscal year" hereinafter), which is consistent with the disclosed financial information. Policies expected to be acquired in the future are not included in the calculation of new business value. The new business value is evaluated as at the valuation date (March 31, 2024) and is calculated under the same assumptions used for the value of in-force. The value of new business includes profits and losses from issue to the end of March 2024. A breakdown of the new business value is shown below.

(in Billions of Yen)

	March 31, 2024	March 31, 2023	Change
Value of new business	33.0	35.1	(2.1)
Certainty equivalent present value of future profits	59.0	67.0	(7.9)
Time value of options and guarantees	(0.0)	0.0	(0.0)
Frictional costs	(1.0)	(0.5)	(0.5)
Cost of non-hedgeable risks	(24.9)	(31.2)	6.3

2.5. New business margin

The new business margin presented below is the ratio of the new business value to the present value of new business premium income[2].

(in Billions of Yen)

	March 31, 2024	March 31, 2023	Change
Value of new business	33.0	35.1	(2.1)
Present value of new business premiums collected	467.3	487.5	(20.2)
New business margin	7.1%	7.2%	(0.1pt)

Relationships between the total annualized amount of regular premiums and the present value of new business premiums collected for the fiscal year are as follows:

(in Billions of Yen)

	March 31, 2024	March 31, 2023	Change
Single premiums from new business	-	-	-
Total annualized amount of regular premiums[3]	37.8	35.7	2.1
Average annual premium multiplier[4]	12.3	13.6	(1.3)

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[2] The present value of new business premium income is calculated applying the same assumptions as are used for the calculation of new business value, and is based on the premiums before the deduction of reinsurance premiums.

[3] The total annualized amount of regular premiums is calculated as the number of premium payments made in a year multiplied by the premium amount per payment. It should be noted that the definition of annualized premiums here is different from that used in disclosures such as the financial results and annual reports.

[4] The average annual premium multiplier is calculated as (Present value of new business premium income – Single premiums from new business) / Annualized level premiums from new business.

2.6. Reconciliation analysis of MCEV from the end of March 2023 to the end of March 2024

The table below shows the reconciliation analysis of the MCEV as at March 31, 2024, with the MCEV as at March 31, 2023, in the format illustrated by the MCEV Principles.

(in Billions of Yen)

	Free surplus	Required capital	Value of in-force	MCEV
Opening MCEV (MCEV as at March 31, 2023)	69.1	88.0	950.4	1,107.6
Opening adjustments	-	-	-	-
Adjusted opening MCEV	69.1	88.0	950.4	1,107.6
New business value	(4.1)	4.1	33.0	33.0
Expected existing business contribution (risk free rate)	(0.0)	(0.0)	20.1	20.0
Expected existing business contribution (in excess of risk free rate)	0.1	0.1	5.0	5.3
Transfers from value of in-force and required capital to free surplus	(13.3)	0.4	12.8	-
On in-force at the beginning of the year	24.3	0.4	(24.8)	-
On new business	(37.7)	-	37.7	-
Experience variances	1.7	(4.0)	(6.6)	(9.0)
Assumption changes	0.0	(0.0)	36.2	36.2
Other operating variance	(23.8)	23.8	(7.6)	(7.6)
Operating MCEV earnings	(39.4)	24.3	93.0	77.9
Economic variances	(111.4)	0.0	104.5	(6.9)
Other non operating variance	-	-	-	-
Total MCEV earnings	(150.8)	24.3	197.5	70.9
Closing MCEV (MCEV as at March 31, 2024)	(81.7)	112.3	1,148.0	1,178.6
Closing adjustments	(15.3)	-	-	(15.3)
Adjusted closing MCEV	(97.0)	112.3	1,148.0	1,163.3

(1) Opening adjustments

This reflects such items as capital and foreign exchange variances of acquired/divested business.

(2) New business value

This reflects the value of new business acquired during the fiscal year as at the valuation date (March 31, 2024). With regards to the calculation method of new business value, please refer to section 2.4.

(3) Expected existing business contribution (risk free rate)

This includes the amount of release of the time value of options and guarantees and allowance for non-hedgeable risks as well as investment income at risk free rates expected to earn on assets supporting the adjusted net worth, in addition to the impact of the unwinding of the discount effect in accordance with the elapse of time, as the expected future distributable earnings to shareholders are discounted at the risk free rate.

(4) Expected existing business contribution (in excess of risk free rate)

An investment return in excess of the risk free rate is anticipated due to the holding of risk assets such as corporate bonds and foreign securities. Consistent with this, the amount of expected spread on the risk asset amount at the end of the previous fiscal year is recorded as the profit expected in excess of the risk free rate. The level of expected spread is 0.21% of the total general account asset balance at of the end of the previous fiscal year.

(5) Transfers from value of in-force and required capital to free surplus

This reflects changes in the free surplus arising from the transfer of the profits expected in the fiscal year from the existing business value to the free surplus and from changes in the required capital under the adjusted net worth. The transfer of profits, the first item, includes the transfer of expected profits assumed to be realized during the fiscal year under the MCEV calculation as at March 31, 2023, and the transfer of profits for the fiscal year calculated under the new business value for the fiscal year. The value of MCEV itself does not change as a result of this transfer as the transfer merely constitutes a shift among MCEV components.

(6) Experience variances

These variances reflect the impact on MCEV of the differences between actual and expected profits transferred to the adjusted net worth during the fiscal year and of the differences between the actual policies in force and the policies expected to be in force as at March 31, 2024 which are projected from the policies in force as at March 31, 2023 and the new business acquired during the fiscal year.

(7) Assumption changes:

This shows the impact of changes in the non-financial assumptions such as mortality and morbidity rates, surrender and lapse rates and operating expense rates. The mass lapse risk has now been set based on the risk factors underlying Japan's emerging economic value based solvency regulation, which had previously been set with reference to the standard model of EU Solvency II. This item also includes the impact of a decrease in cost of non-hedgeable risks due to such revision.

(8) Other operating variance

This reflects the impact of model improvements and related updates in calculating MCEV. Also the impact of an increase in required capital resulting from a reclassification of a portion of bonds held to maturity to bonds available for sale is reflected.

(9) Operating MCEV earnings

This is the aggregate amount of items (2) through to (8).

(10) Economic variances

This reflects the impact of changes in economic assumptions, such as risk free rates and implied volatilities, to those as at the end of March 2024 and the impact of the difference between actual and expected investment income for the fiscal year, including that in excess of the risk free rate.

Due to the economic variances, free surplus contracted and the value of in-force increased. The decrease in free surplus was due to the decrease in the market value of bonds resulting from the rise of domestic and foreign yields. On the other hand, the value of in-force increased due to the rise in JGB yields. The impact on the value of in-force due to the increase in inflation rate assumptions is also included.

(11) Other non operating variance

There are no other non operating variances.

(12) Closing adjustments

This reflects shareholder dividend payments effective during the fiscal year.

2.7. Sensitivity analysis

The impacts of changing various assumptions underlying the MCEV and New business value calculation are as follows.

Sensitivity analysis

<div align="right">(in Billions of Yen)</div>

	MCEV	Adjusted net worth	Value of in-force (except for right item)	Cost of non-hedgeable risks	New business value
Base case	1,163.3	15.3	1,418.7	(270.7)	33.0

Assumption	Change in Assumption	Change in Amount on MCEV	Adjusted net worth	Value of in-force (except for right item)	Cost of non-hedgeable risks	New business value
Reference rates	Swap rate	(138.6)	-	(123.2)	(15.4)	(4.9)
Interest rates level	50bp decrease	(13.4)	229.6	(215.2)	(27.8)	(3.5)
	50bp increase	(1.6)	(203.4)	184.4	17.3	2.6
Ultimate forward rate	50bp decrease	(25.2)	-	(20.6)	(4.5)	(1.4)
	50bp increase	26.5	-	20.1	6.3	1.3
Stock / Real estate market values	10% decrease	(1.0)	(1.0)	-	-	-
Stock / Real estate implied volatility	25% increase	-	-	-	-	-
Interest rate swaption implied volatility	25% increase	(5.2)	-	(5.2)	-	(0.0)
Maintenance expenses	10% decrease	36.8	-	31.9	4.8	3.3
Surrender and lapse rates	x 0.9	15.9	-	34.6	(18.6)	1.5
Mortality rates (Death protection products)	x 0.95	19.2	-	21.0	(1.7)	0.7
Mortality rates (A&H products and annuity products)	x 0.95	(13.7)	-	(11.1)	(2.5)	(0.6)
Morbidity rates	x 0.95	73.3	-	73.3	0.0	5.2
Required capital	Target statutory solvency margin ratio of 200%	20.4	-	20.4	-	0.8

(1) Reference rates

This analysis shows the impact of changing reference rates for risk free rates as at March 31, 2024 from JGB yields to swap rates. The value of in-force changes as the discount rate and the future asset investment yields change. In generating stochastic economic scenarios the volatility parameters of the interest rate model are the same as for the base case parameters. Only the term structure parameters are changed.

(2) Interest rates level

This analysis shows the impact of an immediate increase or decrease by uniform 50bps for all durations of the reference rates for risk free rates (JGB yields) as at March 31, 2024. The adjusted net worth changes due to the change in market values of bonds and other assets. The value of in-force also changes as the discount rate and the future asset investment yields change. In generating stochastic economic scenarios the volatility parameters of the interest rate model are the same as for the base case parameters. Only the term structure parameters are changed. Interest rates are extrapolated without shifting the ultimate forward rate and are not floored at zero for the interest rate down sensitivity.

(3) Ultimate forward rate

This analysis shows the impact of an increase or decrease by 50bps of the ultimate forward rate used to extrapolate risk free rates in the 31st year and thereafter without changing reference rates (JGB yields) as at March 31, 2024. The value of in-force changes as the discount rate and the future investment yields change. In generating stochastic economic scenarios the volatility parameters of the interest rate model are the same as the base case parameters. Only the term structure parameters are changed. Inflation rates are not changed.

The higher ultimate forward rate results in an increase in the value of in-force, primarily due to higher investment income and a larger discounting effect on insurance claims in the ultra-long term.

(4) Stock and real estate market value

This analysis shows the impact of an immediate 10% drop in market values of stocks and real estate as at March 31, 2024. The adjusted net worth decreases as the market values of stocks and real estate decrease.

(5) Implied volatility of stocks and real estate

This analysis shows the impact of changes in the implied volatilities of stocks and real estate. The impact is set to zero because there are no assets, such as derivatives, which would be sensitive to the implied volatilities of stocks and real estate and the impact on the time value of options and guarantees is small.

(6) Interest rate swaption implied volatility

This analysis shows the impact of an increase in the implied volatility of interest rate swaptions. The impact was calculated only on the time value of options and guarantees, as there are no assets sensitive to the implied volatilities of interest rate swaptions.

(7) Maintenance expenses

This analysis shows the amount of increase in the value of in-force due to a 10% decrease in maintenance expenses. It should be noted that maintenance expenses subject to this sensitivity do not include agents' commissions payable to the in-force policies in future periods.

(8) Surrender and lapse rates

This analysis shows the change in the value of in-force due to a decrease in surrender and lapse rates to 0.9 times the original level. If the persistency rates were increased, the value of business in force would generally increase as future profits would increase. However, the negative spread business due to low interest rates would show a decrease in the value of business in force. In addition, higher persistency increases insurance risk, primarily mass lapse risk, leading to an increase in the cost of non-hedgeable risk. These effects combine to result in an overall increase in MCEV.

(9) Mortality rates

This analysis shows the change in the value of in-force due to a decrease in mortality rates to 0.95 times the original level. The sensitivity results are shown separately for death protection products and A&H insurance and annuity products, as they are expected to behave in a different direction under this sensitivity. A&H insurance and annuity product segment includes base policies and riders of which the primary benefits are accidental death, sickness and various medical risks such as cancer, and individual annuities. Regarding group life policies, it is assumed that changes in death benefits are entirely reflected in changes in policyholder dividends. Other management actions were not reflected in the calculations.

(10) Morbidity rates

This analysis shows the change in the value of in-force due to a decrease in morbidity rates of A&H products to 0.95 times the original level. No management actions were reflected in the calculations.

(11) Required capital

This analysis shows the amount of change in the value of in-force (frictional cost) if the required capital were the minimum statutory level which is to keep a solvency margin ratio of 200%.

(12) Other

Other items to note are as follows:
- The impact of a change in the frictional costs is allowed only under the sensitivity analyses of the reference rate and required capital.
- The impact of changing market value and implied volatilities of stocks & real estate is not quantified for variable life, as its impact is very small[5].
- Each of the sensitivity analyses above shows only the impact of changing one assumption. The impact of changing multiple assumptions at a time would not be equal to the sum of the impacts for each assumption.

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[5] The composition of variable life in terms of policy reserves as at the end of March 2024 is less than 1%.

3. Assumptions

3.1. Economic assumptions

(1) Risk free rates

The reference rates for risk free rates, used for the investment yields and discount rates for the calculation of the certainty equivalent present value of future profits are set to JGB yields as at the end of March, 2024.

Considering liquidity in ultra-long term rates, forward rates in the 31st year and thereafter are extrapolated using the Smith-Wilson method to converge to the ultimate forward rate in 40 years. These are determined by referring to the discussions for EU Solvency II. The ultimate forward rate is changed from 3.50% used for the previous year to 3.35% to be consistent with the change made to Solvency II.

Negative interest rates are not floored at zero. The JGB yields data were obtained from information vendors quotes. The JGB yields (spot rates) for major terms are shown below.

Term (in years)	As at the end of March, 2024	As at the end of March, 2023
1	0.06%	(0.10%)
2	0.19%	(0.06%)
3	0.20%	(0.06%)
4	0.26%	0.01%
5	0.36%	0.10%
10	0.72%	0.36%
15	1.15%	0.81%
20	1.53%	1.11%
25	1.74%	1.25%
30	1.89%	1.39%
35	2.03%	1.57%
40	2.16%	1.75%
50	2.37%	2.06%
60	2.53%	2.29%

(Source: Bloomberg, after interpolation/extrapolation)

The reference rates sensitivity results described in 2.7 (1) used swap rates. The spot yields (spot rates) of swap rates for major terms are shown below. As with the case for JGB yields, forward rates in the 31st year and thereafter are extrapolated using the Smith-Wilson method to converge to the ultimate forward rate in 40 years, and negative swap rates are not floored at zero.

Term (in years)	As at the end of March, 2024
1	0.19%
2	0.29%
3	0.38%
4	0.44%
5	0.51%
10	0.85%
15	1.13%
20	1.35%
25	1.47%
30	1.52%
35	1.65%
40	1.79%
50	2.06%
60	2.26%

(Source: Bloomberg, after interpolation/extrapolation)

Any liquidity premium is not reflected, as the definitions in the MCEV Principles regarding the method for its derivation and the eligible insurance liabilities are not completely clear, and generally accepted actuarial practice has not yet been established.

(2) Future asset allocation

In order to calculate interest dividends of participating products, future asset earned rates are projected for each segment in which policyholder dividend rates are specified in a manner consistent with the method used in the actual practice. As no equities and small portion of foreign assets are held in the asset segment for participating individual life and annuity business to which the policyholder dividend is calculated, it is assumed that assets are all invested in JPY denominated bonds. The number of years to maturity of the bonds to be purchased is set based on our recent purchase activities considering our liability portfolio characteristics.

With regard to the calculation of the time value of options and guarantees for minimum guaranteed death benefits on variable life business, the asset allocation of separate account assets for variable life business is set in accordance with the asset mix as at the end of March 31, 2024, and it is assumed to be unchanged in the future.

(3) Interest-rate model

The Hull-White model was used and calibrated to the market at the valuation date. Parameters are estimated from the swap curve and the implied volatilities (from the Bachelier (normal) model) of interest rate swaptions with different terms, where the interest rate is not floored at zero. The time value of options and guarantees were calculated using 1,000 scenarios generated with this interest rate model. We generated the scenarios.

The implied volatilities of the interest rate swaptions used in our estimation of parameters are shown below:

As at the end of March, 2024   (bp)

Term of swap (in years)	Term of option (in years)	JPY	USD	EUR	UKL
1	1	38.48	119.00	87.61	124.76
5	1	42.21	106.80	87.00	114.06
5	5	42.00	96.20	84.81	98.25
5	7	41.71	90.90	81.80	91.01
5	10	41.39	83.20	77.44	83.17
5	15	40.07	73.80	70.11	74.88
5	20	38.41	65.40	64.47	70.23
10	1	44.21	98.40	83.53	103.79
10	5	41.13	90.30	82.37	92.42
10	7	40.58	85.60	78.82	86.51
10	10	42.67	78.40	73.14	80.42
10	15	40.59	68.70	64.62	73.39
10	20	39.21	61.20	58.57	69.20
15	1	44.26	94.00	81.35	101.35
15	5	40.92	86.50	78.33	90.65
15	7	40.36	81.80	74.57	84.15
15	10	42.67	74.70	68.58	78.18
15	15	40.59	65.60	59.98	71.80
15	20	39.21	59.10	53.80	67.60
20	1	45.11	90.20	79.32	99.66
20	5	41.15	83.70	76.04	89.04
20	7	40.57	79.40	72.02	82.64
20	10	42.50	72.50	66.25	76.53
20	15	40.46	63.80	57.59	70.07
20	20	39.03	58.30	51.75	65.67

(Source: Bloomberg)

<Reference> As at the end of March, 2023 (bp)

Term of swap (in years)	Term of option (in years)	JPY	USD	EUR	UKL
1	1	40.93	153.90	121.11	140.76
5	1	51.47	123.10	115.52	127.87
5	5	44.64	98.00	96.68	106.40
5	7	41.72	89.80	89.96	98.40
5	10	39.84	79.00	82.72	90.17
5	15	38.62	67.90	73.53	82.87
5	20	38.99	60.90	67.62	78.22
10	1	55.66	106.40	106.26	115.37
10	5	42.65	89.80	91.80	98.40
10	7	40.55	82.90	84.45	92.12
10	10	39.12	73.80	76.60	85.64
10	15	38.33	63.50	67.28	79.95
10	20	38.64	56.80	61.15	75.61
15	1	53.03	98.60	102.02	113.70
15	5	39.67	83.80	86.51	97.08
15	7	38.55	77.30	79.25	90.18
15	10	39.12	68.80	70.88	83.16
15	15	38.33	59.70	61.26	77.43
15	20	38.64	53.90	54.94	72.89
20	1	51.81	91.90	96.77	111.77
20	5	39.49	78.60	82.95	95.53
20	7	37.88	73.00	75.85	88.54
20	10	39.16	65.20	67.53	81.39
20	15	38.29	57.20	58.65	74.89
20	20	38.69	52.10	52.61	70.18

(Source: Bloomberg)

(4) Implied volatilities of foreign exchange and stocks

Spot implied volatilities (at the money) calculated from options with different terms are used. The data source is the implied volatilities quoted by multiple banks and securities firms.

As options with terms greater than 10 years are illiquid for both foreign exchange rates and equity indices, the forward implied volatilities for the 10th year were extended for the terms greater than 10.

The following table shows the implied volatilities used in estimating the parameters. The implied volatility of the equity indices are the average of implied volatilities quoted by multiple banks, securities firms, and other bodies.

As at the end of March, 2024

Term (in years)	Foreign exchange(*)			Equity				
	USD /JPY	EUR /JPY	UKL /JPY	Japan TOPIX	US S&P	Euro SX5E	UK FTSE	Japan Nikkei average
1	8.75%	8.70%	9.40%	16.37%	15.95%	14.44%	12.75%	18.00%
5	7.96%	9.27%	10.23%	17.14%	20.04%	17.76%	14.89%	18.86%
7	8.03%	9.53%	10.15%	17.35%	21.52%	18.33%	16.23%	19.09%
10	8.50%	9.73%	10.45%	17.51%	22.80%	19.19%	17.23%	19.26%

(*)(Source: Bloomberg)

<Reference> As at the end of March, 2023

Term (in years)	Foreign exchange(*)			Equity				
	USD /JPY	EUR /JPY	UKL /JPY	Japan TOPIX	US S&P	Euro SX5E	UK FTSE	Japan Nikkei average
1	10.66%	11.09%	12.16%	14.92%	19.30%	18.24%	14.92%	16.41%
5	8.33%	10.66%	12.13%	16.07%	20.89%	19.53%	16.84%	17.68%
7	8.32%	10.78%	12.16%	16.31%	21.21%	19.82%	18.11%	17.94%
10	8.54%	10.93%	12.28%	16.32%	21.83%	20.61%	18.51%	17.95%

(*)(Source: Bloomberg)

(5) Correlation factor

As there is no market consistent data for correlation factors, correlation factors were derived from the monthly return of each index during the 5 years between April 2019 and the end of March 2024. Primary correlation factors are as follows.

As at the end of March, 2024

	JPY 1-year interest	USD 1-year interest	EUR 1-year interest	UKL 1-year interest	USD /JPY	EUR /JPY	UKL /JPY	TOPIX	S&P	SX5E	FTSE
JPY 1-year interest	1.00	0.21	0.16	(0.05)	0.00	0.19	0.09	0.09	(0.04)	(0.12)	(0.01)
USD 1-year interest	0.21	1.00	0.66	0.62	0.68	0.44	0.36	0.12	(0.12)	(0.04)	0.13
EUR 1-year interest	0.16	0.66	1.00	0.58	0.44	0.40	0.24	(0.02)	(0.25)	(0.08)	(0.06)
UKL 1-year interest	(0.05)	0.62	0.58	1.00	0.43	0.33	0.21	(0.04)	(0.26)	(0.14)	(0.05)
USD /JPY	0.00	0.68	0.44	0.43	1.00	0.64	0.56	0.19	(0.21)	(0.11)	(0.09)
EUR /JPY	0.19	0.44	0.40	0.33	0.64	1.00	0.83	0.39	0.17	0.20	0.14
UKL /JPY	0.09	0.36	0.24	0.21	0.56	0.83	1.00	0.55	0.41	0.42	0.27
TOPIX	0.09	0.12	(0.02)	(0.04)	0.19	0.39	0.55	1.00	0.69	0.73	0.66
S&P	(0.04)	(0.12)	(0.25)	(0.26)	(0.21)	0.17	0.41	0.69	1.00	0.86	0.71
SX5E	(0.12)	(0.04)	(0.08)	(0.14)	(0.11)	0.20	0.42	0.73	0.86	1.00	0.86
FTSE	(0.01)	0.13	(0.06)	(0.05)	(0.09)	0.14	0.27	0.66	0.71	0.86	1.00

<Reference> As at the end of March, 2023

	JPY 1-year interest	USD 1-year interest	EUR 1-year interest	UKL 1-year interest	USD /JPY	EUR /JPY	UKL /JPY	TOPIX	S&P	SX5E	FTSE
JPY 1-year interest	1.00	0.18	0.15	0.05	(0.02)	0.21	0.11	0.10	(0.04)	(0.11)	0.00
USD 1-year interest	0.18	1.00	0.59	0.64	0.68	0.44	0.37	0.15	(0.08)	0.03	0.22
EUR 1-year interest	0.15	0.59	1.00	0.59	0.41	0.38	0.23	(0.02)	(0.25)	(0.07)	(0.05)
UKL 1-year interest	0.05	0.64	0.59	1.00	0.40	0.30	0.15	(0.07)	(0.28)	(0.13)	(0.04)
USD /JPY	(0.02)	0.68	0.41	0.40	1.00	0.61	0.54	0.23	(0.12)	(0.02)	0.04
EUR /JPY	0.21	0.44	0.38	0.30	0.61	1.00	0.82	0.42	0.20	0.27	0.20
UKL /JPY	0.11	0.37	0.23	0.15	0.54	0.82	1.00	0.57	0.45	0.49	0.37
TOPIX	0.10	0.15	(0.02)	(0.07)	0.23	0.42	0.57	1.00	0.72	0.74	0.73
S&P	(0.04)	(0.08)	(0.25)	(0.28)	(0.12)	0.20	0.45	0.72	1.00	0.84	0.73
SX5E	(0.11)	0.03	(0.07)	(0.13)	(0.02)	0.27	0.49	0.74	0.84	1.00	0.89
FTSE	0.00	0.22	(0.05)	(0.04)	0.04	0.20	0.37	0.73	0.73	0.89	1.00

(6) Foreign exchange

Assets denominated in foreign currencies are converted to Japanese yen using the TTM (telegraphic transfer middle exchange rate) as at the end of March, 2024. Exchange rates of major currencies are shown below.

Currency	Exchange rate (JPY)
US dollar	151.41
Euro	163.24
Australian dollar	98.61
Canadian dollar	111.81

3.2. Other assumptions

Assumptions including mortality and morbidity rates, surrender and lapse rates, and operating expense rates were developed based on best estimates as at March 31, 2024. Best-estimate assumptions are developed to reflect past and current experience as well as expected experience in the future.

(1) Mortality and morbidity rates

Mortality and morbidity rates are developed based on experience over the most recent three years. For developing morbidity rates, a temporary COVID-19 effect is excluded. The mortality improvement trend observed up to the most recent observation period is assumed to continue for the future five years based on an analysis of internal and other national mortality data.

(2) Surrender and lapse rates

Surrender and lapse rates were developed based on experience over the most recent three years.
Dynamic surrender and lapse rates were applied depending on the level of interest rates for the saving products such as whole life insurance and individual annuity.

(3) Flexible premium policies

No assumptions were developed as Himawari Life does not have flexible premium policies.

(4) Renewal rates

Renewal rates were developed based on the experience of the most recent three years.

(5) Operating expense rates

Unit costs were developed for maintenance expenses incurred to maintain and administer insurance policies and to process claims payment based on actual operating expenses in the most recent year; in the case of system development cost, unit costs are based on the average amount for the most recent five years. However, an amount of 0.5 billion yen recorded in intangible fixed assets that is related to system development expenditures in the current fiscal year is not reflected in unit costs, because it is viewed as a special item and will not routinely be incurred as a maintenance expense for insurance policies in the future. This amount is deducted from the calculation of adjusted net worth.

It is assumed that Himawari Life's holding company incurs no expenses in respect of the business defined in "1.2. Covered business". In addition, unit costs for policy maintenance expenses were developed based on the actual operating expenses of a standalone Himawari Life, since all the operating expenses of the covered business are recorded as operating expenses of Himawari Life. The look-through effect has not been considered with regards to other companies in the SOMPO Group.

(6) Tax rate

Effective tax rates are set to 28.0%.
Consumption tax rates are set to 10%.

(7) Inflation

Inflation is set to 1.04% which is based on the break-even inflation rate derived from the most recently issued Inflation-Indexed Bonds and the latest consumer price index. In order to maintain consistency with the interest rate extrapolation method, inflation rates in the 31st year and thereafter are linearly extrapolated to converge in 40 years to the expected inflation rate (2.00%) assumed as part of the ultimate forward rate.

(8) Policyholder dividends

The interest dividend rate is set to the average yield to maturity of bonds less the assumed interest rate in each future year for each of the following segments: participating individual life insurance and participating individual annuity. With respect to group life policies, it is assumed that the most recent level of dividend payouts will continue in the future.

(9) Reinsurance

As the mortality risks etc of part of protection insurance are ceded, the projection includes reinsurance premiums as expenses and reinsurance claims as income. The level of reinsurance premiums and reinsurance claims were developed based on the experience of the most recent three years.

4. Calculation method of MCEV

4.1. Covered business

The business covered on this report is life insurance business operated by Himawari Life. Results in this report do not reflect life insurance business or non-life insurance business operated by other insurance companies in the SOMPO Group.

4.2. MCEV

MCEV represents the present value of current and future distributable earnings to shareholders generated from assets allocated to the covered business after allowance for the aggregate risks in the covered business. MCEV can be expressed as the EV evaluated in a method consistent with valuation of prices of financial products traded in the financial markets and consists of "corporate net asset value" and "present value of future profit from existing business".

4.3. Adjusted net worth

The adjusted net worth is defined as the market value of assets allocated to the covered business in excess of statutory policy reserves and other liabilities as at the valuation date. More specifically, the adjusted net worth is the net assets on the statutory balance sheet plus the price fluctuation reserve, contingency reserves, general provision for loan losses, unallocated amount within policyholder dividend reserves, unrealized gains or losses on held-to-maturity bonds, unrealized gains or losses on policy-reserve-matching bonds, and unrealized gains or losses on derivatives, minus intangible fixed assets and tax adjustments on these eight items.
It is made up of the required capital and free surplus.

4.4. Required capital

The required capital is the portion of assets held in excess of statutory liabilities whose distribution to shareholders is restricted in order to meet insurance obligations. MCEV Principles state that the level of required capital should be the larger of the solvency capital to meet the statutory minimum required level and the capital required to meet internal objectives. The internal target level is a statutory solvency margin ratio of 600% and an economic solvency ratio of 100%.
The required capital to meet the economic solvency ratio of 100% as at the end of March 2024 is below the regulatory minimum required capital
The economic value based risk volume has been calculated using an internal model assuming a confidence level of 99.5% value at risk over a 1 year time horizon. The internal model has been developed taking account of the trends in discussions on EU Solvency II and on economic value based solvency regulations in Japan. We will continue to make changes in line with the market and environment change as well as updates in industry standards and supervisory regulations.
The measurement methods of major risks covered by the internal model are as follows.

(1) Market risk
Asset and liability value changes due to market fluctuations such as interest rates and exchange rates are measured by stochastic simulation based on historical data.

(2) Insurance underwriting risk

The amount of risk is calculated as the change in insurance liability based on economic value due to changes in insurance assumptions such as deterioration or improvement of mortality rates, deterioration of morbidity rates, changes in surrender and lapse rates, etc. In order to reflect our own risk characteristics to the internal model, each of the insurance underwriting risk factors are set based on the confidence level derived from our own past experience, also taking into account the discussions on and the level of risk factors considered for economic value based solvency regulations in Japan.

(3) Operational risk

Follow the standard method of EU Solvency II.

4.5. Free surplus

The free surplus is calculated as the adjusted net worth minus the required capital. In this fiscal year, the value of in-force increased significantly due to the rise in interest rates, while the free surplus turned negative due to a decrease in unrealized gains on bonds. We appropriately control interest rate risk on an economic value basis, and the increase in the former largely offsets the decrease in the latter, so there is no issue on solvency position.

4.6. Value of in-force / New business value

The value of in-force is the value of distributable earnings to shareholders generated in the future from the existing business as at the valuation date (March 31, 2024) converted to a present value as at the valuation date, which is the certainty equivalent present value of future profits reduced by the time value of options and guarantees, the frictional costs and the cost of non-hedgeable risks. The new business value is also calculated using the same method.

4.7. Certainty equivalent present value of future profits

The certainty equivalent present value of future profits is the present value of future profits under a single scenario, reflecting future cash flows arising from the covered business. Risk free rates are used for the investment yield assumptions and the discount rates. The intrinsic value of options and guarantees is included in the certainty equivalent present value of future profits.

4.8. Time value of options and guarantees

The time value of options and guarantees was calculated using 1,000 risk-neutral scenarios. The time value of options and guarantees is calculated as the difference between the average present value of future profits based on the future cash flows under each scenario and the certainty equivalent present value of future profits.
The time value of options and guarantees reflects the following components:

- 5-year interest dividends
  In the case where the investment return exceeds the credited interest rate, the outperforming portion is paid to policyholders as interest dividends, while interest losses would all be attributable to shareholders. This represents a policyholder option. The cost of such options was evaluated by changing the interest dividend rate under each of the multiple scenarios.

- Dynamic Surrenders

  Many policyholders of savings type insurance products are considered to be sensitive to interest rate changes. The cost of policyholders exercising the right to surrender in the event of interest rates rise was taken into account for saving products such as whole life insurance and individual annuities, since it is generally considered that distributable earnings for shareholders may decrease due to dynamic surrenders in line with movements in market interest rates compared with the assumption of no dynamic surrenders.

- Minimum guaranteed death benefits on Variable Life

  For death benefits on variable life insurance, favorable investment performance would be returned to policyholders through an increase in death benefits. However, unfavorable investment performance incurred is attributable to shareholders. This is similar to a policyholder option against shareholders. The time value of options and guarantees for the cost of the minimum death benefit guarantee was taken into account.

4.9. Frictional costs

The frictional costs are set to the present value of investment costs and taxes on assets backing the required capital.

4.10. Cost of non-hedgeable risks

The cost of non-hedgeable risks allow for the uncertainty of non-economic assumptions as well as the uncertainty of non-hedgeable economic assumptions.
The cost is derived by cost of capital approach applying to the internal model risk amounts.
Insurance risk, market risk related to interest rate risk in the extrapolated period, and operational risk are taken into consideration.
The following points are major differences from the methods applied by EU Solvency II:

- Counterparty default risk is not considered in the non-hedgeable risks as its impact is immaterial.
- Each of the insurance underwriting risk factors are set based on the confidence level derived from our own past experience, also taking into account the discussions on and the level of risk factors considered for economic value based solvency regulations in Japan.
- Ultra long term interest rate risk considered to be non-hedgeable is reflected. The volatility of interest rates in the extrapolated period is determined so that ultimate forward rate volatility is within a specified range to be consistent with our approach to the extrapolation of ultra long term interest rates.
- Each risk was calculated based on cash flows after taking into account of loss absorption by policyholder dividends without any adjustments, while EU Solvency II requires an adjustment in order to keep the risk mitigation effect, which is defined as the difference between the cases with and without taking into account of loss absorption by policyholder dividends, to be less than the present value of policyholder dividends.

4.11. Cost of capital rate

EU Solvency II stipulates 6% as the cost of capital rate which is used for the risk margin calculation under the cost of capital method. On the other hand, the CRO (Chief Risk Officers') Forum, in which CROs from major insurance companies in Europe participate, suggested that 2.5% to 4.5% is the appropriate level for the cost of capital rate. .
In this report, the rate is set at 6%, as it is employed by EU Solvency II, since there is no standardized method for determining the cost of capital rate. We may revise the cost of capital rate in the future as adequate, considering trends in MCEV disclosures in Japan and abroad.

5. Opinion of Outside Specialist

We requested a review of the reasonableness of calculation methods, assumptions, and calculated results from a third-party with actuarial expertise, Milliman, Inc., and received the following opinion.

Milliman, Inc. ("Milliman") has been engaged to review the methodology, assumptions and calculations used by SOMPO Himawari Life Insurance Inc. ("Himawari Life") to determine the Market Consistent Embedded Value ("MCEV") as at March 31, 2024. Specifically, the scope of our review included the embedded value as at 31 March 2024 the sensitivities, the new business value and the movement analysis from the MCEV as at 31 March 2023.

The board of directors made a statement in its News Release Form dated May 20, 2024 that the methodology, assumptions and calculations have been made in accordance with the MCEV Principles©[6], with the following exceptions:

- MCEV results were derived by using Japanese Government Bond (JGB) yields as risk free rates rather than swap rates as stipulated in the MCEV Principles.
- MCEV results in this report are solely for the life insurance business written by Himawari Life, and they are not the consolidated results of the SOMPO Group. The MCEV results do not reflect the life or non-life insurance business written by any other insurance companies within the SOMPO Group.
- Group MCEV, as prescribed in the MCEV Principles, is not considered in this report, as the report is for Himawari Life on a standalone basis.

Milliman has concluded that the methodology and assumptions used comply with the MCEV Principles except for the points described in the above paragraph. In particular:
- The non economic assumptions have been set with regard to past, current and expected future experience;
- The economic assumptions used in the calculations are internally consistent and consistent with observable market data as per the valuation date;
- Himawari Life's market consistent embedded value methodology makes allowance for aggregate risks in the covered business. The primary methodologies employed are:
  - a stochastic allowance for the cost of financial options and guarantees
  - a deduction for the cost of non-hedgeable risks
  - a deduction for the frictional costs of the required capital

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- For participating insurance contracts, the assumptions and scenarios used in the projections are consistent with actual practice regarding the allocation of profits between policyholders and shareholders, the setting of policyholder dividend rates, and other management actions.

Milliman has reviewed the MCEV methodology, assumptions, calculations and analysis prepared by Himawari Life, but this does not mean that Milliman has conducted a detailed review in all aspects. During its review Milliman identified and discussed various MCEV calculation and definition issues with Himawari Life staff. Based upon those discussions and follow-up actions Milliman is not aware of any issues that would materially impact the disclosed market consistent embedded values, sensitivities, new business values or movement analysis from the prior period. In arriving at this conclusion, Milliman has relied on data and information provided by Himawari Life.

The calculation of MCEV is based on numerous assumptions with respect to economic conditions, operating conditions, taxes and other matters, many of which are beyond the control of Himawari Life. Although the methodology and assumptions used comply with the MCEV Principles, deviations between projection assumptions and actual experience in the future are to be expected. Also, Himawari Life's internal model approach to quantifying various risks and calibrating risk factors, instrumental to quantifying the internal required capital target and the cost of residual non-hedgeable risk, is in the process of ongoing update, and will likely continue to evolve over the next several years to reflect market or environmental changes, as well as emerging industry and regulatory standard practices. Such deviations and internal model updates can be expected to impact the values calculated, possibly materially.

This opinion is made solely to Himawari Life in accordance with the engagement letter between Himawari Life and Milliman. Milliman does not accept or assume any responsibility, duty of care or liability to anyone other than Himawari Life for or in connection with its review work, the opinion Milliman has formed or for any statements set forth in this opinion, to the fullest extent permitted by applicable law.

6. Glossary

	Term	Definition
B	Best estimate assumption	As defined by the CFO Forum, it is the "mean estimate (probability weighted average)" of a particular variable as at the valuation date. Actual experience, the current situation and future expectations are considered. Margins for adverse deviation are not considered in the assumption.
C	Calibration	In this report this means the process whereby economic scenarios used for stochastic valuations are made consistent with the actual financial markets' relevant parameters.
	Cost of capital approach	One of the approaches to assess the risk that the actual value will diverge from the best estimate value. The allowance for the risk is set as the present value of the cost of holding capital until the risk is released.
	Cost of non-hedgeable risks	Allowance for risks not reflected in the time value of options and guarantees or in the certainty equivalent present value of future profits. It reflects the risk that future experience will diverge from non-economic assumptions such as mortality and morbidity rates, or surrender and lapse rates, as well as economic assumptions which are unobservable in the capital markets such as extra-long term interest rates.
E	EU Solvency II	An integrated new solvency framework on an economic value basis among EU countries.
F	Free surplus	The portion of assets held in excess of statutory liabilities that it is not required to retain.
	Frictional costs	Allowance for investment costs and taxes due to investment in required capital, compared with direct investment in the capital markets.
I	Implied volatility	Theoretical volatility of option prices derived from the current market prices of the options, based on option pricing models.
L	Look through basis	A basis on which the impact of an action on an entire business group is considered, rather than only on a particular part of the group.
O	Options and guarantees	Policyholders are eligible for various options embedded in insurance policies, and the cost of providing such options is deducted from the MCEV. The intrinsic plus time value is the value of options and guarantees, and the value changes asymmetrically in response to changes in the observable capital markets.
P	Present value of certainty equivalent future profits	The present value of profits under a single scenario, reflecting future cash flows arising from the covered business. Risk free rates are used for the investment yield assumptions and the discount rates. The intrinsic value of options and guarantees is included in the certainty equivalent present value of future profits.
R	Required capital	The portion of assets held in excess of statutory liabilities whose distribution to shareholders is restricted.

Term		Definition
	Risk free rate	In this report, the risk free rate means the reference rate prescribed in the MCEV Principles. The reference rate differs depending on currency, term and liquidity. Unless future cash flow is reasonably predictable the interest swap rate should be used. Where swap curves do not provide a robust basis for producing reference rates, a more appropriate alternative, such as the government bond yield curve, may be used. If future cash flow is reasonably predictable a liquidity premium is added to the interest swap rate where appropriate.
	Risk margin	In the context of Solvency II, the risk margin is the cost of retaining capital for non-hedgeable risks reflected in the evaluation of insurance liabilities on an economic value basis.
	Risk neutral scenario	Risk neutrality means that market participants are indifferent to risk, being neither risk averse nor risk seeking. Risk neutral scenarios are those generated assuming risk neutrality.
T	Time value and intrinsic value	An option value can be thought of consisting of two parts, time value and intrinsic value. The intrinsic value of an option is the option pay-off that would be realized if the option was settled on the valuation date. The time value corresponds to the possibility of the option value increasing up to expiry.
U	Ultimate forward rate	Ultimate forward rate is the level of interest rate to which forward rate is expected to converge in the long run. The most important components are the long-term expected inflation and expected short-term real interest rates which are generally set based on macro-economic analyses. EU Solvency II uses ultimate forward rate to extrapolate risk free rates.
Y	Yield to maturity	Yield to maturity of existing bonds means the yield that will be achieved when the bonds are held from the purchase to maturity.