

Confidential



**Shin Kong Financial Holding**

Review of Embedded Value and Value of  
2013 New Business

May 2014

# Disclaimer

Certain of the statements contained herein are statements of future expectations and other forward-looking statements. These expectations are based on Shin Kong Life's views and assumptions and involve known and unknown risks and uncertainties. Actual results, performance or events may differ materially from those in such statements due to, among other things, (i) general economic conditions, (ii) performance of financial markets, (iii) the frequency and severity of insured loss events, (iv) mortality and morbidity levels and trends, (v) persistency levels, (vi) interest rate levels, (vii) currency exchange rates, (viii) general competitive factors, (ix) changes in laws and regulations, (x) changes in the policies of the government and/or regulatory authorities. Shin Kong Life assumes no obligation to update any forward-looking information contained in this document.

# Independent Review by Deloitte

## Project description

- Shin Kong Life performs, on a yearly basis, an embedded value (EV), value of one year's new business (V1NB), and appraisal value (AV) calculation as an important effort to provide investors and analysts information and insights on the company's operations.
- Deloitte Actuarial is retained to perform an independent review of the assumptions excluding the AV calculation, and to issue an opinion on the reasonableness of the assumptions used.

## Scope of Deloitte's involvement

- Scope of project is to review the assumptions used in the valuation of the EV (at 31/12/2013) and V1NB (value of all business sold in the period 1/1/2013-31/12/2013).
- Provide a written opinion on the reasonableness of the assumptions, taking into consideration both Shin Kong Life's recent experience and Deloitte's knowledge of the Taiwanese life insurance market.
- The review covers portfolio and economic assumptions. It does not cover new business volume assumptions.

## Key roles

- Valuation is done by Shin Kong Life.
- Deloitte Actuarial provides an independent review of the assumptions used in the EV and V1NB.

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## I. What are Appraisal and Embedded Values

II. EV and AV Results

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# Appraisal and Embedded Values

**An embedded value (EV) is the sum of**

- The net worth; and
- The value of in force business (VIF).

**An appraisal value (AV) is the sum of**

- The embedded value; and
- The value of future new business (VNB).

**The VNB is normally the product of**

- The value of one year's new business (V1NB) ; and
- A new business "multiplier".

- **Net worth**

This is the value of shareholder equity, or assets in excess of policy liabilities.

- **Value of in force**

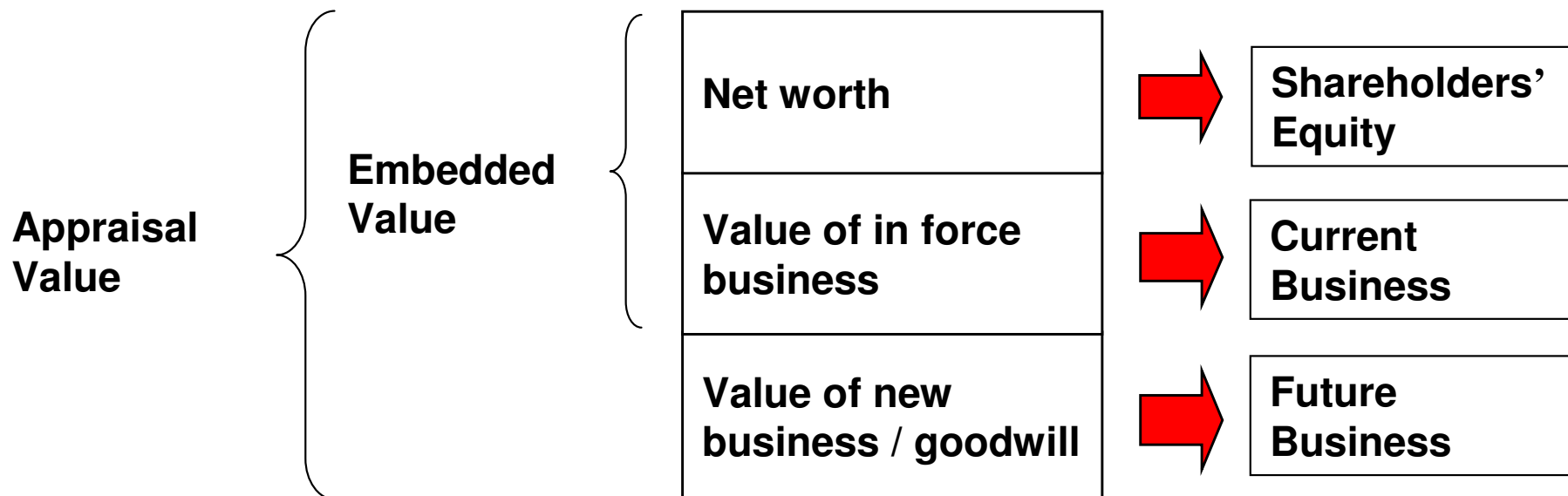
This is the value of profits distributable to shareholders, allowing for the need to comply with RBC. This calculation requires (i) an actuarial projection model, (ii) valuation assumptions (e.g. future investment return), and (iii) data relating to the company's policies.

- **Value of one year's new business**

The approach is similar to that for the value of in force. The actual policies sold in the previous 12 months are normally used.

- **New business multiplier**

This subjective component requires a view to be taken on the company's future new business volumes and profitability.



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# EV and AV Results

Unit: NT\$bn	31 Dec. 2012	31 Dec. 2013
Adjusted NAV	158.8	163.5
VIF	75.4	102.1
COC	39.7	51.3
<b>EV</b>	194.4	214.3
<b>V1NB</b>	14.0	14.6
AV (5 years NB)	246.4	268.2
AV (20 years NB)	322.9	345.4

# Adjusted Net Worth

Unit: NT\$bn	31 Dec. 2012	31 Dec. 2013
Statutory Net Worth	51.0	64.9
Unrealized Gains on Property	102.0	63.4
Special Reserve of Unrealized Gains on Property	0.0	28.2
Others <sup>(1)</sup>	5.7	7.0
<b>Adjusted NAV</b>	<b>158.8</b>	<b>163.5</b>

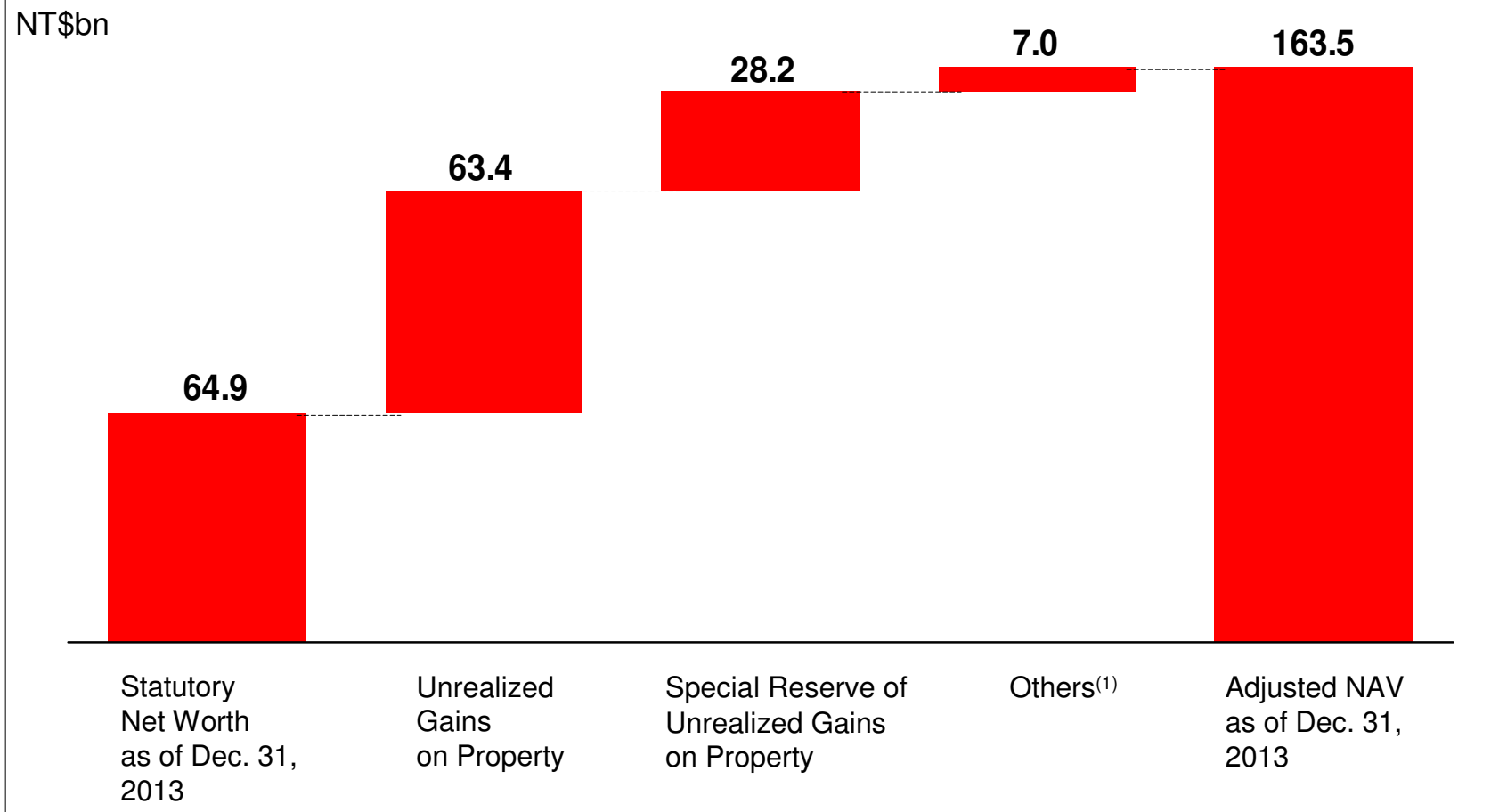
Note:

(1) Included foreign exchange volatility reserve and other items.



# Adjusted NAV

## Adjustments to Statutory Net Worth at 31 Dec. 2013



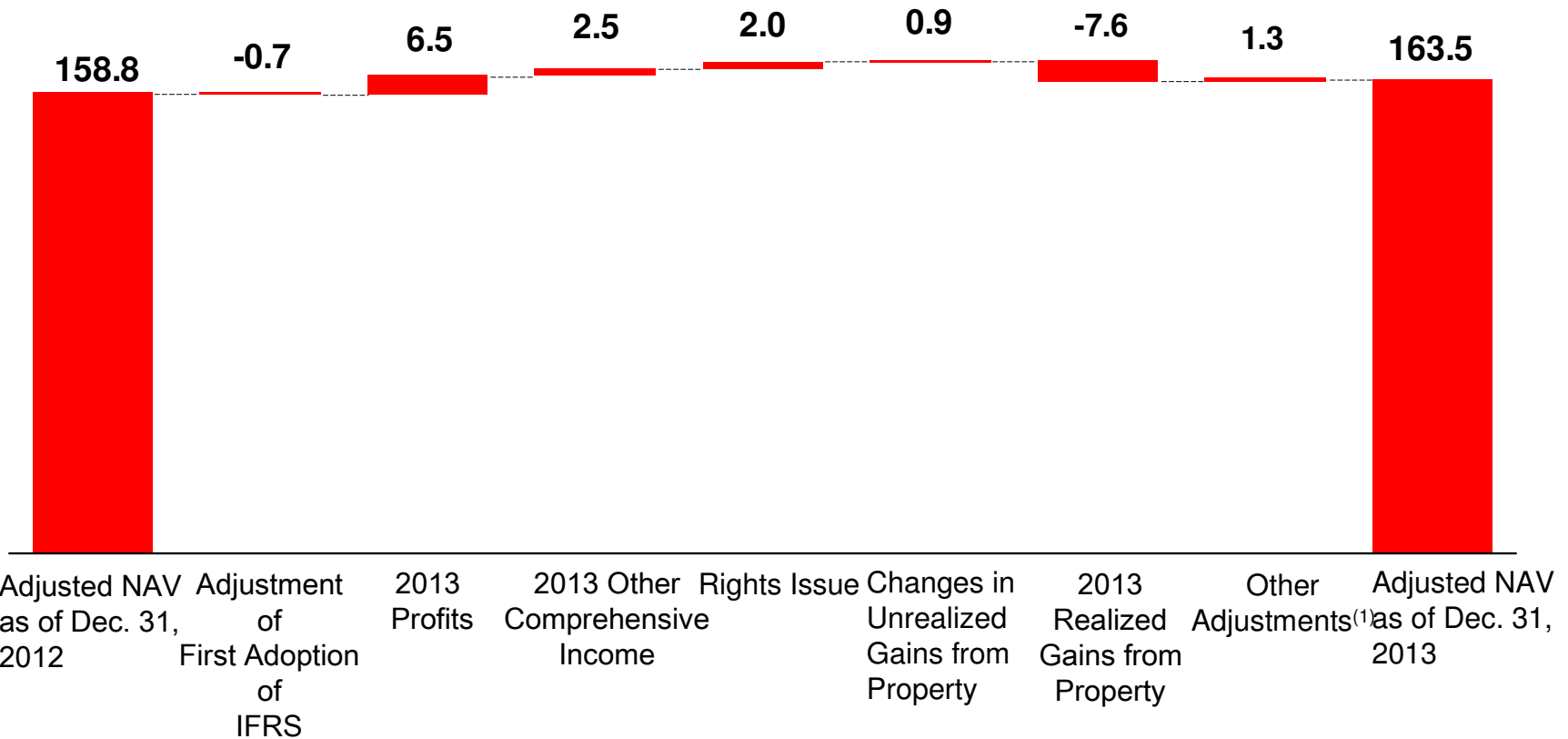
Note:

- (1) Included foreign exchange volatility reserve and other items.
- (2) Figures may not add up exactly due to rounding.

# Analysis of Change in NAV

**Changes between 31 Dec. 2012 and 31 Dec. 2013  
broken down by components**

NT\$bn

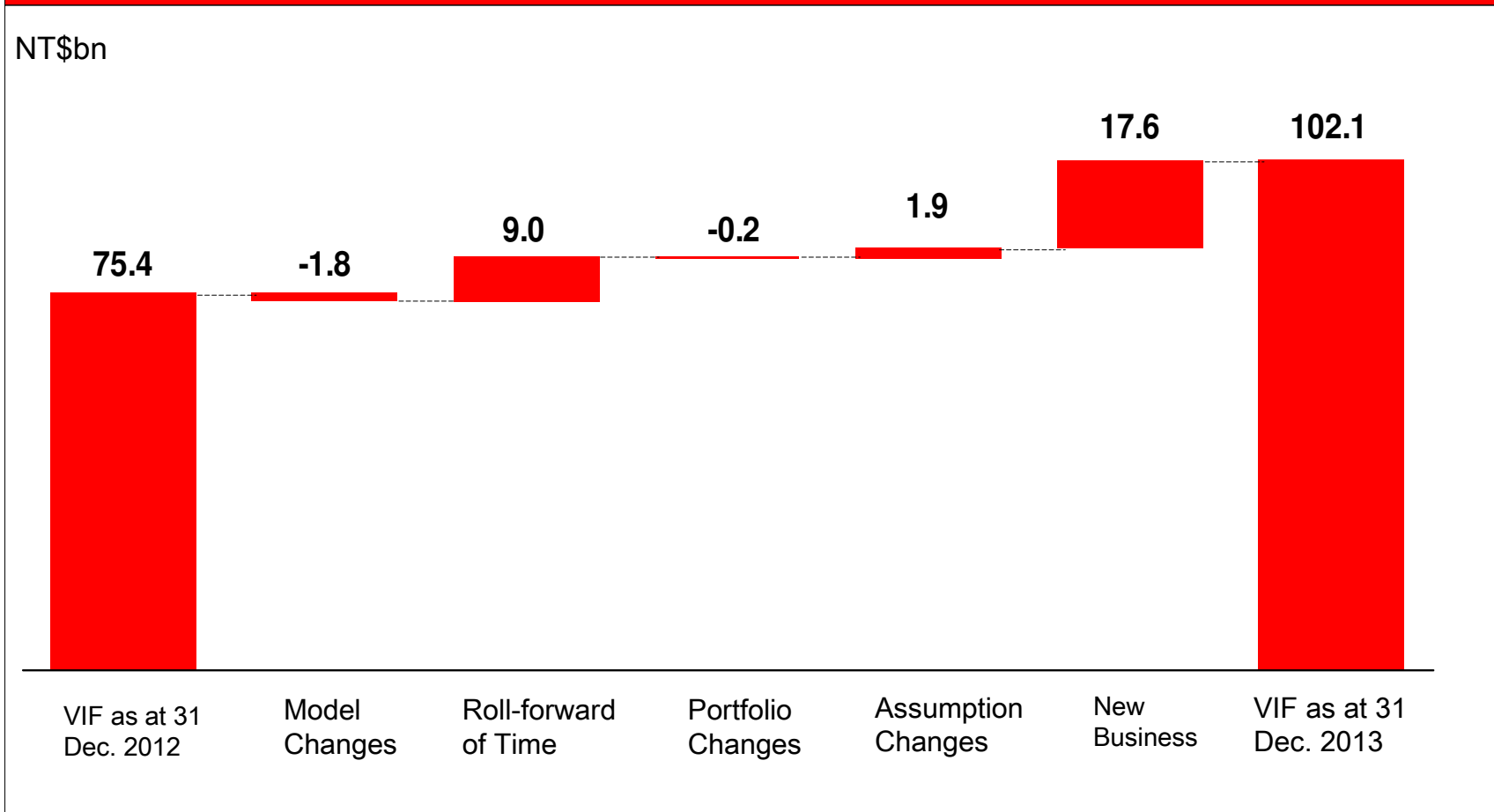


Note:

- (1) Included changes in foreign exchange volatility reserve, and other items.
- (2) Figures may not add up exactly due to rounding.

# Analysis of Change in VIF

## Changes between 31 Dec. 2012 and 31 Dec. 2013 broken down by components



Note: Figures may not add up exactly due to rounding.

# Analysis of Change in VIF

Unit: NT\$bn	Description	VIF before CoC
<b>As of 31 Dec. 2012</b>		<b>75.4</b>
Model Changes	Refinements and/or corrections made to the cash flow projection model since last valuation date	-1.8
Roll-Forward of Time	Impact to EV as of 31 December 2013 due to elapse of time from December 2012 (business is one year older)	9.0
Portfolio Changes	Differences in the projected policies in force as at 31 December 2012 and the actual policies in force as at valuation date	-0.2
Assumption Changes	Differences in valuation assumptions used in last valuation and this valuation	1.9
New Business	Refers to the value added as at 31 December 2013 by policies sold between 1 January and 31 December 2013, as they now form part of the in force block	17.6
<b>As of 31 Dec. 2013</b>		<b>102.1</b>

Note: Figures may not add up exactly due to rounding.

# Treatment of Cost of Capital (CoC)

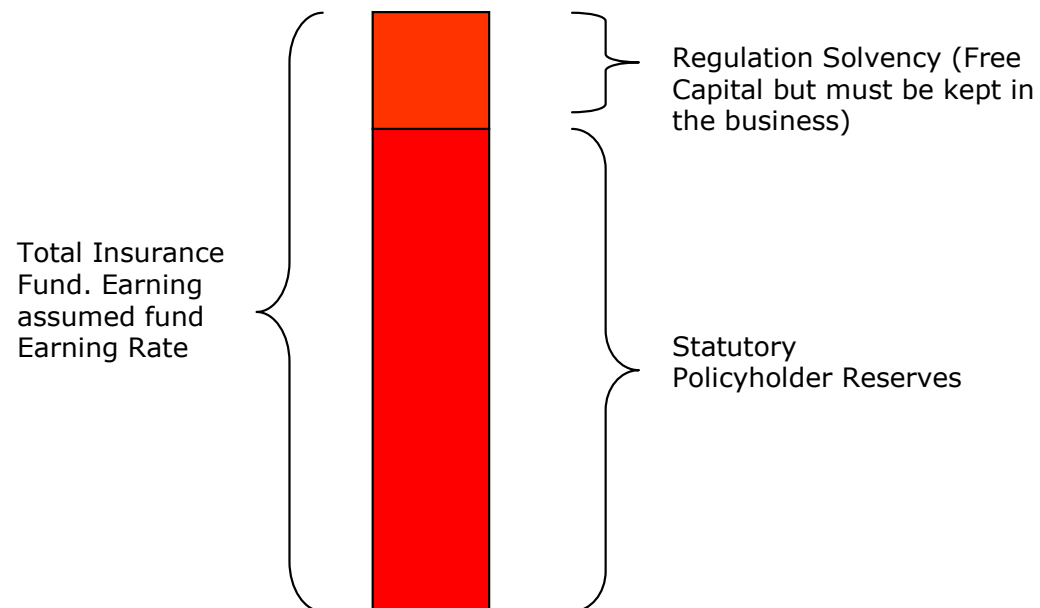
CoC refers to the opportunity cost of needing to hold an additional solvency margin above the statutory reserves to meet local regulations.

This margin must be held whilst any policies are in force, both now and in the future.

The opportunity cost arises since the capital covering this margin is expected to earn the assumed long term earning rate (ER) of the business and cannot earn the return on shareholders require (which would be equal to the Risk Discount Rate (RDR) to justify holding of the assets in the business).

There exists a gap between the rate of return expected by the shareholders and the actual rate of return that can be achieved. This is determined to be a “cost” of doing business in this market and should be reflected in the value of the business.

This is a standard calculation, in line with internationally accepted practice for EV reporting.



Solvency Margin for this Valuation is assumed to be 200% of the RBC

The EV is reduced by the cost of holding this capital in the business. The cost is estimated as the difference between the ER and the RDR on the assumption that the capital could earn the RDR if it were not held in the business

This valuation is on the basis of holding the minimum solvency and does not estimate an EV on the basis of “economic capital”.

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# Estimate of Embedded/ Appraisal Value

Unit: NT\$bn  Valuation Date: 31 Dec. 2013  Solvency Basis: 200% RBC  K=0.5			Base Case Scenario		
	All else equal except		<b>VIF</b> 4.21% ~ 5.10% (USD 4.81%~6.09%) <b>V1NB</b> 4.29% ~ 5.10% (USD 5.14%~6.09%) <b>IS Product</b> 2.95% ~ 5.23% <b>RDR 10.5%</b>	All else equal except	
	Inv Return - 0.25%	Inv Return + 0.25%		RDR - 1.0%	RDR + 1.0%
Adjusted NAV	163.5	163.5	163.5	163.5	163.5
VIF	65.7	135.6	102.1	115.9	90.9
Cost of Capital (COC)	53.1	49.6	51.3	47.8	54.2
<b>EV after COC</b>	<b>176.1</b>	<b>249.6</b>	<b>214.3</b>	<b>231.7</b>	<b>200.3</b>
<b>V1NB after COC</b>	<b>13.5</b>	<b>15.7</b>	<b>14.6</b>	<b>16.6</b>	<b>12.9</b>
AV (5 years NB)	225.9	307.7	268.2	295.0	246.5
AV (20 years NB)	296.9	391.0	345.4	393.7	307.4

Note: Figures may not add up exactly due to rounding.

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# Assumptions

Assumptions	Value	Changes from last valuation
Investment yield for VIF	TWD products : 4.21% ~ 5.10% USD products : 4.81%~6.09% IS products : 2.95% ~ 5.23%	(see subsequent slide)
Investment yield for V1NB	TWD products : 4.29%~5.10% USD products : 5.14%~6.09% IS products : 2.95% ~ 5.23%	(see subsequent slide)
Risk free rate	Taiwan: from 1.68% in Year 0 to 3.73% in Year 10 US: from 3.03% in Year 0 to 4.60% in Year 10	Taiwan Year 0: increased from 1.17% to 1.68% Taiwan Year 10: increased from 3.45% to 3.73% US Year 0: increased from 1.76% to 3.03% US Year 10: lowered from 4.69% to 4.60% (based on Global Insight forecasts)
Risk discount rate	10.5%	No change
Compulsory Par reference interest rate	1.41% ~ 3.63%	Made a slight adjustment to reflect economic scenario
Crediting rate for interest sensitive products	100 bps spread	No change
Taxation	Current tax rates	No change
Inflation rate	1.7%	Lowered from 2.0% to 1.7%

# Assumptions

Assumptions	Changes from last valuation
Mortality assumption	Slightly lower – to reflect emerging experience
Morbidity assumption	No change – to reflect emerging experience
Lapse assumption (Traditional products)	Slightly lower– to reflect emerging experience
Lapse Assumption (Unit linked/Interest sensitive products)	Slightly lower for interest sensitive products– to reflect emerging experience
Expense and override assumption	Slightly higher – to reflect emerging experience
Premium persistency (Unit Linked products)	Slightly lower – to reflect emerging experience

# Risk Discount Rate

The Risk Discount Rate (RDR) was derived using CAPM and set at 10.5%

	<b>31 Dec. 2013</b>
Risk Free Rate	3.37%
Equity plus Country Risk Premium	6.00%
Beta	1.20
<b>Risk Discount Rate used in the valuation</b>	<b>10.5%</b>

- In setting the Risk Free Rate, assumptions have been set to reflect the long term nature of the liabilities and the expected levels of the Taiwan bond yields in the future
- The risk discount rate used this year is the same as last year.
- The Risk Free Rate (defined as the yield on Taiwan 10-year government bonds) and Equity plus Country Risk Premium were sourced from industry-wide information, and a survey of Global Insight for their long-term views.

### **Earning Rate**

Earning rate goes from 4.21% to 5.10% for TWD VIF products and 4.29% to 5.10% for TWD V1NB products. And from 4.81% to 6.09% for USD VIF products and 5.14% to 6.09% for USD V1NB products. For Interest-Sensitive products, 2.95% to 5.23%

Shin Kong Life's method for deriving the investment earning rate uses a market or book yield approach for each asset class depending on how they are reported in the balance sheet, applies a single expected future yield to the values of both the in force and new business portfolios, and is based on the view that current bond yields are unusually low. A "rising earning path" was determined by assuming a future risk free rate based on Global Insight forecasts for a 10-year time horizon.

Shin Kong Life uses an Asset Liability Model to estimate the future new cash flows in/out of the company and reinvestment of maturing assets for the next 30 years and applies the estimated future new money yield in the relevant year by holding the asset mix constant. Investment expenses and hedging costs are allowed for in the calculations. Margins to the risk free rates are determined for the various asset classes, based on current market levels.

The resulting "earning path" goes from 4.21% to 5.10% for TWD VIF products and 4.29% to 5.10% for TWD V1NB products. And from 4.81% to 6.09% for USD VIF products and 5.14% to 6.09% for USD V1NB products. For Interest-Sensitive products, 2.95% to 5.23%