

May 27, 2013  
Sony Life Insurance Co., Ltd.

## Disclosure of Market Consistent Embedded Value as of March 31, 2013

Tokyo, May 27, 2013 – Sony Life Insurance Co., Ltd. (“Sony Life”), a wholly owned subsidiary of Sony Financial Holdings Inc., today disclosed its Market Consistent Embedded Value (“MCEV”) as of March 31, 2013, compliant with the European Insurance CFO Forum Market Consistent Embedded Value Principles<sup>1</sup> (“MCEV Principles”). MCEV is an indicator used to support an analysis of the value of a life insurance operation.

Sony Life maintains its accounting records and prepares its financial statements in Japanese yen in accordance with the Company Law of Japan and the Insurance Business Law of Japan and in conformity with generally accepted accounting principles and practices in Japan (“Japanese GAAP”). Sony Financial Holdings Inc.’s parent company, Sony Corporation, reports its financial statements in accordance with generally accepted accounting principles and practices in the United States. The figures shown below with respect to Sony Life’s financial statements are based on Japanese GAAP.

### Summary

Sony Life’s MCEV as of March 31, 2013 was as follows. New business value indicates the value of new business acquired during the fiscal year ended March 31, 2013.

(Billions of yen)

	As of March 31, 2013	As of March 31, 2012	Change
MCEV	1,064.7	1,041.5	23.2
Adjusted net worth	770.8	409.2	361.7
Value of existing business	293.9	632.4	(338.5)
New business value	41.6	65.2	(23.6)

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## Table of Contents

1. Introduction .....	3
<b>1.1 About MCEV</b> .....	3
<b>1.2 Covered business</b> .....	3
<b>1.3 Statement of directors</b> .....	3
<b>1.4 Opinion of outside specialist</b> .....	3
<b>1.5 Compliance with MCEV Principles</b> .....	4
<b>1.6 Definition of MCEV</b> .....	4
<b>1.7 Use of Japanese government bond yields as risk free rates</b> .....	5
2. MCEV Results for Sony Life .....	6
<b>2.1 MCEV results</b> .....	6
<b>2.2 Adjusted net worth</b> .....	6
<b>2.3 Value of existing business</b> .....	7
<b>2.4 New business value</b> .....	7
<b>2.5 New business margin</b> .....	8
<b>2.6 Reconciliation analysis from MCEV at the end of the prior year</b> .....	9
<b>2.7 Sensitivity analysis</b> .....	12
3. Assumptions .....	15
<b>3.1 Economic assumptions</b> .....	15
<b>3.2 Future asset allocation</b> .....	21
<b>3.3 Other assumptions</b> .....	21
4. Calculation method of MCEV .....	24
<b>4.1 Covered business</b> .....	24
<b>4.2 Treatment of subsidiaries and affiliated companies</b> .....	24
<b>4.3 Treatment of reinsurance</b> .....	24
<b>4.4 Treatment of semi-participating policies</b> .....	24
<b>4.5 MCEV</b> .....	24
<b>4.6 Adjusted net worth</b> .....	24
<b>4.7 Required capital</b> .....	25
<b>4.8 Free surplus</b> .....	26
<b>4.9 Value of existing business</b> .....	26
<b>4.10 Present value of certainty-equivalent profit</b> .....	26
<b>4.11 Time value of options and guarantees</b> .....	26
<b>4.12 Frictional costs</b> .....	27
<b>4.13 Cost of non-hedgeable risks</b> .....	27
<b>4.14 Cost of capital rate</b> .....	28
5. Opinion of Outside Specialist .....	29
6. Glossary .....	31

## **1. Introduction**

### **1.1 About MCEV**

The primary purpose of this press release is to provide information regarding the economic value of our life insurance business and movement analysis of its value.

Many companies—primarily leading life insurance firms in Europe—have disclosed European Embedded Value (“EEV”) following the publication of EEV Principles by the CFO Forum in May, 2004. The CFO Forum, formed by the Chief Financial Officers (CFO) of major European insurance companies, published the EEV Principles in order to address criticisms of Traditional Embedded Value (TEV) and to facilitate the implementation of market consistent valuation methods. (Criticisms of TEV included concern over the valuation of the cost of options and guarantees and concerns about the comparability of results among firms.) This led to the disclosure by many leading European insurers of EEV using a market-consistent approach.

The EEV Principles allow various calculation methodologies, including MCEV. Recognizing that many insurance companies in Europe had begun to disclose MCEV as part of their financial reports and to use MCEV as an internal management tool, the CFO Forum published the MCEV Principles in June 2008. The MCEV Principles aim to improve the effectiveness of EV information for investors by streamlining MCEV disclosure standards for international use. The CFO Forum revised the MCEV Principles in October 2009 and added guidance relating to liquidity premium.

Sony Life has disclosed MCEV in compliance with the MCEV Principles from March 31, 2008.

### **1.2 Covered business**

Our calculations include the business operated by Sony Life and its subsidiaries and affiliated companies. It should be noted, however, that we have calculated the value of the subsidiaries and affiliated companies by adding the following values to the calculation of adjusted net worth:

- AEGON Sony Life Insurance Co., Ltd. is valued at net asset value minus intangible fixed assets and Insurance Business Law Article 113 deferred assets, multiplied by the participation rate.
- Other companies are valued at book value under Japanese GAAP.

### **1.3 Statement of directors**

The Board of Directors of Sony Life confirms that the EV presented here has been produced following the methodology set out in the MCEV Principles. Areas of material noncompliance are stated in Section 1.5

### **1.4 Opinion of outside specialist**

Sony 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 this

firm. Please refer to Section 5 (“Opinion of Outside Specialist”) for details.

### **1.5 Compliance with MCEV Principles**

We have calculated our MCEV in accordance with the calculation methodologies and assumptions in the MCEV Principles. Notable points regarding compliance with the MCEV Principles are as follows:

- The reference rate used in the calculations has been defined as the Japanese Government Bond (JGB) nominal spot rate curve rather than the swap rate curve as stipulated in the MCEV principles.
- The calculated value of MCEV is the value for Sony Life only, and not the consolidated value of our parent company, Sony Financial Holdings Inc.
- Group MCEV, as prescribed in the MCEV Principles, is not considered in this report, as the report is for Sony Life on a standalone basis.
- With respect to Sony Life’s subsidiary and its equity-method affiliates, we have not evaluated their life insurance business but reflected the following values in the calculation of adjusted net worth:
  - AEGON Sony Life Insurance Co., Ltd. is valued at net asset value minus intangible fixed assets and Insurance Business Law Article 113 deferred assets, multiplied by the participation rate
  - Other companies are valued at book value under Japanese GAAP
- None of the calculated values of MCEV are presented separately by segment of subsidiary or by affiliated company.
- We have calculated adjusted net worth based on Japanese GAAP, not International Financial Reporting Standards (IFRS).

### **1.6 Definition of MCEV**

The MCEV Principles define MCEV as follows:

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

MCEV consists of adjusted net worth and the value of existing business.

Adjusted net worth is the amount of assets allocated for the covered business as of the valuation date and calculated as the amount of its market value in excess of statutory policy reserves and other liabilities. Adjusted net worth can be split into required capital and free surplus.

The value of existing business consists of the present value of certainty-equivalent profit, time value of options and guarantees, frictional costs, and the cost of non-hedgeable risks.

- The present value of certainty-equivalent profit is the present value of profit based on future cash flows generated from the covered business.
- Time value of options and guarantees is the stochastic valuation of the time value of options and guarantees inherent in insurance contracts based on risk-neutral scenarios.

- Frictional costs are the present value of investment costs and taxes on assets backing the required capital at each point of time in the future.
- Cost of non-hedgeable risks means the present value of costs necessary to maintain capital related to non-hedgeable risks in the future.

These four items are all evaluated on an after-tax basis.

Please refer to Section 4 for more detailed definitions of terms.

### **1.7 Use of Japanese government bond yields as risk free rates**

EU Solvency II suggests the criteria the relevant risk free rates should meet. We considered some of the criteria described below and started to use JGB yields instead of swap rates beginning with the disclosure as of March 31, 2012.

- No credit risk

Japanese yen is the currency whose purchasing power is regulated by Japanese government under a floating exchange rate system, and Japanese government bonds denominated in Japanese yen can be considered to be financial assets with the lowest credit risk. On the other hand, swap rates are reflected by credit risk with regard to LIBOR.

- Realism

Realism refers to whether it should be possible to earn the rates in practice without credit risk. We have been conducting risk management based on economic values. For the purpose of interest rate risk management (ALM), given the difficulties in utilizing swap rate transactions due to limitations under the current accounting framework and solvency regulations as well as the credit risk issue as mentioned above, we are primarily utilizing Japanese government bonds in practice.

- High liquidity

Japanese government bonds have high liquidity even for long maturities such as 30 or 40 years.

Please refer to Section 2.7 for the impact of the change in risk free rates from JGB yields to swap rates on MCEV as of March 31, 2013.

## 2. MCEV Results for Sony Life

### 2.1 MCEV results

Sony Life's MCEV as of March 31, 2013 increased ¥23.2 billion due to the contribution of new business value and the successful execution of our ALM strategy as evidenced by the counterbalancing increases in market value of Japanese government bonds held for the purpose of ALM and decreases in value of existing business primarily caused by the decline in interest rates. The breakdown is shown in the table below.

(Billions of yen)

	As of March 31, 2013	As of March 31, 2012	Change
MCEV	1,064.7	1,041.5	23.2
Adjusted net worth	770.8	409.2	361.7
Value of existing business	293.9	632.4	(338.5)
New business value	41.6	65.2	(23.6)

### 2.2 Adjusted net worth

Adjusted net worth is calculated as the market value of assets allocated for the covered business in excess of statutory policy reserves and other liabilities as of the valuation date. It is the total amount of the net assets line item on the balance sheets, adding reserve for price fluctuations, contingency reserve, reserve for possible loan losses, along with unrealized gains or losses on held-to-maturity securities and unrealized gains or losses on land and buildings, less unfunded pension liabilities and intangible fixed assets, and adjusting for the amount of tax effect equivalent to these seven items, on which valuation gains or losses on subsidiaries and affiliated companies are added. The adjusted net worth at the end of the current fiscal year increased by ¥361.7 billion, primarily because of the large increase in unrealized gain on held-to-maturity securities caused by the decline in interest rates. The breakdown is shown in the table below.

(Billions of yen)

	As of March 31, 2013	As of March 31, 2012	Change
Adjusted net worth	770.8	409.2	361.7
Total net assets	342.3	264.8	77.5
Reserve for price fluctuations	32.3	25.3	6.9
Contingency reserve	59.6	55.3	4.2
Reserve for possible loan losses	0.0	0.0	(0.0)
Unrealized gains or losses on held-to-maturity securities	551.7	155.9	395.9
Unrealized gains or losses on land and buildings	19.4	11.5	7.9
Unfunded pension liabilities	(5.0)	(4.9)	(0.1)
Intangible fixed assets	(26.1)	(24.3)	(1.8)
Tax effect equivalent of above seven items	(193.8)	(66.8)	(127.1)
Valuation gain or loss on subsidiaries and affiliated companies	(9.6)	(7.8)	(1.8)

(Billions of Yen)

	As of March 31, 2013	As of March 31, 2012	Change
Adjusted net worth	770.8	409.2	361.7
Free surplus	418.5	382.9	35.7
Required capital	352.3	26.3	326.0

We set our required capital as the larger of the amount of capital required for a solvency margin ratio of 200% or the amount of capital to cover risks based on an internal model based on economic value. The large increase in required capital at the end of the current fiscal year is due to an increase in the economic value of technical provisions that mainly resulted from the decline in interest rates. Please refer to Section 4.7 for the method used to calculate required capital.

### 2.3 Value of existing business

The value of existing business is the present value of certainty-equivalent profit less the time value of options and guarantees, and frictional costs and the cost of non-hedgeable risks. The value of existing business decreased ¥338.5 billion due mainly to the decline in interest rates. The breakdown is shown in the table below.

(Billions of yen)

	As of March 31, 2013	As of March 31, 2012	Change
Value of existing business	293.9	632.4	(338.5)
Present value of certainty-equivalent profit	633.2	907.7	(274.6)
Time value of options and guarantees	(111.2)	(84.5)	(26.7)
Frictional costs	(13.9)	(5.0)	(8.9)
Cost of non-hedgeable risks	(214.2)	(185.9)	(28.3)

### 2.4 New business value

Business included in the calculation of new business value covers only business acquired during the fiscal year ended March 31, 2013, which is consistent with the financial information we have disclosed, and does not include the value of new business expected to be acquired in the future. The value of new business is the value as of March 31, 2013 and is calculated based on the same assumptions used for the value of existing business on the same date. As the value of new business includes profits and losses from the point of sale to the end of March 2013, actual investment gains and losses during the fiscal year ended March 31, 2013 are reflected. New business value decreased by ¥23.6 billion because of lower profitability caused primarily by the decline in interest rates. A breakdown of the value of new business is as follows:

(Billions of yen)

	As of March 31, 2013	As of March 31, 2012	Change
Value of new business	41.6	65.2	(23.6)
Present value of certainty-equivalent profit	74.1	91.5	(17.5)
Time value of options and guarantees	(12.4)	(8.3)	(4.1)
Frictional costs	(0.2)	(0.2)	0.0
Cost of non-hedgeable risks	(19.9)	(17.8)	(2.1)

## 2.5 New business margin

The new business margin described below is the ratio of the value of new business to the present value of premium income. The present value of premium income is calculated applying the same assumptions as those for the calculation of new business value, and is based on the premium before the deduction of the reinsurance premium.

(Billions of yen)

	As of March 31, 2013	As of March 31, 2012	Change
Value of new business	41.6	65.2	(23.6)
Present value of premium income	1,187.5	1,013.7	173.8
Value of new business / Present value of premium income	3.5%	6.4%	(2.9) points

Relationships between the annualized premiums from new policies and the present value of premium income from new business for the fiscal year ended March 31, 2013 were as follows:

(Billions of yen)

	As of March 31, 2013	As of March 31, 2012	Change
New business single premium	118.4	76.1	42.3
Annualized premiums from level premium new business <sup>2</sup>	103.9	92.4	11.6
Average annualization multiplier <sup>3</sup>	10.29	10.15	0.14

<sup>2</sup> Annualized premiums from level premium new business is calculated by multiplying the number of payments in a year by the amount of premiums received at a time. It should be noted that the definition of annualized premiums here is different from that used in disclosures such as financial results and annual reports.

<sup>3</sup> The average annualization multiplier is calculated as (Present value of premium income – New business single premium) / Annualized premiums from level premium new business.



## 2.6 Reconciliation analysis from MCEV at the end of the prior year

The table below shows the reconciliation analysis of MCEV as of March 31, 2013, from MCEV as of March 31, 2012. The format of the table is in line with the format prescribed by the MCEV Principles.

(Billions of yen)

	Free surplus	Required capital	Value of existing business	MCEV
Opening MCEV (MCEV as of March 31, 2012)	382.9	26.3	632.4	1,041.5
Opening adjustments	(11.7)	—	—	(11.7)
Adjusted opening MCEV	371.2	26.3	632.4	1,029.9
New business value	—	—	41.6	41.6
Expected existing business contribution (risk-free rate)	0.4	0.0	12.3	12.7
Expected existing business contribution (in excess of risk free rate)	0.7	0.1	5.8	6.6
Transfers from value of existing business and required capital to free surplus	(16.0)	1.0	15.0	—
<i>Of which, on new business</i>	<i>(37.5)</i>	—	<i>37.5</i>	—
Experience variances	62.9	(59.9)	2.1	5.1
Assumption changes	(21.8)	21.8	48.6	48.6
Other operating variance	8.9	(8.9)	4.1	4.1
Operating MCEV earnings	35.1	(45.9)	129.5	118.8
Economic variances	23.2	360.9	(458.5)	(74.4)
Other non-operating variance	(11.0)	11.0	(9.5)	(9.5)
Total MCEV earnings	47.3	326.0	(338.5)	34.8
Closing adjustments	—	—	—	—
Closing MCEV (MCEV as of March 31, 2013)	418.5	352.3	293.9	1,064.7

### (1) Opening adjustments

These adjustments reflect changes in dividends paid to shareholders and the effect of the transfer of Sony Life Insurance (Philippines) Corporation.

### (2) New business value

This figure reflects increases resulting from the acquisition of new business during the fiscal year ended March 31, 2013. Please refer to Section 2.4 for information concerning the calculation method.

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

This figure includes the release of the portion for the fiscal year ended March 31, 2013 of the time value of options and guarantees and the cost of non-hedgeable risks, in addition to the release of the expected existing business contributions at a risk-free rate from the opening MCEV (as of March 31, 2012).

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

This figure reflects the profit expected in excess of the risk-free rate generated by holding assets such as ordinary corporate bonds, loans, stocks and real estate. The expected yield used for the fiscal year ended March 31, 2013 was 0.310%, which was developed by reflecting our view of the market environment and annual investment plans for the year against the asset balance at the end of the previous fiscal year.

(5) Transfer from value of existing business and required capital to free surplus

This figure tracks changes in free surplus that emerge over the course of a fiscal year due to transferring profit earned during the fiscal year from existing business value to free surplus and to changes in required capital. The transfer of profit includes both the transfer of profit that was anticipated during the current fiscal year under the MCEV calculation performed at the prior year-end and the transfer of profit that was calculated as a component of new business value for the current fiscal year.

The value of MCEV itself does not change as a result of this transfer as the transfer merely constitutes an internal shift among MCEV components.

(6) Experience variances

These variances show the impact on MCEV of the actual versus assumed differences in non-economic expected profit for the fiscal year ended March 31, 2013 under the MCEV calculation as of March 31, 2012, and of the differences between actual policies in force as of March 31, 2013, and those that were projected to be in force on March 31, 2012 using persistency assumptions.

These variances reflect the impact of one-time expenses incurred during the fiscal year ended March 31, 2013, if applicable. Please refer to Section 3.3 (5) for information on one-time expenses.

(7) Assumption changes

This figure indicates the impact of changes in the assumptions, mainly on mortality and morbidity rates, lapse and surrender rates and operating expense rates.

The changes in mortality and morbidity rates increased the value of existing business.

(8) Other operating variance

This represents the impact of improvements and corrections of the model used in calculating MCEV, including the change in the reference of inflation rate from Consumer Price Index (CPI)-indexed Japanese government bonds to inflation swaps as well as the improvement of the model to calculate the value of existing business.

(9) Operating MCEV earnings

This figure shows the aggregate amount of items (2) through (8).

(10) Economic variances

These variances show the impact of actual to assumed differences in economic assumptions, such as market interest rates and implied volatilities that were reflected in the market environment when calculating MCEV as of March 31, 2012 on future values, and the impact of the actual to assumed difference in expected asset investment income that were assumed would be realized during the year ended March 31, 2013 under MCEV as of March 31, 2012.

The major reasons for decreases in the value of existing business include an update of economic scenarios due to

the change in the market environment such as a decrease in JGB yields, an increase in inflation swap rates and a change in the implied volatilities, accounting for a decrease in the present value of certainty-equivalent profit by ¥429.0 billion, as well as increases in the time value of options and guarantees, the frictional cost and the cost of non-hedgeable risks by ¥(7.9) billion, ¥13.6 billion and ¥23.7 billion, respectively. The major reason for the increase in the adjusted net worth was the increase in prices of Japanese government bonds caused by the decline in interest rates. Overall MCEV decreased by ¥47.9 billion mainly as a result of the decline in JGB yields and by ¥26.5 billion as a result of the increase in the expenses tied to the increase in inflation swap rates.

(11) Other non operating variance

This figure shows the effect of the increase in the consumption tax rate described in Section 3.3 (7).

(12) Closing adjustments

No items were included in closing adjustments.

## 2.7 Sensitivity analysis

The impact of changing the underlying assumptions of MCEV is as follows:

Sensitivities

(Billions of yen)

Assumption	Change in Assumption	MCEV	Change in Amount	Rate of Change
Base	No change	1,064.7	—	—
Interest rates	100bp decrease	829.6	(235.1)	(22%)
	100bp increase	1,121.4	56.7	5%
	Swap rates	1,231.8	167.1	16%
Stock / Real estate market value	10% decrease	1,047.7	(16.9)	(2%)
Stock / Real estate implied volatility	25% increase	1,053.0	(11.6)	(1%)
Interest swaption Implied volatility	25% increase	1,049.9	(14.8)	(1%)
Maintenance expenses	10% decrease	1,082.3	17.6	2%
Lapse and surrender rates	x 0.9	1,070.1	5.5	1%
Mortality rates	Death protection products x 0.95	1,104.7	40.0	4%
	Third-sector and annuity products x 0.95	1,059.8	(4.9)	(0%)
Morbidity rates	x 0.95	1,100.2	35.5	3%
Required capital	Regulatory minimum	1,074.2	9.5	1%

Changes in adjusted net worth within the amount of change in MCEV are shown in the table below. Of items not specified in this table, only the value of existing business has been changed while adjusted net worth remains the same.

(Billions of yen)

Interest rates	100bp decrease	867.6
	100bp increase	(691.8)
Stock / Real estate market value	10% decrease	(11.5)
Stock / Real estate implied volatility	25% increase	(0.4)

## Sensitivity of new business value

(Billions of yen)

Assumption	Change in Assumption	New Business Value	Change in Amount	Rate of Change
Base	No change	41.6	—	—
Interest rates	100bp decrease	(54.0)	(95.6)	(230%)
	100bp increase	94.9	53.3	128%
	Swap rates	54.7	13.1	32%
Stock / Real estate market value	10% decrease	41.5	(0.0)	(0%)
Stock / Real estate implied volatility	25% increase	41.0	(0.6)	(1%)
Interest swaption Implied volatility	25% increase	39.5	(2.0)	(5%)
Maintenance expenses	10% decrease	43.3	1.8	4%
Lapse and surrender rates	x 0.9	45.5	3.9	9%
Mortality rates	Death protection products x 0.95	45.1	3.6	9%
	Third sector and annuity products x 0.95	41.3	(0.3)	(1%)
Morbidity rates	x 0.95	43.9	2.4	6%
Required capital	Regulatory minimum	41.6	0.0	0%

## (1) Interest rates

This sensitivity represents the impact of an immediate parallel shift of the Japanese and foreign government bond yield curves as of the end of March 2013, and the impact if the swap rates were used instead of Japanese government bond yields. Adjusted net worth would change as the market value of bonds and other assets held were to change, while this is not applicable to the case if the swap rates were used. At the same time, the value of existing business would also change as interest rates, the discount rate, yields of new bonds to be purchased in the future as the existing bonds mature, and the investment return on stocks, real estate, and other assets were to change. Here, the sensitivity scenarios were made so that the parameters related to interest rate volatility were equal to those derived for the base case. Only the parameters related to the interest rate term structure were altered when scenarios were developed using the interest rate model. The floor for downward changes in interest rates was set at 0%.

## (2) Stock and real estate market value

This sensitivity represents the impact of immediate changes in market values of stock and real estate as of the end of March 2013. Adjusted net worth would change as the market value of stock and real estate changes. At the same time, the value of existing business would change as the amount of assets changes.

## (3) Implied volatility of stock and real estate

This sensitivity represents the impact of an increase in the implied volatilities of stock used in calculating the time value of options and guarantees. Changes in stock implied volatilities affect the adjusted net worth and the time value of options and guarantees.

(4) Interest swaption implied volatility

This sensitivity represents the impact of an increase in the implied volatility of interest swaption used in calculating the time value of options and guarantees. The value of existing business would change as the time value of options and guarantees change.

(5) Maintenance expenses

This sensitivity represents the impact of a decrease in maintenance expenses. It should be noted that maintenance expenses do not include sales commissions from the in-force policies payable to Sony Life's Lifeplanner sales employees and other sales force in future periods.

(6) Lapse and surrender rates

This sensitivity represents the impact of a decrease in lapse and surrender rates.

(7) Mortality rates

This sensitivity represents the impact of a decrease in the mortality rates. We have shown the impact on death protection products and the impact on third-sector insurance and annuity products separately, as they would have different impacts. We have covered base policies and riders of which the principal benefits are accidental death, disability, cancer, medical and nursing care benefits, and individual annuities with respect to the third-sector insurance and annuity product segment. No management actions were reflected.

(8) Morbidity rates

This sensitivity represents the impact of a decrease in the morbidity rates of sickness and others in third-sector products.

(9) Required capital

This sensitivity represents the impact in the event that required capital is changed to the statutory minimum level, which is a solvency margin ratio of 200%.

(10) Other

The following points should be noted regarding sensitivity:

- Frictional costs and the cost of non-hedgeable risks do not change in the sensitivity tests, with the exception of frictional costs, which are changed in terms of (9) required capital.
- Values of subsidiaries and affiliated companies are not changed except for stock market value sensitivity, where the stock value of subsidiaries and affiliated companies are altered.
- The impact of changing more than one assumption at a time is not congruent with the sum of impacts for each assumption.

### 3. Assumptions

#### 3.1 Economic assumptions

We have made economic assumptions in our calculation of MCEV as of the end of March 2013.

##### (1) Risk-free rate

We have used the JGB yields as of the end of March 2013 as a risk-free rate for the certainty-equivalent projections. It is assumed that forward rates in the 41<sup>st</sup> year and beyond were equal to those in the 40<sup>th</sup> year. We have used Bloomberg's JGB yields as our data source.

The JGB yields for key terms are as follows:

Term	As of the end of March 2013	As of the end of March 2012
1 year	0.06%	0.11%
5 year	0.13%	0.32%
10 year	0.55%	0.99%
20 year	1.40%	1.76%
30 year	1.54%	1.95%
40 year	1.64%	2.11%

The swap rate for key terms which are used for the sensitivity result with swap rates in Section 2.7 (1) are as follows:

Term	As of the end of March 2013
1 year	0.24%
5 year	0.30%
10 year	0.69%
20 year	1.47%
30 year	1.71%
40 year	1.84%

We have not added liquidity premium on the risk free rate as there are no products which are considered to have reasonably predictable and illiquid cash flows and would therefore be appropriate to apply liquidity premium.

##### (2) Interest-rate model

We have calibrated the interest rate model to the market as of the end of March 2013. We have estimated parameters for the interest rate model from the yield curve and the implied volatilities of interest swaptions with different terms. We have used 1,000 scenarios generated by Milliman, Inc. in calculating the time value of options and guarantees under the stochastic method.

The implied volatilities of the interest swaption used in our estimation are as follows:

As of the end of March 2013

Term of swap (in years)	Term of option (in years)	Japanese yen	U.S. dollar	Euro	UK pound
1	1	93.9%	64.5%	95.9%	67.5%
5	1	71.8%	46.4%	50.4%	48.2%
5	5	45.0%	30.6%	31.1%	27.3%
5	7	35.9%	26.2%	26.1%	21.9%
5	10	27.0%	22.8%	22.8%	18.5%
5	15	26.0%	21.2%	23.2%	16.8%
5	20	27.7%	19.3%	24.2%	16.1%
10	1	47.2%	34.2%	36.1%	33.4%
10	5	30.9%	25.9%	27.6%	22.9%
10	7	27.3%	24.6%	25.2%	20.0%
10	10	23.6%	22.3%	23.6%	17.5%
10	15	25.7%	21.1%	23.9%	15.5%
10	20	27.4%	19.7%	23.7%	14.8%
15	1	34.8%	36.3%	30.7%	26.7%
15	5	27.6%	24.0%	26.4%	20.9%
15	7	25.8%	22.5%	24.6%	18.7%
15	10	24.8%	21.4%	23.1%	16.9%
15	15	25.9%	19.4%	22.7%	14.9%
15	20	27.2%	18.7%	21.5%	14.9%
20	1	31.6%	26.7%	29.7%	24.1%
20	5	27.5%	23.1%	26.2%	19.9%
20	7	26.4%	22.8%	24.3%	18.0%
20	10	25.0%	21.4%	22.6%	16.4%
20	15	26.0%	19.4%	21.6%	15.1%
20	20	26.0%	19.0%	19.9%	13.4%



As of the end of March, 2012

Term of swap (in years)	Term of option (in years)	Japanese yen	U.S. dollar	Euro	UK pound
1	1	40.8%	66.4%	57.6%	55.6%
5	1	48.7%	45.6%	38.5%	40.1%
5	5	34.8%	29.9%	27.3%	25.1%
5	7	30.1%	26.9%	24.3%	20.1%
5	10	26.8%	24.5%	22.5%	17.4%
5	15	26.0%	24.0%	24.8%	16.1%
5	20	29.0%	22.7%	28.9%	16.5%
10	1	37.3%	37.2%	32.2%	31.1%
10	5	29.4%	27.8%	25.6%	21.3%
10	7	27.1%	26.1%	24.4%	19.0%
10	10	26.2%	24.6%	24.2%	17.1%
10	15	26.9%	23.8%	27.2%	15.8%
10	20	29.6%	22.1%	29.7%	15.0%
15	1	29.9%	32.6%	29.5%	26.9%
15	5	27.5%	26.2%	25.1%	20.4%
15	7	27.2%	24.3%	24.3%	18.2%
15	10	27.7%	23.0%	24.4%	16.5%
15	15	28.1%	22.3%	26.2%	14.9%
15	20	29.5%	21.0%	26.8%	15.0%
20	1	27.4%	31.5%	29.7%	25.3%
20	5	27.5%	25.9%	26.0%	19.7%
20	7	27.6%	24.1%	25.1%	17.7%
20	10	28.3%	22.7%	24.8%	16.0%
20	15	30.2%	21.6%	25.3%	15.2%
20	20	29.1%	20.7%	24.5%	13.7%

(3) Implied volatility of foreign exchange rates and stocks

We have obtained spot implied volatilities from options with different terms. Implied volatilities are all those for at-the-money options. Bloomberg is the source of data for foreign exchange rates and the stock price index is the average of the implied volatilities provided by securities firms.

We have assumed that forward implied volatilities in the 11<sup>th</sup> year and beyond are equal to those in the 10<sup>th</sup> year for both foreign exchange rates and the stock price index as these derivatives have low liquidities for the period over 10 years.

For UK stocks, we have assumed that forward implied volatility in the 6<sup>th</sup> year and beyond are equal to that in the 5<sup>th</sup> year as reliable data were not available.

Implied volatilities used for the estimation are as follows:

As of the end of March 2013

Term (in years)	Foreign Exchange			Stocks			
	U.S. dollar/ Japanese yen	Euro/ Japanese yen	UK pound/ Japanese yen	Japan TOPIX	U.S. S&P	Euro SX5E	UK FTSE
1	11.5%	13.7%	11.6%	18.5%	18.0%	22.7%	17.3%
5	12.9%	14.6%	13.1%	18.7%	22.3%	23.3%	21.3%
10	16.0%	17.5%	16.3%	21.0%	25.6%	24.0%	—

As of the end of March 2012

Term (in years)	Foreign Exchange			Stocks			
	U.S. dollar/ Japanese yen	Euro/ Japanese yen	UK pound/ Japanese yen	Japan TOPIX	U.S. S&P	Euro SX5E	UK FTSE
1	11.8%	14.0%	12.8%	18.0%	18.6%	23.4%	18.9%
5	15.1%	18.0%	16.6%	20.5%	23.4%	24.6%	23.3%
10	18.6%	22.1%	20.7%	23.2%	28.0%	26.7%	21.0%

(4) Correlation factor

We have calculated correlation factors from the monthly return of each index for a period of five years from April 2008 and to the end of March 2013 as there is no market-consistent data for correlation factors.

As of the end of March 2013

	Japanese yen Interest rate 1Y	U.S. dollar Interest rate 1Y	Euro Interest rate 1Y	UK pound Interest rate 1Y	U.S. dollar / Japanese yen	Euro / Japanese yen	UK pound / Japanese yen	TOPIX	S&P	SX5E	FTSE
Japanese yen Interest rate 1Y	1.00	0.54	0.20	0.51	0.26	0.10	0.38	0.18	0.12	0.08	0.003
U.S. dollar Interest rate 1Y	0.54	1.00	0.59	0.82	0.59	0.32	0.62	0.40	0.23	0.19	0.21
Euro Interest rate 1Y	0.20	0.59	1.00	0.60	0.33	0.58	0.55	0.51	0.54	0.53	0.52
UK pound Interest rate 1Y	0.51	0.82	0.60	1.00	0.34	0.25	0.56	0.36	0.32	0.23	0.21
U.S. dollar / Japanese yen	0.26	0.59	0.33	0.34	1.00	0.61	0.72	0.55	0.18	0.16	0.19
Euro / Japanese yen	0.10	0.32	0.58	0.25	0.61	1.00	0.77	0.67	0.58	0.51	0.52
UK pound / Japanese yen	0.38	0.62	0.55	0.56	0.72	0.77	1.00	0.61	0.42	0.36	0.28
TOPIX	0.18	0.40	0.51	0.36	0.55	0.67	0.61	1.00	0.72	0.69	0.69
S&P	0.12	0.23	0.54	0.32	0.18	0.58	0.42	0.72	1.00	0.88	0.90
SX5E	0.08	0.19	0.53	0.23	0.16	0.51	0.36	0.69	0.88	1.00	0.88
FTSE	0.003	0.21	0.52	0.21	0.19	0.52	0.28	0.69	0.90	0.88	1.00

As of the end of March, 2012

	Japanese yen Interest rate 1Y	U.S. dollar Interest rate 1Y	Euro Interest rate 1Y	UK pound Interest rate 1Y	U.S. dollar / Japanese yen	Euro / Japanese yen	UK pound / Japanese yen	TOPIX	S&P	SX5E	FTSE
Japanese yen Interest rate 1Y	1.00	0.33	0.26	0.52	0.34	0.12	0.42	0.22	0.13	0.12	0.05
U.S. dollar Interest rate 1Y	0.33	1.00	0.43	0.54	0.61	0.34	0.52	0.57	0.40	0.42	0.43
Euro Interest rate 1Y	0.26	0.43	1.00	0.58	0.30	0.59	0.54	0.52	0.54	0.54	0.53
UK pound Interest rate 1Y	0.52	0.54	0.58	1.00	0.37	0.24	0.56	0.36	0.32	0.21	0.20
U.S. dollar / Japanese yen	0.34	0.61	0.30	0.37	1.00	0.55	0.73	0.53	0.21	0.20	0.18
Euro / Japanese yen	0.12	0.34	0.59	0.24	0.55	1.00	0.76	0.64	0.62	0.52	0.52
UK pound / Japanese yen	0.42	0.52	0.54	0.56	0.73	0.76	1.00	0.67	0.49	0.44	0.34
TOPIX	0.22	0.57	0.52	0.36	0.53	0.64	0.67	1.00	0.73	0.71	0.71
S&P	0.13	0.40	0.54	0.32	0.21	0.62	0.49	0.73	1.00	0.89	0.89
SX5E	0.12	0.42	0.54	0.21	0.20	0.52	0.44	0.71	0.89	1.00	0.90
FTSE	0.05	0.43	0.53	0.20	0.18	0.52	0.34	0.71	0.89	0.90	1.00

#### (5) Foreign exchange

Assets denominated in foreign currencies are converted to Japanese yen using the TTM (telegraphic transfer middle exchange rate) as of the end of March 2013.

The table below shows foreign exchange rates of major currencies.

	As of the end of March 2013	As of the end of March 2012
U.S. dollar / Yen	¥94.05	¥82.19
Euro / Yen	¥120.73	¥109.8
UK pound / Yen	¥143.16	¥131.34

### 3.2 Future asset allocation

#### (1) Asset allocation in the general account

Segment accounting is conducted for individual life insurance and individual annuity based on the classifications of the non-participating product segment, semi-participating product segment and interest rate-sensitive whole life insurance segment. Asset allocation in the general account under the stochastic method was determined based on the actual asset allocation in each segment as of the end of March 2013 with an assumption of no changes in asset allocation thereafter.

#### (2) Asset allocation in the separate account

There are eight funds established in the separate account. The asset allocation for each fund at the beginning of the projection is determined based on the actual fund allocation as of the end of March 2013 and no rebalancing adjustments are applied to maintain the initial fund allocation thereafter.

### 3.3 Other assumptions

Assumptions including mortality and morbidity rates, lapse and surrender rates, and operating expense rates, were developed based on best estimates by product as of the end of March 2013. Best-estimate assumptions are developed to reflect past and current experiences as well as expected experiences in the future. Expected future changes in assumptions should be reflected only when they are supported by sufficient reasons. Except for a deteriorating trend in morbidity rates, no other expected future changes are assumed in the best-estimate assumptions applied. Assumptions were developed as follows:

#### (1) Mortality and morbidity rates

Developed based on experiences over the past three years. Deteriorating trends in morbidity rates are taken into account for those A&H products for which deteriorating trends were observed when the experience data were analyzed in conducting the statutory stress test.

#### (2) Lapse and surrender rates

Lapse and surrender rates for the base case were developed based on experiences over the past three years. We have also developed dynamic assumptions in accordance with the level of interest rate or investment

performance. The dynamic assumptions are made for the following products:

- Variable life insurance
- Interest rate sensitive whole life insurance
- Semi-participating products
- Non-participating whole life insurance
- Non-participating endowment insurance

Since we have not identified explicit correlations between interest rates or account values to the amount of minimum guarantee and the lapse and surrender rates regarding products other than variable insurance, we have developed dynamic surrender rates by referring to the experience with similar products and domestic and overseas trends of practice. Going forward, we will strive to improve dynamic surrender rates for the relevant products by carefully monitoring experiential data and referring to experience with similar products and trends of practice in Japan and other countries.

(3) Flexible premiums

There are no flexible premium products and thus no assumptions were developed.

(4) Renewal rates

Because there is very little renewable business and it does not have a significant impact on results, some of policy renewal was reflected in a simplified manner.

(5) Operating expense rates

We have developed unit costs of the expenses incurred for maintenance and administration of policies and payments of claims based on the actual operating expenses in the past fiscal year.

Sony Life Insurance (Philippines) Corporation, a subsidiary, was transferred in December 2012. Accordingly, we have not reflected administration expenses incurred at Sony Life regarding management of this subsidiary in the unit costs. Administration expenses of other subsidiaries and affiliated companies are included in the unit costs. The look-through effect of the relationship with subsidiaries and affiliated companies is not considered except for the points described above.

There are no one-time expenses which were incurred during the fiscal year ended March 31, 2013 and excluded from the unit cost.

Expenses that were not reflected in unit costs accounted for less than 1% of total operating expenses.

Unit costs include management administration charges payable to the parent company, Sony Financial Holdings Inc. The look-through effect has not been considered with regards to the relationship with Sony Financial Holdings Inc. except for the point described above.

(6) Effective tax rate

“The Law to Revise the Income Tax, etc., in Order to Construct a Tax System Addressing Changes in the Socio-Economic Structure” and “The Act on Special Measures for Securing Financial Resources Necessary for Reconstruction from the Great East Japan Earthquake” were promulgated on December 2, 2011. As a result of this, the corporate tax rate was lowered and reconstruction special corporate tax was levied from the fiscal years beginning on or after April 1, 2012, and the statutory effective tax rate is set at 33.33% during the fiscal year

2012 through 2014, and 30.78% in and after the fiscal year 2015.

(7) Consumption tax rate

“The Bill to Amend the Consumption Tax Law for Reforming Tax System to Secure Revenue to Fund the Cost of Social Security” was promulgated on August 22, 2012, which increases the consumption tax rate subject to the economic condition. To reflect this, the future expenses increased assuming the increase in consumption tax rate to 8% at April 1, 2014 and 10% at October 1, 2015.

(8) Inflation rate

Inflation rates were set as in the table below by referring to inflation swap rates and removing the effect of the increase in the consumption tax rate.

Projection Year	Inflation Rate
2013	0.31%
2014	0.30%
2015	1.10%
2016	0.69%
2017	0.87%
2018	0.23%
2019	0.71%
2020	0.83%
2021	0.95%
2022 and later	0.93%

## **4. Calculation method of MCEV**

### **4.1 Covered business**

The covered business is the business operated by Sony Life, its subsidiaries and its affiliated companies.

### **4.2 Treatment of subsidiaries and affiliated companies**

Our calculations include the following values regarding subsidiaries and affiliated companies in the calculation of adjusted net worth:

- AEGON Sony Life Insurance Co., Ltd. is valued at net asset value minus intangible fixed assets, and Insurance Business Law Article 113 deferred assets, multiplied by the participation rate, which is ¥0.4 billion.
- Other companies are valued at book value under Japanese GAAP, which is ¥2.6 billion.

There are no other values reflected in the values of subsidiaries and affiliated companies except for the above, and all other results solely reflect Sony Life (on a non-consolidated basis).

### **4.3 Treatment of reinsurance**

We have designated reinsurance premiums as expenses and reinsurance benefits as income in our projections, as we have ceded as reinsurance the mortality risks of certain death protection insurance products.

### **4.4 Treatment of semi-participating policies**

We have calculated dividends in accordance with the level of future investment returns, based on the same method used to determine the dividend rate for the accounting closure of March 31, 2013, reflecting the present value of certainty-equivalent profit and the time value of options and guarantees.

### **4.5 MCEV**

MCEV is defined as the expected present value of distributable earnings to shareholders generated from assets allocated to the covered business after making appropriate allowance for aggregate risks in the covered business. MCEV is presented as the sum of adjusted net worth and value of existing business.

### **4.6 Adjusted net worth**

Adjusted net worth is calculated as the market value of assets allocated for the covered business in excess of statutory policy reserves and other liabilities as of the valuation date. Specifically, it is equal to the total amount of the net assets section on the balance sheets, adding reserve for price fluctuations, contingency reserve, reserve for



possible loan losses, unrealized gains or losses on held-to-maturity securities, and unrealized gains or losses on land and buildings, less unfunded pension liabilities and intangible fixed assets, and adjusting for the amount of tax effect equivalent of these seven items, on which valuation gains or losses on subsidiaries and affiliated companies are added. Adjusted net worth can be split into required capital and free surplus.

#### **4.7 Required capital**

The MCEV Principles define required capital as the amount of assets that should be held in addition to the assets corresponding to the statutory liability to fulfill in-force policy obligations, which by nature is restricted from distribution to shareholders. The level of required capital should be the larger of the solvency capital to meet the statutory required minimum level or the capital required to meet the internal objectives in terms of marketing or risk management purposes, or to achieve the company's targeted credit rating.

We set our required capital as the larger of the amount of capital required for the current solvency margin ratio of 200% or the amount of capital to cover risks based on the internal model. The latter is larger as of the end of March 2013.

We define the amount of capital to cover risks based on the internal model as the total amount of technical provision and solvency risk capital on an economic value basis in excess of statutory policy reserves (excluding contingency reserves). The solvency risk capital on an economic value basis is calibrated at VaR (99.5%) over one year and based on the internal model, which is a similar but modified model based on the EU Solvency II (QIS5) standard method.

The solvency risk capital on an economic value basis as of the end of March 2013 was ¥661.3 billion (after tax). The effective tax rate used to adjust to the after-tax basis is 30.78%.

We will also revise the internal model itself as appropriate, taking into account domestic and overseas conditions, including developments in international accounting standards, valuation methods of insurance liability on an economic value basis and solvency margin standard trends, as well as the analysis of our internal mortality and morbidity rates data.

Major differences between the internal model approach and the QIS5 approach are as follows:

##### **(1) Market risk**

Market risk quantification follows the QIS5 approach in principle. However, we modified it to make it more suitable in light of the market risk attribute to which we are exposed to where QIS5 standard methodology is considered unable to capture enough risk amount at a 99.5% confidence level. It includes the use of alternate stress parameters for some risks derived by using the same calibration method as that used for QIS5 in the Japanese market. Major stress parameters different from QIS5 include 45% for listed stocks, 100% for subsidiaries and affiliated companies' stocks, and 30% for currency risk.

##### **(2) Insurance underwriting risk**

Quantification of mortality and longevity risks follows the QIS5 approach.

Quantification of morbidity, lapse, expense, and catastrophe risks follows the QIS4 approach. In particular lapse up

/ down stress parameters for the Health module under QIS5 are 20%. Because it makes stress parameters extremely lower only for A&H products, we have kept the parameters at 50%.

(3) Operational risk  
QIS5 is followed.

(4) Correlation parameters  
Correlation parameters follow QIS5 except that the correlation parameter between Global and Other equities is set to one to exclude any diversification effect while it is set to 0.75 under QIS5.

#### **4.8 Free surplus**

Free surplus is the amount of adjusted net worth other than that for required capital.

#### **4.9 Value of existing business**

The value of existing business is calculated as the present value of certainty-equivalent profit less the time value of options and guarantees, the frictional costs and the cost of non-hedgeable risks. New business value is calculated using the same method.

#### **4.10 Present value of certainty-equivalent profit**

The present value of certainty-equivalent profit is the present value of profit based on the future cash flows generated from the covered business. The risk-free rate is used as the assumed investment return on all assets and the discount rate.

The present value of certainty-equivalent profit reflects the intrinsic value of options and guarantees.

#### **4.11 Time value of options and guarantees**

We have calculated the time value of options and guarantees using the stochastic method with risk-neutral scenarios. The time value of options and guarantees is calculated as the difference between the present value of certainty-equivalent profit and the present value of stochastic future profits.

The time value of options and guarantees considers the following items:

- Minimum guarantees of variable life insurance  
The excess of account value over the scheduled policy reserves is attributed to policyholders. However, when the account value is less than the scheduled policy reserves, the cost incurred from executing guaranteed minimum death benefits for variable life insurance is attributed to shareholders.
- Minimum interest rate guarantee for interest rate sensitive whole life insurance

When the investment return exceeds the assumed interest rate, the outperforming portion is credited to policyholder account value. However, when the investment return underperforms the assumed interest rate, the cost for the difference is attributed to shareholders, as the assumed interest rate is guaranteed.

- Interest dividend for semi-participating products

When the investment return exceeds the assumed interest rate, the outperforming portion is credited to the fund for policyholder dividends and paid to policyholders every five years as interest dividends. Accordingly, none of such interest gains would be attributed to shareholders, while interest losses would be attributed to shareholders.

- Surrender options

Policyholders have various options in insurance contracts. Reflected among them are the costs of policyholders' exercising the right of surrender in the event of increased interest rates. Since we have not identified explicit correlations between interest rates or account values to the amount of minimum guarantee and the lapse and surrender rates regarding products other than variable insurance, we have developed dynamic surrender rates by referring to the experience with similar products and domestic and overseas trends of practice. Going forward, we will strive to improve dynamic surrender rates for the relevant products by carefully monitoring experiential data and referring to experience with similar products and trends of practice in Japan and other countries.

#### **4.12 Frictional costs**

We have calculated frictional costs as the present value of investment costs and taxes on assets backing the required capital at each point of time in the future.

#### **4.13 Cost of non-hedgeable risks**

As risks regarding the asymmetric nature of cash flows not reflected in the present value of certainty-equivalent profit are fully reflected in the time value of options and guarantees, we have reflected an allowance for the uncertainty of non-economic assumptions and the portion of economic assumptions considered non-hedgeable with respect to the cost of non-hedgeable risks.

Specifically, we have assumed a risk margin based on the method prescribed in QIS5 of the EU Solvency II framework as the cost of non-hedgeable risks and calculated it using the cost of capital approach. It should be noted that the following points are different from the method prescribed in QIS5:

- Unavoidable market risk which is not clearly defined in QIS5 specifications is set to the uncertainty of the risk-free rates beyond the 40<sup>th</sup> year.
- Catastrophe risk and lapse risk in the Health module follows the QIS4 approach as described in Section 4.7 (2).
- Counterparty default risk has not been reflected in the non-hedgeable risks as its impact is limited.
- We have used risk amounts quantified after taking into consideration the risk mitigation effect through policyholder dividends without any adjustments.
- We have used the cost of capital rate described in Section 4.14.

#### **4.14 Cost of capital rate**

QIS5 of the EU Solvency II has set a cost of capital rate at 6%, which is used for the cost of capital calculation. On the other hand, the CRO (Chief Risk Officer) Forum comprised of CROs from leading insurance companies in Europe proposed that 2.5% to 4.5% would be the appropriate level based on several trial calculations. Following the philosophy of the CRO Forum's approach, we have decided to use 2.5% for the cost of capital rate consistent with the MCEV framework considering Japanese long-term stock risk premiums, the beta of Sony Financial Holdings Inc. and the anticipated impact of the equity risk exposure of Sony Life on the beta of Sony Financial Holdings Inc., which is a hedgeable risk. However, we may revise the method of setting the cost of capital rate in the future as an industry standard has not yet been established.

## 5. Opinion of Outside Specialist

Sony 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. The opinion obtained from Milliman, Inc. is as follows:

Milliman, Inc. (“Milliman”) has been engaged to review the methodology, assumptions and calculations used by Sony Life Insurance Co., Ltd. (“Sony Life”) to determine the Market Consistent Embedded Value (“MCEV”) as of March 31, 2013. Specifically, the scope of our review included the embedded value as of March 31, 2013, the sensitivities, the new business value and the movement analysis from MCEV as of March 31, 2012.

The board of directors made a statement in its News Release Form dated May 27, 2013 that the methodology, assumptions and calculations have been made in accordance with the European Insurance CFO Forum Market Consistent Embedded Value Principles<sup>4</sup>, with the following exceptions:

- The reference rate used in the calculations has been defined as the Japanese Government Bond nominal spot rate curve rather than the swap rate curve as stipulated in the MCEV principles.
- The calculated value of MCEV is the value for the life insurance business of Sony Life only and not the consolidated value of Sony Life’s parent company, Sony Financial Holdings Inc.
- Group MCEV, as prescribed in the MCEV Principles, is not considered in this report, as the report is for Sony Life on a standalone basis.
- With respect to Sony Life’s subsidiaries and its equity-method affiliates, Sony Life has not evaluated their life insurance business but reflected the following values in the calculation of adjusted net worth:
  - AEGON Sony Life Insurance Co., Ltd. is valued at net asset value minus intangible fixed assets and Insurance Business Law Article 113 deferred assets, multiplied by the participation rate
  - Other companies are valued at book value under Japanese GAAP
- None of the calculated values of MCEV are presented separately by segment of subsidiary or by affiliated company.
- Sony Life has calculated the adjusted net worth based on generally accepted accounting principles and practices in Japan and not based on the International Financial Reporting Standards (IFRS).

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;
- The methodology makes an allowance for all the aggregate risks in the covered business through Sony Life’s market-consistent embedded value methodology, which includes
  - 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
- For participating insurance contracts, the assumed policyholder dividend rates, allocation of profits between policyholders and shareholders and other management actions, are consistent with the assumptions and scenarios used in the projections and where applicable local market practice.

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Milliman has reviewed the MCEV methodology, assumptions, calculations and analysis prepared by Sony 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 Sony 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, new business values, sensitivities or movement analysis from the prior period. In arriving at this conclusion, Milliman has relied on data and information provided by Sony 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 Sony 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. Such deviations may materially impact the value calculated.

This opinion is made solely to Sony Life in accordance with the engagement letter between Sony Life and Milliman. Milliman does not accept or assume any responsibility, duty of care or liability to anyone other than Sony 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
A	Appraisal value	Corporate value based on projected cash flows receivable for shareholders from existing business and future new business. It is defined as the current MCEV plus new business value acquired in the future.
	Asymmetric risk	The risk where symmetric upward and downward changes on assumptions do not result in symmetric changes in cash flow. Such risk includes minimum guarantee of variable life insurance and policyholder dividend payment. These risks are evaluated with a stochastic method and presented as a time value of options and guarantees.
B	Best estimate assumption	The assumption that is most likely to occur in the future.
C	Calibration	To set various stochastic model parameters in a market-consistent manner.
	Cost of capital approach	One of the approaches to calculate the risk margin. The cost of risk is determined by taking the present value of the cost to hold capital required in future periods.
	Cost of non-hedgeable risk	The present value of the cost to hold required capital to cover future non-hedgeable risks. As risks regarding the asymmetric nature of cash flows not reflected in the present value of certainty-equivalent profit are fully reflected in the time value of options and guarantees, we have reflected the following in this cost: allowance for uncertainty of non-economic assumptions and the portion of economic assumptions considered non-hedgeable with respect to the cost of non-hedgeable risks.
E	EU Solvency II	A new solvency regulation based on economic value to be applied uniformly within the EU that the European Commission is preparing to implement.
F	Free surplus	The portion of adjusted net worth other than the required capital.
	Frictional costs	The present value of investment costs and taxes on assets backing the required capital at each point of time in the future.
I	Implied volatility	The expected rate of future variability embedded in current option prices, and represents the expected value of the market against the price fluctuation.
L	Look through	To measure the impact of an action on an entire business group rather than only on a particular part of the group.
N	Non-financial risk	Examples are mortality risk, longevity risk, disability risk, operating expense risk, surrender risk and operational risk.
	Non-hedgeable non-financial risk	A non-financial risk such that deep and liquid capital markets do not exist to hedge such risk.
	Non-hedgeable risk	Non-hedgeable risk is composed of non-hedgeable financial risk and non-hedgeable non-financial risk.
O	Options and guarantees	The following are some features of options and guarantees: <ul style="list-style-type: none"> <li>• Policy cash flow would be changed by exercising options granted to the policyholder. An example of such features is the exercise of the surrender option.</li> <li>• It includes guarantee of benefits or policyholder values. An example is a minimum death benefit guarantee for variable life insurance.</li> </ul>

Term		Definition
P	Present value of certainty-equivalent profit	Present value of certainty-equivalent profit is the present value of profit based on the future cash flows generated from the covered business.
Q	QIS4	Quantitative Impact Study. Conducted prior to implementation of the EU Solvency II. The 4 <sup>th</sup> study was conducted in May 2008 and is referred to as QIS4.
	QIS5	Quantitative Impact Study following the QIS4. It was executed between August and November 2010.
R	Required capital	<p>The MCEV Principles define required capital as the capital necessary to hold in excess of statutory policy reserves (excluding contingency reserve), and it is considered to be the larger of the solvency capital to meet the statutory required minimum level or the capital necessary to meet internal objectives or to achieve the company's targeted credit rating.</p> <p>The required capital of Sony Life is set as the larger of the amount of capital corresponding to the solvency margin ratio of 200% or the amount of capital to cover risks based on the internal model.</p>
	Risk-free rate	The reference rate defined in the MCEV Principles. The MCEV Principles state that it should be the swap rate to the currency of the cash flows.
	Risk margin	The cost to hold capital to cover non-hedgeable risks reflected in evaluating the insurance liability on an economic value basis.
	Risk neutral probability	A pseudo probability derived so that the present value of future expected values under multiple scenarios discounted with current risk-free rates is equal to the current value.
	Risk neutral scenario	An interest rate scenario generated under risk-neutral probabilities.
T	Technical provision	The value of liability on an economic value basis, which equals the present value of best estimate cash flows plus Risk Margin.
	Time value and intrinsic value	An option value that has two elements: time value and intrinsic value. Intrinsic value is the option value under certainty-equivalent conditions. Time value is the value of options other than intrinsic value, which is calculated as the difference between the present value of certainty-equivalent profit and the present value of stochastic future profit.