

August 11, 2023

The Directors
Thai Life Insurance Public Company Limited
123 Ratchadaphisek Road
Din Daeng
Bangkok 10400
Thailand

ACTUARIAL CONSULTANT'S REPORT

Dear Directors,

1 INTRODUCTION

1.1. BACKGROUND

Thai Life Insurance Public Company Limited (“Thai Life”, “Company”, “you”, or “your”) has prepared the embedded value (“EV”) and the value of new business (“VONB”) of the Company. The EV has been calculated as at June 30, 2023 and, for comparison purposes, as at December 31, 2022 (collectively referred to as the “Valuation Date”), while the VONB has been calculated in respect of new business sold in the 6-month period ended June 30, 2023 and, for comparison purposes, the 6-month period ended June 30, 2022. The Company has also prepared additional analyses, including sensitivity tests on the EV as at the Valuation Date and VONB, and an analysis of movement in the EV from the EV measured as at the previous calendar year-end (i.e. December 31, 2022). These results are collectively referred to as the “EV Results”, and have been prepared by the Company in connection with public disclosure of the EV Results. The EV as at December 31, 2022 has been based on the Company’s audited Thai Financial Reporting Standards (“TFRS”) accounts while the EV as at June 30, 2023 has been based on the Company’s unaudited but reviewed TFRS accounts (reviewed by the Company’s auditor) as at the respective dates.

Milliman Limited (“Milliman”, “we”, “us” or “our”) has been engaged by Thai Life to independently review and provide an opinion on the EV Results. This report (“Report”) sets out the consolidated results prepared by Thai Life, and includes a description of the EV methodology and assumptions, details of our review and opinion, as well as the reliances and limitations applicable to our work.

In accordance with the engagement letter dated March 27, 2023, this Report has been prepared for public disclosure on Thai Life’s website. This Report should be read in its entirety, including the reliances and limitations, as individual sections, if considered in isolation, may be misleading.

Milliman is acting exclusively for Thai Life, and no one else, in connection with this review of the EV Results. This Report has been prepared solely for the purpose of inclusion in the external disclosure on the Thai Life’s website. This Report should not be used for any other purpose without our prior written consent. Neither Milliman nor any employee of Milliman undertakes responsibility arising in any way whatsoever to any other party in respect of this Report contrary to the aforesaid purpose.

Except where otherwise stated, the figures quoted in this Report as at the Valuation Date do not make allowance for any developments after those dates. The various monetary amounts specified are expressed in Thai Baht (“THB”).

1.2. SCOPE OF OUR WORK

Our work involved the following:

- We have reviewed the methodology and derivation of assumptions used to determine the EV Results presented in this Report.
- The value of in-force business (“VIF”) and VONB have been derived using Thai Life’s in-house models developed in Prophet (the “Prophet Model”), a proprietary modelling software provided by a third party, FIS. In addition, the compilation of results and any off-model adjustments have been carried out using Microsoft Excel (the “Excel Models”). The Prophet Model and Excel Models are referred to collectively as the “Valuation Models” in this Report. We have reviewed certain elements of the Valuation Models used to produce the EV Results. In particular, we have carried out sample policy checks on the projected cash flows produced by the Prophet Model using profit-test spreadsheets we have set up internally, and reviewed the aggregate cash flows by product groups for reasonableness. As part of our model review work, the sample policy checks performed have covered products making up at least 90% of net premium valuation (“NPV”) reserves (for in-force business) and at least 90% of new business annualized premium equivalent (“APE”) for new business written (for new business).

The objective of our review was to confirm that the EV Results have been prepared, in all material respects, in accordance with the methodology and assumptions described in this Report.

1.3. STRUCTURE OF THE REPORT

The various sections of this Report are set out as follows:

- Section 2: Executive summary – provides an overview of the EV Results and explanation of key terms used in this Report
- Section 3: Methodology – provides details of the methodology adopted in the derivation of the EV Results
- Section 4: Assumptions – describes the assumptions used to calculate the EV Results
- Section 5: EV Results – sets out the EV Results, including sensitivity analysis
- Section 6: Milliman review – provides a formal opinion in respect of the EV Results
- Section 7: Reliances and limitations – sets out the reliances and limitations applicable to our work and to this Report
- Appendix A: Abbreviations used in this Report
- Appendix B: Key information received

2 EXECUTIVE SUMMARY

An overview of the EV Results as at the Valuation Date is presented in this section. While reading this section alone can provide a high-level summary, it does not give the full details, and this Report must be read in its entirety in order to be fully understood. Further details of the methodology, assumptions and EV Results, including sensitivity analyses, are set out in Sections 3, 4 and 5 of this Report.

An embedded value is an actuarial method of measuring the consolidated value of shareholders' interests in the in-force business of an insurance company. It is an estimate of the economic value of the life insurance business based on a particular set of assumptions as to future experience, excluding any economic value attributable to future new business. The EV is the sum of the adjusted net worth ("ANW") and VIF, with the methodology defined in Section 3.1 of this Report.

The value of new business represents the value to shareholders arising from the new business issued within the reporting period, with the methodology defined in Section 3.2 of this Report. VONB Margin is equal to VONB expressed as a percentage of APE for the relevant reporting period. APE represents the sum of 100% of annualized first year premium and 10% of single premium.

A summary of the EV Results evaluated under the risk discount rate assumed by the Company is presented in Table 2.1.

Table 2.1: Summary of EV and VONB Results (in THB millions)

Embedded value	As at June 30, 2023	As at December 31, 2022
ANW	124,328.6	115,341.5
VIF before cost of capital	45,017.1	43,617.3
Cost of capital	(16,356.0)	(13,788.7)
VIF	28,661.1	29,828.6
Embedded value	152,989.7	145,170.1

VONB	6-month period ended June 30, 2023	6-month period ended June 30, 2022
VONB before cost of capital	3,643.7	3,549.4
Cost of capital	(354.7)	(248.2)
VONB (1)	3,289.0	3,301.2
APE (2)	5,712.9	6,413.7
VONB Margin [(1) / (2)]	57.6%	51.5%

Figures may not be additive due to rounding.

APE = Annualized premium equivalent = the sum of 100% of annualized first year premium and 10% of single premium.

3 METHODOLOGY

The EV and VONB of Thai Life have been determined using a Traditional Embedded Value (“TEV”) approach. This approach makes implicit allowance for the time value of financial options and guarantees and other risks associated with the realization of the projected future profits through the use of a risk adjusted discount rate. The higher the risk discount rate, the greater the allowance for these risks. TEV methodology is commonly used by life insurance companies in Asia. Alternative approaches, such as those using “fair value” and “Market Consistent Embedded Value”, have been developed, under which these types of risks, including the allowance for the time value of financial options and guarantees, are explicitly valued.

Thai Life has modelled products comprising 98.2% of total Net Premium Valuation (“NPV”) reserves for in-force business as at June 30, 2023. The remainder of total NPV reserves that have not been included in the Prophet Model are mainly in relation to advance premium and policy loans. No value has been assigned in the VIF to the unmodelled items given materiality. However, it should be noted that we have not explicitly investigated the impact on value of these items.

3.1. EMBEDDED VALUE

The EV is taken to be the sum of the ANW and VIF.

The ANW represents the adjusted statutory net asset value attributable to shareholders. The ANW comprises:

the statutory net asset value, reflecting the excess of assets over policy reserves and other liabilities reported on a Thai regulatory basis,

plus/minus mark-to-market adjustments for assets that have not been held on a market value basis,

minus the value of intangible assets.

The ANW includes Thai Life’s 35% stake in CB Life Insurance Company Limited (“CB Life”), measured at cost, which is recognized as “investment in associates” under the Company’s financial statements as at the Valuation Date. No VIF or VONB has been attributed to CB Life due to immateriality.

The VIF represents the present value of future net-of-tax statutory profits arising from the in-force business as at the Valuation Date less the cost of capital required to support the in-force business. The cost of capital is calculated as the present value of the net-of-tax investment return on shareholder assets backing required capital, plus the present value of any projected releases in the required capital, less the face value of the required capital at the Valuation Date.

The business covered in the VIF comprises all life insurance business, including medical, accident and health business written by Thai Life.

The breakdown of ANW and EV results is shown in Section 5.1 of this Report.

3.2. VALUE OF NEW BUSINESS

The VONB represents the value to shareholders arising from the new business issued during the reporting period. The VONB covers all new life insurance sales with premiums paid and policies issued during the reporting period. The VONB reflects the present value, measured at point of sale, of future net-of-tax statutory profits less the corresponding cost of capital. The VONB is calculated quarterly based on assumptions applicable at the start of each quarter.



The VONB results shown in this Report are based on long term unit costs assumptions rather than current expense levels. Based on these long term unit costs assumptions, Thai Life has an acquisition expense overrun of THB 67.8 million in the 6-month period ended June 30, 2023 (equal to 2.1% of VONB for new business written in the same period).

3.3. REQUIRED CAPITAL

The Thai insurance regulator, the Office of Insurance Commission (“OIC”) introduced a revised risk-based capital regime, RBC 2, effective from December 31, 2019. During the transition period of two years from the date of RBC 2 implementation (i.e. for calendar years 2020 and 2021), the required Capital Adequacy Ratio (“CAR”) to avoid regulatory intervention is 120%, increasing to 140% thereafter. The requirement of holding 140% of the required capital has been reflected in both VIF and VONB calculations.

The cost of capital in the VIF and VONB represents the cost of holding required regulatory capital to maintain the business, and is calculated as the present value of the net-of-tax investment return on shareholder assets backing required capital, plus the present value of any projected releases in the required capital, less the face value of the required capital at the Valuation Date.

3.4. NON-CONTROLLING INTEREST

The EV Results represent Thai Life’s 35% share of CB Life, measured at cost, (please refer to Section 3.1) and a 100% holding in all lines of business written by Thai Life.

4 ASSUMPTIONS

This section provides a summary of the assumptions used to determine the EV Results.

4.1. ECONOMIC ASSUMPTIONS

The economic assumptions have been set based on long term returns on assets as prescribed by Thai Life. The assumed long term returns have been set with reference to Thai Life's long term outlook for the economy, interest rates and asset class yields. The current market yields observed at the respective dates for assumption setting (i.e. the Valuation Date assumptions for VIF and at the start of each quarter for VONB) have been assumed to grade to the assumed long term returns.

The investment returns have been determined by applying the projected annual returns for major asset categories to the assumed asset mix. New money after the Valuation Date has been assumed to be invested in accordance with Thai Life's strategic asset allocation, which differs by fund as different funds have been set up to support different insurance products.

The risk discount rate used to determine VIF and VONB has been set by Thai Life. The difference between the risk discount rate and the risk-free rate of return (set with reference to 10-year government bond yields) is referred to as the "risk margin." The risk margin is intended to represent the level of additional return an investor might consider to be appropriate to reflect the underlying risk of the business.

Table 4.1 sets out the current and long term 10-year Thai government bond yield, local equity return, and risk discount rate used to determine the VIF as at the Valuation Date. VONB has been calculated quarterly, based on economic assumptions at the start of the period, which are summarized in Table 4.2.

Table 4.1: Economic assumptions for VIF

Economic assumptions	As at June 30, 2023	As at December 31, 2022
Current market 10-year Thai government bond yield	2.58%	2.64%
Long term 10-Year Thai government bond yield	3.20%	2.70%
Local equity return	8.20%	8.00%
Risk discount rate	8.20%	8.00%

Table 4.2: Economic assumptions for VONB

Economic assumptions	For new business written in the following quarters			
	2Q2023	1Q2023	2Q2022	1Q2022
Current market 10-year Thai government bond yield	2.41%	2.64%	2.35%	1.90%
Long term 10-Year Thai government bond yield	2.70%	2.70%	2.70%	2.70%
Local equity return	8.00%	8.00%	8.00%	8.00%
Risk discount rate	8.00%	8.00%	8.00%	8.00%

Note: As VONB is measured at point of sale, the economic assumptions used to determine the VONB for a particular quarter have been set with reference to the current market government bond yield as at the beginning of that period.

4.2. EXPENSE INFLATION

The assumed long term expense inflation rate assumed by Thai Life as at the Valuation Date is 2.0% p.a., which has been set with reference to the expected long term inflation rates in Thailand.

4.3. TAXATION

The projected statutory profits used to determine the EV and VONB are net of corporate tax. The projections have been based on a continuation of the current tax legislation in Thailand. A corporate tax rate of 20% has been assumed.

4.4. PERSISTENCY

Persistency assumptions include lapses for basic plans, additional lapses for riders, lapse skewness and partial withdrawals. The assumptions differ by policy year and are usually split by product, product type, and distribution channel. The assumptions have been based on Thai Life's historical experience where statistically credible, with allowance for current and future trends and with reference to pricing assumptions where the data available is limited or not statistically credible.

4.5. MORTALITY

Mortality assumptions have been determined by Thai Life based on the Company's historical mortality experience where statistically credible and with reference pricing assumptions where there is limited claims experience available. The assumptions have been expressed as a percentage of either the relevant Thai industry experience mortality table or of reinsurance rates. No allowance has been made for future mortality improvement.

4.6. MORBIDITY

Similar to mortality, morbidity assumptions have been developed by Thai Life based on the Company's historical morbidity experience where statistically credible, with allowance for current and future trends, and with reference to pricing assumptions where the data available is limited or not statistically credible. The assumptions have either been set as a percentage of reinsurance rates, expressed as a loss ratio applied to the premium earned, in form as an incidence rate as a percentage of sum assured, or a percentage of the standard Thai industry experience table.

4.7. EXPENSES

The expense assumptions have been set by Thai Life based on the latest annual expense study performed by the Company, under which the Company allocates operating expenses into acquisition expenses and maintenance expenses based on the nature of the cost items and cost center, which form the basis of setting the long term unit cost assumptions. Using these expense assumptions results in expense overruns in the short term as the aggregated amount in the Valuation Models is lower than budgeted operating expenses. These projected expense overruns are small in relation to the VIF (THB 425.6 million in 2023, THB 265.0 million in 2024, and THB 41.1 million in 2025) and are expected to be eliminated in 2026 based on Thai Life's business plan forecasts, after excluding one-off expenses. Due to the lack of materiality of these projected expense overruns, the fact that we have been advised that Thai Life will continue to closely monitor actual expenses against budgeted expenses to eliminate expense overruns, and that the Company's business plan budgeted expenses have historically been conservative and resulted in annual expense underruns in practice, no allowance for expense overruns has been made in the VIF.

Assumptions for other sales related expenses for different distribution channels in addition to operating expenses have been set by Thai Life, based on its latest experience study that considers both actual experience and the budgeted position.

4.8. REINSURANCE

The reinsurance assumptions have been developed by Thai Life based on the Company's reinsurance arrangements in-force as at the Valuation Date, with reference to historical experience and the actual terms and conditions of the reinsurance arrangements.

4.9. POLICYHOLDER DIVIDENDS AND CREDITING RATES

The projected policyholder dividends and crediting rate assumptions have been determined by taking into account Thai Life's bonus and crediting rate mechanisms, as well as the investment return assumptions.

4.10. STATUTORY VALUATION BASIS

The EV Results have been based on reserves being projected in line with the prevailing regulatory framework applicable in Thailand as at the Valuation Date. In particular, gross premium valuation ("GPV") reserves have been assumed in the determination of ANW, VIF, and VONB.

4.11. PRODUCT CHARGES

Various product charges reflect those that were applicable as at the Valuation Date.

5 EV RESULTS

5.1. EMBEDDED VALUE

A summary of the EV of Thai Life as at June 30, 2023 and December 31, 2022 is shown in Table 5.1.

Table 5.1: Embedded value as at June 30, 2023 and December 31, 2022 (in THB millions)

	As at June 30, 2023	As at December 31, 2022
ANW (1)	124,328.6	115,341.5
VIF before cost of capital	45,017.1	43,617.3
Cost of capital	(16,356.0)	(13,788.7)
VIF (2)	28,661.1	29,828.6
Embedded value [(1) + (2)]	152,989.7	145,170.1

Figures may not be additive due to rounding.

5.2. RECONCILIATION OF ANW FROM TFRS EQUITY

The ANW has been derived from the TFRS equity as presented in the audited TFRS accounts as at the Valuation Date, and incorporates various adjustments including:

- Difference between TFRS and local statutory (RBC 2 basis) asset and liability items (including mark-to-market adjustments for revaluation of assets to fair value as at the Valuation Date);
- Elimination of intangible assets which are mainly computer software; and
- Recognition of deferred tax impacts of the above adjustments.

Reconciliation of the TFRS equity attributable to shareholders and ANW as at June 30, 2023 and December 31, 2022 is presented in Table 5.2.

Table 5.2: Reconciliation of TFRS equity and ANW (THB millions)

	As at June 30, 2023	As at December 31, 2022
TFRS equity attributable to shareholders (1) *	100,605.6	98,068.2
Difference between TFRS and local statutory (RBC 2 basis) asset and liability items:		
NPV-to-GPV reserve adjustment (2)	9,389.8	14,422.9
Mark-to-market adjustments for revaluation of assets to fair value (3)	15,463.2	3,853.3
Removal of deferred tax assets and deferred tax liabilities (4)	148.5	24.5
Removal of intangible assets (5)	(1,051.5)	(1,165.1)
Recognition of deferred tax impacts of the above adjustments (6)	(226.9)	137.6
ANW [sum of (1) to (6)]	124,328.6	115,341.5

Figures may not be additive due to rounding.

Note *: The starting shareholders' equity has been taken from the Company's financial statement in which the "equity" method is applied. As at June 30, 2023, an adjustment equivalent to negative THB 17.5 million has been made under "revaluation of assets to fair value" (included within item (3)) to reflect the difference in shareholders' equity between the "equity" method and the Company's "separate financial statements" method to align the ANW derivation with the Company's RBC template.

5.3. VALUE OF IN-FORCE BUSINESS

A breakdown of the VIF of Thai Life as at June 30, 2023 and December 31, 2022 is set out in Table 5.3.

Table 5.3: VIF as at June 30, 2023 and December 31, 2022 (THB millions)

Product Group	As at June 30, 2023	As at December 31, 2022
Ordinary life (including whole life, endowment, annuity and term)	20,039.7	18,340.7
Investment linked (including universal life and unit linked)	998.2	853.9
Riders	22,031.8	22,223.9
Others (including standalone personal accident, industrial and group (including credit life))	382.9	528.3
VIF before adjustments and cost of capital	43,452.7	41,946.8
Coupons on deposit adjustment *	1,564.4	1,670.4
VIF before cost of capital	45,017.1	43,617.3
Cost of capital	(16,356.0)	(13,788.7)
VIF	28,661.1	29,828.6

Figures may not be additive due to rounding.

Note *: Policyholders can leave their coupons and dividend payments on deposit with the Company. Thai Life is expected to earn a spread between the investment return and the crediting rate credited to the policyholders' deposit accounts. The value attributable to coupons and dividends on deposit has been calculated as the present value at the risk discount rate of the accumulated interest spread of future coupons on deposit.

5.4. EARNINGS PROFILE

The projected net-of-tax distributable earnings of Thai Life on a discounted and undiscounted basis for the in-force business as at June 30, 2023 and December 31, 2022 are set out in Table 5.4.

The net-of-tax distributable earnings are defined as the distributable profits to shareholders from the assets backing the GPV reserves and the required capital of in-force business as at the Valuation Date. On a discounted basis, the total net-of-tax distributable earnings are equal to the sum of the required capital and the VIF.

Table 5.4: Cash flow profile of net-of-tax distributable earnings for in-force business (in THB millions)

As at June 30, 2023		
Expected period of emergence	Undiscounted	Discounted
1 - 5 years	39,554.1	32,325.4
6 - 10 years	35,523.3	19,914.8
11 - 15 years	27,190.7	10,398.2
16 - 20 years	18,556.1	4,715.5
21 years and thereafter	53,281.6	4,984.7
Total	174,105.8	72,338.6

As at December 31, 2022		
Expected period of emergence	Undiscounted	Discounted
1 - 5 years	38,304.8	31,490.6
6 - 10 years	34,351.4	19,555.5
11 - 15 years	23,913.2	9,381.4
16 - 20 years	14,489.9	3,807.7
21 years and thereafter	40,273.0	3,907.5
Total	151,332.2	68,142.7

Figures may not be additive due to rounding.

5.5. VALUE OF NEW BUSINESS

The VONB and VONB margin covering new business written in the 6-month period ended June 30, 2023 and the 6-month period ended June 30, 2022 respectively is set out in Table 5.5, with a breakdown of VONB by product group shown in Table 5.6.

Table 5.5: VONB and VONB margin by calendar year (in THB millions)

	6-month period ended June 30, 2023	6-month period ended June 30, 2022
VONB before adjustment and cost of capital	3,563.5	3,476.3
Coupons on deposit adjustment *	80.2	73.1
VONB before cost of capital	3,643.7	3,549.4
Cost of capital	(354.7)	(248.2)
VONB (1)	3,289.0	3,301.2
APE (2)	5,712.9	6,413.7
VONB Margin [(1) / (2)]	57.6%	51.5%

Figures may not be additive due to rounding.

APE = the sum of 100% of annualized first year premium and 10% of single premium.

Note *: Policyholders can leave their coupons and dividend payments on deposit with the Company. Thai Life is expected to earn a spread between the investment return and the crediting rate credited to the policyholders' deposit accounts. The value attributable to coupons and dividends on deposit has been calculated as the present value at the risk discount rate of the accumulated interest spread of future coupons on deposit.

Table 5.6: Breakdown by product group of VONB (in THB millions)

Product group	6-month period ended June 30, 2023			6-month period ended June 30, 2022		
	VONB	APE	VONB Margin	VONB	APE	VONB Margin
Ordinary life – traditional (including whole life, endowment, annuity and term, and excluding new participating products)	1,499.4	2,732.5	54.9%	1,652.1	4,013.8	41.2%
Ordinary life – new participating products	360.7	1,159.2	31.1%	214.1	748.3	28.6%
Investment linked (including universal life and unit linked)	58.4	167.3	34.9%	69.1	209.6	33.0%
Riders	928.9	896.0	103.7%	969.2	815.2	118.9%
Others (including standalone personal accident, industrial and group (including credit life))	441.6	757.9	58.3%	396.7	626.8	63.3%
Total	3,289.0	5,712.9	57.6%	3,301.2	6,413.7	51.5%

Figures may not be additive due to rounding.

Thai Life's VONB margin increased from 51.5% for the first half of 2022 to 57.6% for the first half of 2023, mainly due to the shift of product mix, especially for the partnership channel.

5.6. ANALYSIS OF EV MOVEMENT

A breakdown of the EV movement over the period December 31, 2022 to June 30, 2023 is set out in Table 5.7.

Table 5.7: Analysis of EV movement (in THB millions)

	For the 6-month period ended June 30, 2023		
	ANW	VIF	EV
Opening EV as at December 31, 2022 (1)	115,341.5	29,828.6	145,170.1
Opening adjustment (2)	(11.7)	186.4	174.7
VONB (3)	-	3,289.0	3,289.0
Expected return on EV (4)	7,101.1	(3,136.5)	3,964.5
Operating variance (5)	(305.4)	4.2	(301.2)
Operating assumption change (6)	-	-	-
Economic variance (7)	5,099.2	(3,111.7)	1,987.5
Economic assumption change (8)	(60.6)	1,628.5	1,567.9
Non-operating variance (9)	599.4	(27.2)	572.2
Capital movements (10)	(3,434.9)	-	(3,434.9)
Closing EV as at June 30, 2023 [= sum of (1) to (10)]	124,328.6	28,661.1	152,989.7

Figures may not be additive due to rounding.

The EV of Thai Life increased by THB 7,819.6 million in the first half of 2023, from THB 145,170.1 million as at December 31, 2022 to THB 152,989.7 million as at June 30, 2023 (equivalent to a 5.4% increase from the opening EV).

Key contributors to the increase in EV during the year were the expected return on EV of THB 3,964.5 million (reflecting the expected return on ANW and the unwinding of profit based on the risk discount rate; this item also includes a transfer of profit from VIF to ANW, which has a negative impact on VIF and a corresponding positive impact on ANW and hence no impact on EV), the value of new business written during the first half of THB 3,289.0 million, positive economic variance of THB 1,987.5 million (reflecting the net impact on assets and liabilities following the flattening of the Thai government bond yield curve during the period), and a positive impact from economic assumption change of THB 1,567.9 million to reflect the Company's change in view of future economic conditions. During the first half of 2023, there was a positive non-operating variance of THB 572.2 million reflecting a refinement in modelling of the reserves for non-guaranteed maturity bonus of certain products to better align with the actual practice of the Company, plus a positive opening adjustment of THB 174.7 million reflecting model enhancements.

Offsetting the above positive impacts on EV, the main negative impact was the capital movement of negative THB 3,434.9 million, reflecting the dividends paid to the Company's shareholders in the first half of 2023. Operating variance reduced the EV by THB 301.2 million. There were no operating assumption changes in the first half of 2023.

5.7. SENSITIVITY ANALYSIS

Sensitivity tests have been performed on Thai Life's EV and VONB in respect of changes to key assumptions.

For each of the following tests, only the specified parameter has been changed with all other assumptions remaining unchanged:

- 1.0% increase in risk discount rate
- 1.0% decrease in risk discount rate
- 0.5% per annum increase in interest rates
- 0.5% per annum decrease in interest rates
- 10% increase in rates of policy discontinuance, premium discontinuance and partial withdrawal (i.e. 110% of the rates under the base case)
- 10% decrease in rates of policy discontinuance, premium discontinuance and partial withdrawal (i.e. 90% of the rates under the base case)
- 10% increase in rates of mortality and morbidity and loss ratios (i.e. 110% of the rates and loss ratios under the base case)
- 10% decrease in rates of mortality and morbidity and loss ratios (i.e. 90% of the rates and loss ratios under the base case)
- 10% increase in acquisition and maintenance expenses (i.e. 110% of the acquisition and maintenance expenses under the base case)
- 10% decrease in acquisition and maintenance expenses (i.e. 90% of the acquisition and maintenance expenses under the base case)

In addition, the following sensitivity tests have also been performed on the EV only:

- 10% increase in equity prices (i.e. 110% of equity prices as at the Valuation Date)
- 10% decrease in equity prices (i.e. 90% of equity prices as at the Valuation Date)

For each sensitivity test above, the underlying GPV reserves have been changed accordingly, while the provision for adverse deviation ("PAD") scenarios for GPV reserves remain unchanged from the base case under all sensitivities.

Under the interest rate sensitivities, the market value of debt securities and policy loans, discount rates for GPV reserves, net investment returns, bonus/dividend scales for participating business, crediting rates for universal life business, and unit fund growth rates for unit linked business have been shocked. In particular, the current spot yield as at the Valuation Date has been changed by +/- 0.5% per annum respectively within the yield curve used to discount cash flows in the determination of GPV reserves.

The expense sensitivities only reflect changes to VIF and VONB in relation to the change in unit cost expense assumptions.

For the equity prices sensitivities, no adjustments have been made to the bonus/dividend scales for participating business, crediting rates for universal life business and unit fund growth rates for unit linked business as the equity mix assumed in the strategic asset allocations of the asset portfolios backing this business, and hence the second order impact to these parameters, are not considered to be material. Both equities and unit trusts reported under the Company's RBC template have been stressed.

The EV sensitivity results as at June 30, 2023 and December 31, 2022 are set out in Table 5.8, and the VONB sensitivity results for new business written in the 6-month period ended June 30, 2023 and the 6-month period ended June 30, 2022 are shown in Table 5.9.

Table 5.8: Impact of sensitivities on EV (in THB millions)

	As at June 30, 2023		As at December 31, 2022	
EV -- Base case	152,989.7		145,170.1	
Impact of:	Absolute change from base case EV	% change from base case EV	Absolute change from base case EV	% change from base case EV
Increase risk discount rate by 1.0%	(4,899.4)	(3.2%)	(4,381.3)	(3.0%)
Reduce risk discount rate by 1.0%	5,657.5	3.7%	5,027.0	3.5%
Increase interest rates by 0.5% p.a.	(794.5)	(0.5%)	1,804.3	1.2%
Reduce interest rates by 0.5% p.a.	3,375.7	2.2%	(925.8)	(0.6%)
Increase discontinuance and partial withdrawal rates by 10%	(1,372.3)	(0.9%)	(1,644.2)	(1.1%)
Reduce discontinuance and partial withdrawal rates by 10%	1,446.2	0.9%	1,705.7	1.2%
Increase mortality and morbidity rates and loss ratios by 10%	(6,109.7)	(4.0%)	(6,035.9)	(4.2%)
Reduce mortality and morbidity rates and loss ratios by 10%	6,261.9	4.1%	6,139.0	4.2%
Increase acquisition and maintenance expenses by 10%	(1,724.7)	(1.1%)	(1,754.6)	(1.2%)
Reduce acquisition and maintenance expenses by 10%	1,724.7	1.1%	1,705.6	1.2%
Increase equity prices by 10%	6,148.6	4.0%	5,933.7	4.1%
Decrease equity prices by 10%	(6,172.2)	(4.0%)	(6,005.9)	(4.1%)

Figures may not be additive due to rounding.

Table 5.9: Impact of sensitivities on VONB (in THB millions)

	For the 6-month period ended June 30, 2023		For the 6-month period ended June 30, 2022	
VONB — Base case	3,289.0		3,301.2	
Impact of:	Absolute change from base case	% change from base case	Absolute change from base case	% change from base case
Increase risk discount rate by 1.0%	(167.5)	(5.1%)	(169.1)	(5.1%)
Reduce risk discount rate by 1.0%	200.4	6.1%	197.3	6.0%
Increase interest rates by 0.5% p.a.	495.3	15.1%	547.1	16.6%
Reduce interest rates by 0.5% p.a.	(486.8)	(14.8%)	(618.5)	(18.7%)
Increase discontinuance and partial withdrawal rates by 10%	(214.7)	(6.5%)	(192.8)	(5.8%)
Reduce discontinuance and partial withdrawal rates by 10%	232.8	7.1%	209.4	6.3%
Increase mortality and morbidity rates and loss ratios by 10%	(488.6)	(14.9%)	(432.1)	(13.1%)
Reduce mortality and morbidity rates and loss ratios by 10%	497.6	15.1%	439.4	13.3%
Increase acquisition and maintenance expenses by 10%	(170.5)	(5.2%)	(172.1)	(5.2%)
Reduce acquisition and maintenance expenses by 10%	170.5	5.2%	172.1	5.2%

Figures may not be additive due to rounding.

6 MILLIMAN REVIEW

This section describes a summary of our review in respect of the methodology, assumptions and EV Results.

6.1. REVIEW OF METHODOLOGY

The EV Results have been prepared by Thai Life using TEV methodology in accordance with the generally accepted actuarial principles used for TEV reporting. We have reviewed whether the results have been determined, in all material respects, in a consistent manner with the Company's TEV methodology. In forming this view, we have checked the consolidated aggregate results spreadsheet prepared by Thai Life and conducted sample model point checks on products making up over 90% of in-force business (measured by in-force NPV reserves) and new business (measured by APE).

6.2. REVIEW OF ASSUMPTIONS

The assumptions used to determine the EV Results have been developed by Thai Life based on its operating experience where statistically credible, reference to pricing assumptions, anticipated future trends, investment strategies, the economic outlook and current regulatory frameworks.

We have reviewed the appropriateness of the non-economic assumptions adopted, having regard to the underlying experience investigations performed by Thai Life, expected future experience and materiality of the impact of assumptions on the overall results.

We have reviewed the appropriateness of the economic assumptions, having regard to the current asset holdings, the investment policy of the Company and its strategic asset allocation, industry benchmarks and economic conditions as at the Valuation Date.

Overall, we note that the assumptions adopted have been set in accordance with generally accepted actuarial principles. However, we highlight that actual future experience may differ from that assumed in the projections. In particular, due to the lack of statistically credible experience, the pricing assumptions used may differ materially from the actual operating experience that emerges over time. The sensitivity of results to certain changes in assumptions is provided in Section 5.7.

6.3. REVIEW OF RESULTS

The EV Results have been prepared by Thai Life using its in-house Valuation Models. We have reviewed certain elements of the Valuation Models. In particular, we have carried out sample policy checks on the projected cash flows produced by the Valuation Models for products representing over 90% of the in-force business (measured by in-force NPV reserves) and new business (measured by APE). The sample policy checks were performed to independently validate that the Valuation Models appropriately capture the features of these products and that the Valuation Models have been set up in accordance with the agreed methodology and assumptions.

We have also performed the following checks on the aggregate results:

- Static validation of the opening liabilities projected from Valuation Models to accounting data.
- Static validation of the new business model point file against APE presented in new business sales summaries.
- Validating the ANW to accounting data including a reconciliation performed against the opening TFRS equity presented in the audited TFRS financial statements.

- High level checks to confirm the implied lapses, loss ratios, investment returns implied from cash flows were in line with assumptions.
- Reconciliation of final VIF and VONB results by discounting the VIF and VONB cash flows at the risk discount rate assumed.
- Validation of out-of-model adjustments.
- Review of VIF and VONB sensitivity results in respect of changes to assumptions.

Any material errors revealed by our checks were corrected in the Valuation Models. Our model review process has been to highlight to the Thai Life where the present value of cash flows for sample model points exceeded our 1% tolerance level (a tolerance level in line with industry standard), and to discuss with the Thai Life whether a change to the Valuation Models was required.

6.4. OPINION

Based on our review of the methodology and assumptions used by Thai Life to calculate the EV Results, Milliman concludes that:

- The methodology used to determine the EV Results is in line with generally accepted actuarial principles used for TEV reporting.
- The operating assumptions used to calculate the EV Results have been developed using the operating experience of the Company, with allowance for expected future trends where applicable, or have been set with reference to pricing assumptions where the experience is not statistically credible.
- The economic assumptions used to develop the EV Results have been determined having regard to Thai Life's current asset holdings, the investment policy of the Company and its strategic asset allocation, industry benchmarks and economic conditions as at the Valuation Date, and are broadly consistent with economic assumptions adopted by insurers in Asia that report on a TEV basis.
- The EV Results have been prepared in all material respects in accordance with the methodology and assumptions described in this Report. This has been validated through the sample model point checks performed for products making up over 90% of in-force business (measured by in-force NPV reserves) and new business (measured by APE).

This opinion is subject to the reliances and limitations set out below.

7 RELIANCES AND LIMITATIONS

7.1. RELIANCES

In carrying out our work and producing this Report we have relied on information supplied by Thai Life. Reliance was placed on, but not limited to, the accuracy of the information provided to us. References to unaudited but reviewed financial statements at June 30, 2023 in the Report are based on TFRS accounts reviewed by Thai Life's auditors for the purpose of TFRS reporting and take no account of any subsequent changes to this version of the accounts.

Except as specifically stated in this Report, we have performed no audits or independent verification of the information furnished to us. To the extent that there are any material errors in the information provided, the results of our analysis will be affected as well, possibly materially. The principal materials provided by Thai Life and relied upon by us are listed in Appendix B to this Report.

Thai Life has confirmed to us that the data and information it has provided to us is accurate and complete.

7.2. LIMITATIONS

This Report is intended to provide certain actuarial information and analyses that would assist a professional, technically competent in the area of actuarial appraisals, to develop an estimate of the components of economic value of Thai Life. This Report must be read in its entirety to be fully understood. We assume that recipients of this Report will seek explanation and/or amplification of any part of this Report which is not clear.

The actuarial valuation of Thai Life has been developed on a going concern basis and assumes a continuation of the current, economic, political and social environment in Thailand. It therefore inherently assumes that the environment will remain stable. The user of this Report should be aware that any political, economic or social instability in Thailand would add a degree of uncertainty to the results presented. In particular, the EV Results have been based on long term unit cost loadings determined in accordance with Thai Life's business plan forecasts. There is uncertainty regarding the impact of COVID-19 and geopolitical factors on the economic, legal, and regulatory environment, and the level and nature of business activity, which could impact business plan forecasts and the EV Results.

In determining the EV Results of Thai Life, assumptions have been made about future experience, including economic and investment experience, mortality, morbidity, persistency, expenses and taxes. Actual experience may differ from that assumed in the projections. To the extent actual experience is different from the assumptions underlying this Report, actual results will also differ from the projected results shown. The sensitivity of results to certain changes in assumptions is provided in Section 5.7 of this Report.

The expense assumptions have been chosen on the basis that Thai Life would continue to operate on a going concern basis. They do not take into account any future changes to product strategy, sales volumes or other matters that may have a consequential impact on product specific expense loadings. They also do not take into account any strategic spending or any matters that could lead to an increase in such spending beyond what has been planned and set aside in the VIF. The assumptions have also been set with reference to the Company's latest business plan available when the expense study was performed. We have relied on the business plan provided to us and have not reviewed the assumptions underlying them.

Rider lapse assumptions have been introduced in 2022 and have been set based on the analysis of the 2021 rider lapse experience for the two largest product groups of basic plans that account for around 97% of the total premium exposure. In setting this assumption, the future expected trend based on the Company's judgment and future management actions to better control rider lapse experience has been taken into account. We recommend the Company closely monitors its rider lapse rate experience, and in particular the effectiveness of management actions to improve rider persistency, and looks to revise rider lapse rate assumptions accordingly if experience warrants it.

The Company has projected small expenses overruns from 2023 to 2025. Due to the lack of materiality of these projected expense overruns, the fact that we have been advised that Thai Life will continue to closely monitor actual expenses against budgeted expenses to eliminate expense overruns, and that the Company's business plan budgeted expenses have historically been conservative and resulted in annual expense underruns in practice, no allowance for expense overruns has been made in the VIF. Should actual expenses be higher than planned or expenses loadings be lower than planned, the expense overruns will increase and may become more material and therefore can negatively impact the values shown in this Report.

The risk discount rates used to determine the EV Results shown in this Report have been selected by Thai Life. The underlying risk margin within the risk discount rates is intended to represent the level of additional return an investor might consider appropriate to reflect the underlying risk of the business. Different investors may have different views of the appropriate range of risk discount rates to use to value an insurance enterprise.

We have not attempted to assess the suitability or quality of the assets held by Thai Life or its reinsurance strategy. We have not reviewed, and make no judgment or representation on, Thai Life's strategic asset allocation. We have also not assessed, or made allowance for, any claims against Thai Life other than those made by policyholders under the normal terms of life insurance business. In particular, no account has been taken of liabilities in respect of pension entitlements, stock option plans, service contracts, leases and breaches of regulations.

No investigation has been made into the accuracy of the unit pricing and unit allocation procedures adopted by Thai Life.

The results have been prepared by Thai Life using the Company's Valuation Models. Although we have performed extensive checks on the Valuation Models and underlying results as described in Section 6.3 of this Report, our checks were not exhaustive, and hence may not have uncovered all potential issues.

Reserves, cost of capital and tax have been calculated using the prevailing regulatory and tax frameworks applicable as at the Valuation Date, and do not take into account any future changes in these frameworks. We have also relied on the opinion of Thai Life's Chief Actuary and auditors that the reserves and capital requirements held as at the Valuation Date comply with the prevailing regulations.

The EV Results set out in this Report do not include any allowance for withholding or other taxes that may apply to the payment of shareholder dividends on remittances out of Thailand.

The EV Results allow for adjustments to policyholder dividends and crediting rate assumptions taking into account Thai Life's bonus and crediting rate mechanisms, as well as the investment return assumptions. We have relied on Thai Life's application of these rules within the Valuation Models, and note that the impact on the results if the rules incorporated in the Valuation Models are not followed in actual practice can be material.



Yours faithfully
for Milliman Limited

Michael Daly

Michael Daly FIA
Principal & Consulting Actuary

C. Bonnet.

Clement Bonnet IA
Principal & Consulting Actuary



Appendix A: ABBREVIATIONS

ANW:	Adjusted Net Worth
APE:	Annualized Premium Equivalent
CAR:	Capital Adequacy Ratio
CB Life:	CB Life Insurance Company Limited
EV:	Embedded Value
GPV:	Gross Premium Valuation
NPV:	Net Premium Valuation
OIC:	Office of Insurance Commission
PAD:	Provision for Adverse Deviation
RBC:	Risk-based Capital
TFRS:	Thai Financial Reporting Standards
TEV:	Traditional Embedded Value
THB:	Thai Baht
VIF:	Value of In-force Business after cost of capital
VONB:	Value of New Business after cost of capital

Appendix B: KEY INFORMATION RECEIVED

- Local accounting financial statements of Thai Life as at December 31, 2022 (audited) and June 30, 2023 (unaudited but reviewed);
- Risk-based capital regulatory filings as at December 31, 2022 (audited) and June 30, 2023 (unaudited but reviewed);
- Breakdown of statutory reserves by product as at December 31, 2022 and June 30, 2023;
- New business summary by product for new business in the 6-month period ended June 30, 2022 and June 30, 2023;
- EV Results as at the respective Valuation Dates including sensitivity results, analysis of EV movement;
- Summary of quarterly VONB results and APE for new business covered written in the 6-month period ended June 30, 2022 and June 30, 2023;
- Consolidated EV Results, including any off-model adjustments;
- Thai Life's in-house actuarial model, namely the Valuation Models, used to prepare the EV Results;
- Individual in-force policy database as at the Valuation Date;
- Product descriptions for key in-force and new business products reviewed;
- Reserving basis for key in-force and new business products reviewed;
- Justification of parameters used to project asset risk charges for new business;
- Information and analysis prepared by the Company in respect of recent operating experience for mortality, morbidity, loss ratios, persistency, commission overrides, reinsurance, expenses (including overruns/underruns), coupons on deposit and investment returns; and
- Other information and clarifications obtained through various email and telecommunication during the period of our assignment.