

May 23, 2023

SUMITOMO LIFE INSURANCE COMPANY

Disclosure of European Embedded Value (summary) as of March 31, 2023

This is the summarized translation of disclosure of the European Embedded Value (“EEV”) of Sumitomo Life Insurance Company (hereinafter “Sumitomo Life”), Medicare Life Insurance Co. (hereinafter “Medicare Life”) and Symetra Financial Corporation (hereinafter “Symetra”) (collectively, the “Group”) as of March 31, 2023.

We calculate EV based on European Embedded Value Principles. In the calculation of EEV, the Group has mainly adopted a market-consistent approach. More specifically, the EEV for Sumitomo Life and Medicare Life are calculated based on a market-consistent approach, while the EEV for Symetra is calculated based on a top-down approach. Both approaches are permitted under the EEV Principles.

As a mutual life insurance company, Sumitomo Life regarded the surplus after policyholder dividends as the value attributable to the company in calculating its EEV.

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## 1. Results

### a. EEV Results of the Group

#### (1) EEV Results

(billions of yen)

	March 31, 2022	March 31, 2023	increase (decrease)
EEV	4,678.9	4,751.2	72.2
Adjusted net worth	3,638.1	2,601.6	(1,036.4)
Value of in-force business	1,040.8	2,149.5	1,108.7

  

	Year ended March 31,2022	Year ended March 31,2023	increase (decrease)
Value of new business	139.9	120.8	(19.0)

(Note1) The Group EEV is calculated as follows: Sumitomo Life's EEV plus Medicare Life's EEV and Symetra's EEV less Sumitomo Life's carrying amount of equity of Medicare Life and Symetra.

(Note2) Sumitomo Life's carrying amount of Medicare Life's equity was ¥120.0 billion as of March 31, 2022 and ¥160.0 billion as of March 31, 2023. Sumitomo Life's carrying amount of Symetra's equity was ¥466.5 billion as of March 31, 2022 and as of March 31, 2023.

(Note3) The Group EEV as of March 31, 2022 and as of March 31, 2023 includes Symetra's EEV as of December 31, 2021 and as of December 31, 2022, respectively, in accordance with Symetra's closing date for the Group's consolidated financial statements.  
The Group's value of new business for the year ended March 31, 2022 and the year ended March 31, 2023 includes Symetra's value of new business for the year ended December 31, 2021 and the year ended December 31, 2022, respectively.

(Reference)

As life insurance products are long term liabilities, Sumitomo Life is investing primarily in yen-denominated interest-bearing assets such as long-term bonds and loans in our ALM strategy.

When interest rates reduce, value of in-force business is decreased reflecting lower expected future prospects of investment return. On the other hand, adjusted net worth is increased by unrealized gains on assets.

The sum of unrealized gains and value of in-force business represents expected future profits from in-force business.

Breakdown of Group EEV based on this idea is as follows.

(billions of yen)

	March 31, 2022	March 31, 2023	increase (decrease)
EEV	4,678.9	4,751.2	72.2
Total net asset on the balance sheet +Retained earnings in liabilities (Note1)	1,622.5	1,682.9	60.3
Value of in-force business +Unrealized gains (losses) on Yen-denominated interest-bearing assets and others (Note2)	1,872.7	2,163.3	290.5
Unrealized gains (losses) of assets other than Yen-denominated interest-bearing assets and others (Note3)	1,183.7	904.9	(278.7)

(Note1) The sum of the total net assets on balance sheet, the retained earnings in liabilities (after tax) of Group, consolidation adjustment regarding Medicare Life and Symetra and deferred tax assets of Symetra is reported.

(Note2) The sum of value of in-force business of Group and unrealized gains (losses) on yen-denominated interest-bearing assets and others (after tax) of Sumitomo Life and Medicare Life is reported. Yen-denominated interest-bearing assets and others (after tax) include yen-denominated bonds, loans and hedged foreign bonds corresponding to yen-denominated insurance, and foreign currency-denominated bonds corresponding to foreign currency-denominated insurance.

(Note3) The sum of unrealized gains (losses) on securities and loans (after tax) (excluding yen-denominated interest-bearing assets and others), unrealized gains (losses) on estate and liabilities (after tax), unfunded retirement benefit obligations (after tax) of Sumitomo Life and Medicare Life is reported.

## (2) Adjusted Net Worth

(billions of yen)

	March 31, 2022	March 31, 2023	increase (decrease)
Adjusted net worth	3,638.1	2,601.6	(1,036.4)
Total net asset on the balance sheet (Note1)	950.2	1,095.2	144.9
Retained earnings in liabilities (after tax)	1,263.6	1,211.1	(52.5)
Unrealized gains (losses) on securities and miscellaneous items (after tax)	1,890.3	779.4	(1,110.8)
Unrealized gains (losses) on loans (after tax)	20.1	(10.7)	(30.9)
Unrealized gains (losses) on real estate (after tax)	104.9	125.8	20.8
Unrealized gains (losses) on liabilities (after tax)	(4.0)	11.9	15.9
Unfunded retirement benefit obligation (after tax)	4.2	12.2	8.0
Consolidation adjustment regarding Medicare Life (Note2)	(120.0)	(160.0)	(40.0)
Adjustment for deferred tax assets in Symetra and miscellaneous items	(4.8)	3.0	7.9
Consolidation adjustment regarding Symetra (Note2)	(466.5)	(466.5)	-

(Note1) Figures do not include net unrealized gains (losses) on available-for-sale securities and expected disbursements from capital outside the company.

(Note2) Deduction consists of the carrying amounts of the equity of Medicare Life and Symetra held by Sumitomo Life, which are recorded under "Total net assets on the balance sheets" in the table above.

### (3) Reconciliation of total net assets to adjusted net worth

(billions of yen)

	March 31, 2022	March 31, 2023	increase (decrease)
Total Net Assets of consolidated base (Note1)	671.8	403.3	(268.4)
PLUS Retained earnings in liabilities (after tax)	1,263.6	1,211.1	(52.5)
PLUS Unrealized gains/losses (after tax)	2,025.8	914.2	(1,111.6)
PLUS Adjustment for deferred tax assets in Symetra and miscellaneous items	(4.8)	3.0	7.9
PLUS Difference between Symetra's net assets based on its statutory accounting and US-GAAP (Note2)	(318.3)	69.8	388.1
LESS Book value of businesses not covered	-	-	-
Adjusted net worth	3,638.1	2,601.6	(1,036.4)

(Note1) Figures do not include net unrealized gains (losses) on available-for-sale securities and expected disbursements from capital outside the company.

(Note2) The difference between net assets based on statutory accounting and US-GAAP is shown because Symetra's EEV (Symetra Bermuda Re Ltd. is subject to the capital controls of British Bermuda) is calculated based on its statutory accounting while the Group's consolidated balance sheet is prepared based on Symetra's US-GAAP balance sheet.

### (4) Value of In-force Business (VIF)

(billions of yen)

	March 31, 2022	March 31, 2023	increase (decrease)
Value of in-force business	1,040.8	2,149.5	1,108.7
Present value of future profits (Note1)	1,595.7	2,695.9	1,100.2
Time value of financial options and guarantees	(135.1)	(106.8)	28.2
Cost of holding required capital (Note2)	(132.5)	(173.1)	(40.5)
Cost of non-hedgeable risks	(287.1)	(266.4)	20.7

(Note1) Includes the certainty equivalent present value of future profits for business valued using a market-consistent approach and present value of future profits for business valued using a top-down approach.

(Note2) Includes the cost of holding required capital for business valued using a market-consistent approach and the cost of capital for business valued using a top-down approach.

(5) Value of New Business (VNB)

(billions of yen)

	Year ended March 31,2022	Year ended March 31,2023	increase (decrease)
Value of new business	139.9	120.8	(19.0)
Present value of future profits	178.8	169.1	(9.7)
Time value of financial options and guarantees	(3.7)	(5.7)	(1.9)
Cost of holding required capital	(9.7)	(22.2)	(12.5)
Cost of non-hedgeable risks	(25.3)	(20.2)	5.1

The new business margin (the ratio of the value of new business to the present value of premium income) is as follows:

(billions of yen)

	Year ended March 31,2022	Year ended March 31,2023	increase (decrease)
Value of new business (a)	139.9	120.8	(19.0)
Present value of premium income (b) (Note)	2,500.0	2,792.4	292.3
New business Margin (a) ÷ (b)	5.6 %	4.3 %	(1.3) points

(Note) Future premium income (as for Symetra, based on the statutory accounting) is discounted by the risk-free rate or the risk discount rate used for the calculation of the value of new business.

(Reference)

The value of new business (VNB) is calculated based on a market consistent method using risk neutral valuation techniques, where the expected excess return of investments over risk free rates is offset by allowing for the price that market participants require for taking on the investment risks. This is achieved by assuming the investment return for all assets will be equal to the risk free rates.

However, Japanese insurance companies actually invest in corporate bonds, foreign bonds, and equities, in addition to Japanese government bonds, and expects to achieve investment returns in excess of risk-free returns. If they achieve investment returns in excess of risk-free returns, their EEV will increase over the term of the policy.

When Sumitomo Life and Medicare Life assume excess returns on investments over risk-free rates, Group's VNB, on the reference basis, will be as set out in the following table. In order to reflect some uncertainty of realizing the expected excess return, discount rates are assumed to be the same as the return on investments.

Please note that this reference basis differs from the risk neutral valuation which is used for EEV and VNB of Sumitomo Life and Medicare Life, respectively. Further, the VNB in following table is not the VNB which forms part of each EEV.

(billions of yen)

	Year ended March 31, 2023
Value of new business assuming excess return, on the reference basis (Note)	178.1

(Note) The excess rate of return compared to the risk-free rate is 0.6% in Sumitomo Life and 0.0% in Medicare Life.



b. EEV Results by company

(1) Sumitomo Life

(billions of yen)

	March 31, 2022	March 31, 2023	increase (decrease)
EEV (Note)	4,743.1	4,698.2	(44.9)
Adjusted net worth	3,962.8	2,901.3	(1,061.4)
Total net asset on the balance sheet	746.2	831.0	84.7
Retained earnings in liabilities (after tax)	1,206.8	1,156.1	(50.6)
Unrealized gains (losses) on securities and miscellaneous items (after tax)	1,884.4	774.8	(1,109.5)
Unrealized gains (losses) on loans (after tax)	20.1	(10.7)	(30.9)
Unrealized gains (losses) on real estate (after tax)	104.9	125.8	20.8
Unrealized gains (losses) on liabilities (after tax)	(4.0)	11.9	15.9
Unfunded retirement benefit obligation (after tax)	4.2	12.2	8.0
Value of in-force business	780.3	1,796.9	1,016.5
Certainty equivalent present value of future profits	1,212.1	2,174.2	962.0
Time value of financial options and guarantees	(121.7)	(97.8)	23.9
Cost of holding required capital	(86.5)	(82.0)	4.4
Cost of non-hedgeable risks	(223.5)	(197.3)	26.1

(billions of yen)

	Year ended March 31,2022	Year ended March 31,2023	increase (decrease)
Value of new business	100.4	61.9	(38.5)
Certainty equivalent present value of future profits	115.7	76.2	(39.4)
Time value of financial options and guarantees	(2.2)	(2.4)	(0.2)
Cost of holding required capital	(3.1)	(3.5)	(0.3)
Cost of non-hedgeable risks	(9.8)	(8.3)	1.4

(Note) The shares of Medicare Life and Symetra held by Sumitomo Life are valued on a book value basis for purposes of calculating the embedded value of Sumitomo Life on a stand-alone basis. For purposes of calculating the embedded value of the Group, consolidation adjustments are required.

The new business margin (the ratio of the value of new business to the present value of premium income) is as follows:

(billions of yen)

	Year ended March 31,2022	Year ended March 31,2023	increase (decrease)
Value of new business (a)	100.4	61.9	(38.5)
Present value of premium income (b)	1,514.1	1,537.8	23.6
New business Margin (a) ÷ (b)	6.6 %	4.0 %	(2.6) points

(2) Medicare Life

(billions of yen)

	March 31, 2022	March 31, 2023	increase (decrease)
EEV	265.1	329.1	63.9
Adjusted net worth	30.9	37.1	6.1
Total net asset on the balance sheet	22.3	29.2	6.8
Retained earnings in liabilities (after tax)	2.8	3.3	0.5
Unrealized gains (losses) on securities and miscellaneous items (after tax)	5.8	4.5	(1.2)
Unrealized gains (losses) on loans (after tax)	-	-	-
Unrealized gains (losses) on real estate (after tax)	-	-	-
Unrealized gains (losses) on liabilities (after tax)	-	-	-
Unfunded retirement benefit obligation (after tax)	-	-	-
Value of in-force business	234.2	292.0	57.8
Certainty equivalent present value of future profits	299.7	362.7	62.9
Time value of financial options and guarantees	(0.3)	(0.4)	0.0
Cost of holding required capital	(1.5)	(1.2)	0.3
Cost of non-hedgeable risks	(63.6)	(69.0)	(5.3)

(billions of yen)

	Year ended March 31,2022	Year ended March 31,2023	increase (decrease)
Value of new business	27.4	27.8	0.4
Certainty equivalent present value of future profits	43.3	39.9	(3.3)
Time value of financial options and guarantees	-	-	-
Cost of holding required capital	(0.2)	(0.1)	0.0
Cost of non-hedgeable risks	(15.5)	(11.8)	3.6

The new business margin (the ratio of the value of new business to the present value of premium income) is as follows:

(billions of yen)

	Year ended March 31,2022	Year ended March 31,2023	increase (decrease)
Value of new business (a)	27.4	27.8	0.4
Present value of premium income (b)	319.7	275.8	(43.9)
New business Margin (a) ÷ (b)	8.6 %	10.1 %	1.5 points

### (3) Symetra

(billions of yen)

	December 31, 2021	December 31, 2022	increase (decrease)
EEV	257.1	350.3	93.2
Adjusted net worth	230.8	289.7	58.8
Total net asset on the balance sheet (Note)	181.7	235.0	53.2
Retained earnings in liabilities (after tax)	54.0	51.6	(2.3)
Adjustment for deferred tax assets and miscellaneous items	(4.8)	3.0	7.9
Value of in-force business	26.2	60.6	34.3
Present value of future profits	83.7	159.0	75.3
Time value of financial options and guarantees	(12.9)	(8.5)	4.3
Cost of capital	(44.4)	(89.8)	(45.3)

(billions of yen)

	Year ended December 31,2021	Year ended December 31,2022	increase (decrease)
Value of new business	12.0	31.0	19.0
Present value of future profits	19.8	52.9	33.0
Time value of financial options and guarantees	(1.5)	(3.2)	(1.7)
Cost of capital	(6.2)	(18.5)	(12.2)

(Note) The sum of net assets based on statutory capital and surplus in U.S. life insurance subsidiary, value of other subsidiaries and holding company's equity.

The new business margin (the ratio of the value of new business to the present value of premium income) is as follows:

(billions of yen)

	Year ended December 31,2021	Year ended December 31,2022	increase (decrease)
Value of new business (a)	12.0	31.0	19.0
Present value of premium income (b)	666.1	978.7	312.6
New business Margin (a) ÷ (b)	1.8%	3.2 %	1.4 points

(Reference) Symetra's EEV in US Dollar

(millions of USD)

	December 31, 2021	December 31, 2022	increase (decrease)
EEV	2,235	2,640	404
Adjusted net worth	2,007	2,183	176
Total net asset on the balance sheet	1,579	1,771	191
Retained earnings in liabilities (after tax)	469	389	(80)
Adjustment for deferred tax assets and miscellaneous items	(42)	23	65
Value of in-force business	228	456	228
Present value of future profits	727	1,198	470
Time value of financial options and guarantees	(112)	(64)	47
Cost of capital	(386)	(677)	(290)

(millions of USD)

	Year ended December 31,2021	Year ended December 31,2022	increase (decrease)
Value of new business	104	234	129
Present value of future profits	172	398	226
Time value of financial options and guarantees	(13)	(24)	(11)
Cost of capital	(54)	(140)	(85)

## 2. Statement of changes in EEV

### a. Statement of changes in EEV of the Group

(billions of yen)

	Adjusted net worth	Value of in-force business	EEV
Values as of March 31, 2022	3,638.1	1,040.8	4,678.9
Adjustments to the values as of March 31, 2022 (Note)	35.4	4.0	39.5
Adjusted values as of March 31, 2022	3,673.6	1,044.9	4,718.5
Value of new business	-	120.8	120.8
Expected existing business contribution (market-consistent approach)	37.1	267.8	305.0
Risk-free rate	(2.1)	17.9	15.7
In excess of risk-free rate	39.3	249.9	289.2
Expected existing business contribution (top-down approach)	(2.8)	29.6	26.8
Expected transfer from VIF to adjusted net worth	(0.7)	0.7	-
on in-force at beginning of year	194.0	(194.0)	-
on new business	(194.8)	194.8	-
Non-economic experience variances	(94.2)	(5.5)	(99.8)
Non-economic assumptions changes	-	16.8	16.8
Economic variances	(1,011.2)	674.2	(337.0)
Values as of March 31, 2023	2,601.6	2,149.5	4,751.2

(Note) This item represents the effects of the foreign exchange variance due to yen conversion of Symetra's EEV.

b. Statement of changes in EEV by company

(1) Sumitomo Life

(billions of yen)

	Adjusted net worth	Value of in-force business	EEV
Values as of March 31, 2022	3,962.8	780.3	4,743.1
Value of new business	-	61.9	61.9
Expected existing business contribution (market-consistent approach)	37.1	264.3	301.4
Risk-free rate	(2.1)	15.1	12.9
In excess of risk-free rate	39.2	249.2	288.5
Expected transfer from VIF to adjusted net worth	3.9	(3.9)	-
on in-force at beginning of year	186.3	(186.3)	-
on new business	(182.3)	182.3	-
Non-economic experience variances	(115.0)	34.8	(80.2)
Non-economic assumptions changes	-	20.0	20.0
Economic variances	(987.4)	639.2	(348.1)
Values as of March 31, 2023	2,901.3	1,796.9	4,698.2

(2) Medicare Life

(billions of yen)

	Adjusted net worth	Value of in-force business	EEV
Values as of March 31, 2022	30.9	234.2	265.1
Value of new business	-	27.8	27.8
Expected existing business contribution (market-consistent approach)	0.0	3.5	3.5
Risk-free rate	(0.0)	2.8	2.8
In excess of risk-free rate	0.0	0.7	0.7
Expected transfer from VIF to adjusted net worth	(12.0)	12.0	-
on in-force at beginning of year	3.5	(3.5)	-
on new business	(15.6)	15.6	-
Non-economic experience variances	(11.9)	1.4	(10.4)
Non-economic assumptions changes	-	0.0	0.0
Economic variances	(9.9)	12.7	2.8
Capital injection by Sumitomo Life (Note)	40.0	-	40.0
Values as of March 31, 2023	37.1	292.0	329.1

(Note) During the year ended March 31, 2023, Medicare Life received ¥40.0 billion as additional capital from Sumitomo Life. The capital injection represents an intragroup transaction, thus has no impact on the Group EEV.

## (3) Symetra

(billions of yen)

	Adjusted net worth	Value of in-force business	EEV
Values as of December 31, 2021	230.8	26.2	257.1
Adjustments to the values as of December 31, 2021	35.4	4.0	39.5
Adjusted values as of December 31, 2021	266.3	30.3	296.6
Value of new business	-	31.0	31.0
Expected existing business contribution (top-down approach)	(2.8)	29.6	26.8
Expected transfer from VIF to adjusted net worth	7.3	(7.3)	-
on in-force as of December 31, 2021	4.2	(4.2)	-
on new business	3.1	(3.1)	-
Non-economic experience variances	32.7	(41.9)	(9.1)
Non-economic assumptions changes	-	(3.2)	(3.2)
Economic variances	(13.9)	22.1	8.2
Values as of December 31, 2022	289.7	60.6	350.3

### 3. Sensitivity Analysis

#### a. Sensitivity Analysis of EEV of the Group and the Group's value of new business

##### (1) Sensitivity analysis of EEV of the Group

		(billions of yen)	
		EEV	increase (decrease)
EEV as of March 31, 2023		4,751.2	-
Sensitivity 1:	50bp upward parallel shift in risk-free yield curve	4,893.1	141.9
Sensitivity 2:	50bp downward parallel shift in risk-free yield curve	4,591.3	(159.8)
Sensitivity 3:	10% decline in equity and real estate values	4,501.9	(249.2)
Sensitivity 4:	10% decline in maintenance expenses	4,872.0	120.8
Sensitivity 5:	10% decline in surrender and lapse rate	4,892.4	141.2
Sensitivity 6:	5% decline in mortality and morbidity rates for life insurance products	5,010.7	259.5
Sensitivity 7:	5% decline in mortality and morbidity rates for annuities	4,745.2	(5.9)
Sensitivity 8:	Setting required capital at statutory minimum level	4,837.4	86.2
Sensitivity 9:	25% increase in implied volatilities of equity and real estate values	4,750.9	(0.2)
Sensitivity 10:	25% increase in implied volatilities of swaptions	4,704.0	(47.1)

The following table shows the effect of sensitivities 1 through 3 and 8 on adjusted net worth. Only the value of in-force business is affected in sensitivities 4 through 7, 9 and 10 in the above table.

		(billions of yen)
		increase (decrease)
Sensitivity 1:	50bp upward parallel shift in risk-free yield curve	(944.8)
Sensitivity 2:	50bp downward parallel shift in risk-free yield curve	785.1
Sensitivity 3:	10% decline in equity and real estate values	(244.3)
Sensitivity 8:	Setting required capital at statutory minimum level	(24.9)



(2) Sensitivity analysis of the Group's value of new business

(billions of yen)

	Value of new business	increase (decrease)
Value of new business for the fiscal year ended March 31,2023	120.8	-
Sensitivity 1: 50bp upward parallel shift in risk-free yield curve	141.2	20.3
Sensitivity 2: 50bp downward parallel shift in risk-free yield curve	95.2	(25.6)
Sensitivity 3: 10% decline in equity and real estate values	120.4	(0.3)
Sensitivity 4: 10% decline in maintenance expenses	129.1	8.3
Sensitivity 5: 10% decline in surrender and lapse rate	132.3	11.5
Sensitivity 6: 5% decline in mortality and morbidity rates for life insurance products	137.9	17.0
Sensitivity 7: 5% decline in mortality and morbidity rates for annuities	120.8	(0.0)
Sensitivity 8: Setting required capital at statutory minimum level	127.4	6.5
Sensitivity 9: 25% increase in implied volatilities of equity and real estate values	120.8	(0.0)
Sensitivity 10: 25% increase in implied volatilities of swaptions	119.8	(0.9)

b. Sensitivity Analysis by company

(1) Sumitomo Life

i . Sensitivity Analysis of EEV

		(billions of yen)	
		EEV	increase (decrease)
EEV as of March 31, 2023		4,698.2	-
Sensitivity 1:	50bp upward parallel shift in risk-free yield curve	4,839.2	141.0
Sensitivity 2:	50bp downward parallel shift in risk-free yield curve	4,551.0	(147.1)
Sensitivity 3:	10% decline in equity and real estate values	4,450.2	(248.0)
Sensitivity 4:	10% decline in maintenance expenses	4,792.8	94.6
Sensitivity 5:	10% decline in surrender and lapse rate	4,822.0	123.8
Sensitivity 6:	5% decline in mortality and morbidity rates for life insurance products	4,919.2	220.9
Sensitivity 7:	5% decline in mortality and morbidity rates for annuities	4,692.1	(6.0)
Sensitivity 8:	Setting required capital at statutory minimum level	4,748.8	50.6
Sensitivity 9:	25% increase in implied volatilities of equity and real estate values	4,698.0	(0.2)
Sensitivity 10:	25% increase in implied volatilities of swaptions	4,651.2	(47.0)

The following table shows the effect of sensitivities 1 through 3 on adjusted net worth. Only the value of in-force business is affected in sensitivities 4 through 10 in the above table.

		(billions of yen)
		increase (decrease)
Sensitivity 1:	50bp upward parallel shift in risk-free yield curve	(939.3)
Sensitivity 2:	50bp downward parallel shift in risk-free yield curve	778.1
Sensitivity 3:	10% decline in equity and real estate values	(246.3)

ii . Sensitivity analysis of the value of new business

(billions of yen)

	Value of new business	increase (decrease)
Value of new business for the fiscal year ended March 31,2023	61.9	-
Sensitivity 1: 50bp upward parallel shift in risk-free yield curve	84.6	22.6
Sensitivity 2: 50bp downward parallel shift in risk-free yield curve	36.6	(25.3)
Sensitivity 3: 10% decline in equity and real estate values	61.9	-
Sensitivity 4: 10% decline in maintenance expenses	66.1	4.1
Sensitivity 5: 10% decline in surrender and lapse rate	70.6	8.7
Sensitivity 6: 5% decline in mortality and morbidity rates for life insurance products	72.0	10.1
Sensitivity 7: 5% decline in mortality and morbidity rates for annuities	61.9	0.0
Sensitivity 8: Setting required capital at statutory minimum level	64.1	2.1
Sensitivity 9: 25% increase in implied volatilities of equity and real estate values	61.9	(0.0)
Sensitivity 10: 25% increase in implied volatilities of swaptions	60.9	(0.9)

(2) Medicare Life

i . Sensitivity Analysis of EEV

(billions of yen)

	EEV	increase (decrease)
EEV as of March 31, 2023	329.1	-
Sensitivity 1: 50bp upward parallel shift in risk-free yield curve	332.0	2.8
Sensitivity 2: 50bp downward parallel shift in risk-free yield curve	319.3	(9.7)
Sensitivity 3: 10% decline in equity and real estate values	329.1	-
Sensitivity 4: 10% decline in maintenance expenses	337.7	8.5
Sensitivity 5: 10% decline in surrender and lapse rate	327.2	(1.8)
Sensitivity 6: 5% decline in mortality and morbidity rates for life insurance products	352.6	23.4
Sensitivity 7: 5% decline in mortality and morbidity rates for annuities	329.1	-
Sensitivity 8: Setting required capital at statutory minimum level	329.8	0.6
Sensitivity 9: 25% increase in implied volatilities of equity and real estate values	329.1	-
Sensitivity 10: 25% increase in implied volatilities of swaptions	329.0	(0.1)

The following table shows the effect of sensitivities 1 through 3 on adjusted net worth. Only the value of in-force business is affected in sensitivities 4 through 10 in the above table.

(billions of yen)

	increase (decrease)
Sensitivity 1: 50bp upward parallel shift in risk-free yield curve	(11.5)
Sensitivity 2: 50bp downward parallel shift in risk-free yield curve	9.2
Sensitivity 3: 10% decline in equity and real estate values	-

ii . Sensitivity analysis of the value of new business

(billions of yen)

	Value of new business	increase (decrease)
Value of new business for the fiscal year ended March 31,2023	27.8	-
Sensitivity 1: 50bp upward parallel shift in risk-free yield curve	27.8	0.0
Sensitivity 2: 50bp downward parallel shift in risk-free yield curve	26.6	(1.2)
Sensitivity 3: 10% decline in equity and real estate values	27.8	-
Sensitivity 4: 10% decline in maintenance expenses	29.5	1.6
Sensitivity 5: 10% decline in surrender and lapse rate	28.7	0.9
Sensitivity 6: 5% decline in mortality and morbidity rates for life insurance products	32.6	4.7
Sensitivity 7: 5% decline in mortality and morbidity rates for annuities	27.8	-
Sensitivity 8: Setting required capital at statutory minimum level	27.9	0.0
Sensitivity 9: 25% increase in implied volatilities of equity and real estate values	27.8	-
Sensitivity 10: 25% increase in implied volatilities of swaptions	27.8	-

(3) Symetra

i . Sensitivity Analysis of EEV

(billions of yen)

	EEV	increase (decrease)
EEV as of December 31, 2022	350.3	-
Sensitivity 1: 50bp upward parallel shift in risk-free yield curve	348.4	(1.9)
Sensitivity 2: 50bp downward parallel shift in risk-free yield curve	347.3	(2.9)
Sensitivity 3: 10% decline in equity and real estate values	349.0	(1.2)
Sensitivity 4: 10% decline in maintenance expenses	367.9	17.6
Sensitivity 5: 10% decline in surrender and lapse rate	369.6	19.3
Sensitivity 6: 5% decline in mortality and morbidity rates for life insurance products	365.4	15.1
Sensitivity 7: 5% decline in mortality and morbidity rates for annuities	350.4	0.1
Sensitivity 8: Setting required capital at statutory minimum level	385.2	34.9
Sensitivity 9: 1% increase in equity and real estate yield	366.6	16.3
Sensitivity 10: 50bp upward shift in risk discount rate	337.1	(13.1)
Sensitivity 11: 50bp downward shift in risk discount rate	364.5	14.2

The following table shows the effect on the adjusted net worth of sensitivities 1 through 3 and 8. Only the value of in-force business is affected in sensitivities 4 through 7 and 9 through 11 in the above table.

(billions of yen)

	increase (decrease)
Sensitivity 1: 50bp upward parallel shift in risk-free yield curve	6.0
Sensitivity 2: 50bp downward parallel shift in risk-free yield curve	(2.2)
Sensitivity 3: 10% decline in equity and real estate values	1.9
Sensitivity 8: Setting required capital at statutory minimum level	(24.9)

ii . Sensitivity analysis of the value of new business

(billions of yen)

	Value of new business	increase (decrease)
Value of new business for the year ended December 31,2022	31.0	-
Sensitivity 1: 50bp upward parallel shift in risk-free yield curve	28.6	(2.3)
Sensitivity 2: 50bp downward parallel shift in risk-free yield curve	31.9	0.9
Sensitivity 3: 10% decline in equity and real estate values	30.6	(0.3)
Sensitivity 4: 10% decline in maintenance expenses	33.5	2.4
Sensitivity 5: 10% decline in surrender and lapse rate	32.9	1.8
Sensitivity 6: 5% decline in mortality and morbidity rates for life insurance products	33.2	2.1
Sensitivity 7: 5% decline in mortality and morbidity rates for annuities	30.9	(0.0)
Sensitivity 8: Setting required capital at statutory minimum level	35.3	4.2
Sensitivity 9: 1% increase in equity and real estate yield	31.1	0.0
Sensitivity 10: 50bp upward shift in risk discount rate	29.2	(1.8)
Sensitivity 11: 50bp downward shift in risk discount rate	32.7	1.6

For the business valued using a top-down approach, sensitivity 1 and 2 are calculated based on simultaneous upward/downward parallel shift of 50bp in both the investment yields of the future reinvestment and the risk discount rate.

Sensitivity 10 and 11 represent the effect on EEV of an upward/downward shift of 50bp of the risk discount rate for a top-down approach.

#### 4. Note

The calculation of EEV requires numerous assumptions regarding future projections that are subject to risks and uncertainties. Future results may differ from those assumptions used in the calculation of EEV.

Appendix A: Principal EEV Assumptions (Sumitomo Life and Medicare Life)

1. Economic assumptions

a. Risk-free rate

In the certainty equivalent calculation and the interest rate model calibration, the Japanese, U.S. and Australian Government Bond are used as proxies for risk-free rates.

As the term of life insurance policies is generally longer than financial instruments in the market, the ultra-long term rate data which is not available in the market should be set. Because of low liquidity of long-term Japanese, U.S. and Australian Government Bond in the market, we extrapolated the risk-free rates.

In the extrapolation method using an ultimate forward rate, interest rate for ultra-long term, which is not available in the market, converges to an ultimate forward rate which is future forward rate based on macro-economic analysis. The extrapolation method using an ultimate forward rate is used in the Insurance Capital Standard (ICS) being developed by the International Association of Insurance Supervisors, and is also permitted in the MCEV Principles and used in EU Solvency II.

For risk-free rates (forward rates) of each currency, the ultimate forward rate, last point of liquidity and convergence point are set as below in consideration of the ICS Version 2.0, etc. We extrapolate the yield curve to the ultimate forward rate by using the Smith-Wilson method.

	JPY		USD		AUD	
	March 31, 2022	March 31, 2023	March 31, 2022	March 31, 2023	March 31, 2022	March 31, 2023
ultimate forward rate	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%
last point of liquidity	30 years	30 years	30 years	30 years	30 years	30 years
convergence point	60 years	60 years	60 years	60 years	60 years	60 years



The table below shows, for selected terms, the risk-free rates (spot rates) which are used in the calculations.

Term	JPY		USD		AUD	
	March 31, 2022	March 31, 2023	March 31, 2022	March 31, 2023	March 31, 2022	March 31, 2023
1 year	(0.075)%	(0.115)%	1.634%	4.601%	0.987%	3.124%
2 year	(0.030)%	(0.061)%	2.321%	4.081%	1.789%	3.019%
3 year	(0.031)%	(0.052)%	2.499%	3.794%	2.325%	2.943%
4 year	(0.002)%	0.024%	2.510%	3.678%	2.528%	2.979%
5 year	0.036%	0.101%	2.470%	3.610%	2.622%	3.049%
10 year	0.219%	0.396%	2.314%	3.460%	2.805%	3.362%
15 year	0.473%	0.800%	2.320%	3.554%	3.031%	3.708%
20 year	0.715%	1.108%	2.650%	3.952%	3.209%	3.927%
25 year	0.853%	1.235%	2.615%	3.849%	3.257%	3.950%
30 year	0.941%	1.370%	2.412%	3.615%	3.251%	3.864%
35 year	1.128%	1.556%	2.385%	3.506%	3.268%	3.805%
40 year	1.387%	1.777%	2.486%	3.493%	3.308%	3.782%
45 year	1.627%	1.979%	2.606%	3.508%	3.350%	3.774%
50 year	1.833%	2.152%	2.715%	3.529%	3.390%	3.771%

(Source: Ministry of Finance(JPY) and bloomberg(the others) (after interpolation/extrapolation))

b. Principal dynamic assumption

(1) Interest rate model

As an interest rate model, Sumitomo Life has adopted a SABR LIBOR Market model, in which interest rates associated with Japanese yen, U.S. dollars, Euros, British pounds and Australian dollars are calculated. The model has been adjusted to be in line with a risk-neutral approach in which Japanese yen is set as a base currency, and correlations between the interest rates have also been taken into account. The interest rate model has been calibrated to be consistent with the market environment as of each reporting date, and parameters used are estimated from the yield curve and implied volatilities of interest rate swaptions with various maturities. 5,000 scenarios are used in calculating the time value of financial options and guarantees through the stochastic method.

A summary of implied volatilities of interest rate swaptions used to calibrate the scenarios is as follows:

Interest rate swaptions

(bp)

		March 31,2022					March 31,2023				
Option Term	Swap Term	JPY	USD	EUR	GBP	AUD	JPY	USD	EUR	GBP	AUD
5 year	10 year	34.1	87.6	76.8	83.0	77.9	43.1	89.9	90.9	98.3	82.1
7 year	10 year	34.4	81.6	73.3	78.8	73.7	40.8	82.9	83.2	92.3	75.2
10 year	10 year	35.8	73.7	67.5	74.1	66.8	39.2	73.8	75.4	85.8	67.0
15 year	10 year	38.0	64.5	61.5	69.8	-	38.7	63.5	66.3	79.9	-
20 year	10 year	40.0	60.0	57.2	67.3	-	38.5	57.0	60.4	75.1	-

(Source: Bloomberg (adjusted))

(2) Implied volatilities of equities and currencies

Volatilities of major equity indices and currencies are calibrated based on implied volatilities of options traded in the market. Implied volatilities used to calibrate the scenarios are as follows:

Stock options

Currency	Underlying Asset	Option Term	Volatility	
			March 31, 2022	March 31, 2023
JPY	Nikkei225	3 year	19.9%	18.3%
		4 year	19.7%	18.4%
		5 year	19.6%	18.5%
USD	S&P 500	3 year	21.4%	20.6%
		4 year	21.3%	21.0%
		5 year	21.3%	21.4%
EUR	Euro Stoxx50	3 year	19.6%	18.5%
		4 year	19.3%	18.6%
		5 year	19.3%	19.0%
GBP	FTSE 100	3 year	17.7%	16.1%
		4 year	17.6%	16.6%
		5 year	17.6%	17.0%

(Source: Markit (after interpolation/extrapolation) )

Currency options

Currency	Option Term	Volatility	
		March 31, 2022	March 31, 2023
USD	5 year	8.4%	8.3%
EUR	5 year	8.9%	10.7%
GBP	5 year	10.9%	12.1%
AUD	5 year	13.3%	13.1%

(Source: Bloomberg)

### (3) Correlations

In addition to the implied volatilities described above, each company has calculated implied volatilities reflecting its asset portfolio and correlation factors. The share of each asset is assumed to be unchanged over the projection periods.

With regard to correlation factors, market-consistent data from exotic options with sufficient liquidity have not been observed in the market. Therefore, Sumitomo Life estimated correlation factors based on historical market data. Specifically, the monthly data from March 31, 2013 to March 31, 2023 have been used. The following table shows correlation factors between major variables.

	1year Rate /JPY	1year Rate /USD	1year Rate /EUR	1year Rate /GBP	1year Rate /AUD	USD/JPY	EUR/JPY	GBP/JPY	AUD/JPY	NIKKEI 225	S&P500	EuroStoxx 50	FTSE100
1year Rate /JPY	1.00	0.52	0.68	0.50	0.49	0.33	0.39	0.34	0.27	0.25	(0.05)	0.01	0.01
1year Rate /USD	0.52	1.00	0.75	0.75	0.70	0.54	0.41	0.42	0.34	0.21	(0.04)	0.01	0.05
1year Rate /EUR	0.68	0.75	1.00	0.79	0.70	0.32	0.44	0.28	0.25	0.07	(0.22)	(0.13)	(0.08)
1year Rate /GBP	0.50	0.75	0.79	1.00	0.64	0.32	0.31	0.28	0.17	0.05	(0.23)	(0.12)	(0.16)
1year Rate /AUD	0.49	0.70	0.70	0.64	1.00	0.35	0.35	0.28	0.47	0.06	(0.09)	(0.07)	0.01
USD/JPY	0.33	0.54	0.32	0.32	0.35	1.00	0.65	0.68	0.47	0.42	0.01	0.14	0.03
EUR/JPY	0.39	0.41	0.44	0.31	0.35	0.65	1.00	0.81	0.66	0.49	0.26	0.23	0.13
GBP/JPY	0.34	0.42	0.28	0.28	0.28	0.68	0.81	1.00	0.63	0.62	0.39	0.42	0.14
AUD/JPY	0.27	0.34	0.25	0.17	0.47	0.47	0.66	0.63	1.00	0.61	0.54	0.45	0.42
NIKKEI 225	0.25	0.21	0.07	0.05	0.06	0.42	0.49	0.62	0.61	1.00	0.68	0.71	0.54
S&P500	(0.05)	(0.04)	(0.22)	(0.23)	(0.09)	0.01	0.26	0.39	0.54	0.68	1.00	0.78	0.69
EuroStoxx 50	0.01	0.01	(0.13)	(0.12)	(0.07)	0.14	0.23	0.42	0.45	0.71	0.78	1.00	0.79
FTSE100	0.01	0.05	(0.08)	(0.16)	0.01	0.03	0.13	0.14	0.42	0.54	0.69	0.79	1.00

c. Assumed investment yield used for the calculation of expected returns

Assumed investment yields on major asset categories used for the calculation of “Expected existing business contribution (the sum of risk-free rate and excess of risk-free rate)” in “2. Statement of changes in EEV” are as follows. The Weighted-average assumed investment yield (annual rate) is based on the asset portfolio at the beginning of the year. The yield for Sumitomo Life is 1.3% and, for Medicare Life, is 0.3%.

	Assumed investment yield (annual rate)
Fixed income assets (excl. Super long-term bonds)	0.1%
Super long-term bonds(Note)	0.6%
Foreign bonds (excl. Currency-hedged foreign bonds)	1.6%
Currency-hedged foreign bonds	1.1%
Domestic stocks	5.4%
Foreign stocks	6.4%

(Note) Bonds with a maturity of more than 10 years

## 2. Non-economic assumptions

All cash flows (premiums, operating expenses, benefits and claims, cash surrender value, tax, etc.) are projected applying the best estimate assumptions, by product, referring to past, current and expected future experience.

### a. Operating expenses

Operating expenses are set based on the experience of each company. The look-through basis is applied in terms of operating expenses of insurance business.

Future inflation rates are set as follows.

Up to the 30th year: The inflation rate is set at 0.39% with reference to the breakeven inflation rate incorporated in the inflation-linked government bonds.

After the 31st year: The inflation rate was gradually adjusted to converge to 2.00% (the inflation rate incorporated in the terminal level of the risk-free rate) in the 60th year.

Sumitomo Life's operating expense ratio assumption excludes one-time expenses (a portion of expenses related to the relocation of Tokyo Head Office functions) that are not expected to be incurred on a recurring basis in the future. The value of new business of Sumitomo Life is calculated excluding the part of staff salary, system expenses, etc.(Note) In calculating the operating expenses required to acquire new policies, the impact of refraining from sales visits due to the new coronavirus outbreak (COVID-19) is taken into consideration.

(Note) The expenses are ¥5.0 billion.

### b. Policyholder dividends

#### (1) Sumitomo Life

Policyholder dividend rates are based on the current dividend policy, and set according to market-consistent, risk-neutral scenarios.

#### (2) Medicare Life

No assumption of policyholder dividend rate is set, as it sells only non-participating policies.

### c. Effective tax rate

In the projection of future profits, effective tax rate is set at the following rates, based on the recent corporate tax rates.

Sumitomo Life: 27.96%

Medicare Life : 28.00%

Appendix B: Principal EEV Assumptions (Symetra)

1. Economic Assumptions and Risk Discount Rate

a. Economic assumptions

Investment cash flows for the top-down approach are based on current and expected asset allocations and the economic environment on the reporting date. Key economic assumptions include the level of government bond rates, credit spreads, default rates and investment expenses. Government bond rates and credit spreads were set equal to the levels of the reporting date.

Existing yields are as follows:

	Current yield (%)	
	December 31,2021	December 31,2022
Corporate Bonds	3.38%	3.60%
Grand Total	3.38%	4.13%

(Note) Statutory basis, before default, excluding investment costs

Reinvestment yields vary by liability group, in accordance with the characteristics of the liabilities and actual practice, and are determined based on the current and expected future reinvestment strategy.

Reinvestment rates by main liability group are as follows:

Main Products	Reinvestment rates (Note3,4)	
	December 31,2021	December 31,2022
Life	2.94-3.68%	5.60-6.02%
Annuities (Note1)	1.73-2.77%	5.51-5.67%
Benefits	2.18%	5.50%
VA (Note2)	7.50%	7.50%

- (Note1) VA is not included
- (Note2) Separate account
- (Note3) Before default, excluding investment costs
- (Note4) Rates vary by product type

Default rates, which apply to existing assets and reinvestments, are determined by asset type and rating, where applicable, based on historical studies.

Expected default cost net of recovery are as follows:

	Default cost (bp)	
	December 31,2021	December 31,2022
Existing Assets		
AAA-A	6	5
BBB	14	13
Reinvestment Assets		
AAA-A	2-12	2-12
BBB	7-22	7-21

b. Risk discount rates

Risk discount rates are set using a weighted average cost of capital approach (WACC) taking into account the cost of equity and cost of debt.

Risk discount rates are as follows:

	In-force business	
	December 31,2021	December 31,2022
Risk discount rate	5.25%	7.75%
Risk-free rate (Note)	1.52%	3.88%
Risk margin	3.73%	3.87%

  

	New business			
	Six months ended June 30, 2021	Six months ended December 31, 2021	Six months ended June 30, 2022	Six months ended December 31, 2022
Risk discount rate	5.25%	5.25%	7.00%	7.75%
Risk-free rate (Note)	1.45%	1.52%	2.98%	3.88%
Risk margin	3.80%	3.73%	4.02%	3.87%

(Note)10 year U.S. government bond yield



2. Non-economic assumptions

All cash flows (premium, operating expense, benefits and claims, cash surrender value, tax, etc.) are projected each insurance, applying the best estimate assumptions into the future, by product, referring to past, current and expected future experience.

For interest sensitive business, future credited rates are based on current credited rate setting methods and are consistent with the projected economic assumptions. Dynamic policyholder behavior is applied where appropriate.

The future inflation rate is set with reference to the Consumer Price Index (individual insurance and individual annuity are 2.15%).

The tax rate applied to the projected taxable income is 21.00%.

3. Exchange rate

The EEV of Symetra is calculated in local currency and converted into JPY using the following rate:

	December 31,2021	December 31,2022
USD1.00	JPY115.02	JPY132.70