

## Cathay Life 2017 Embedded value & Appraisal value

June 27, 2018

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#### **Embedded Value & Appraisal Value**

NT\$BN, except for per share figures

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Valuation date	2016/12/31	2017/12/31			
In-force business investment yield	4.00% ~ Year 2036 5.05% for NTD policies 4.76% ~ Year 2036 5.82% for USD policies (Equivalent investment yield: 4.50% Rolling over to 2017: 4.51%)	3.92% ~ Year 2037 5.05% for NTD policies 4.67% ~ Year 2037 5.82% for USD policies (Equivalent investment yield: 4.43%)			
Risk discount rate	10%	10%			
Adjusted net worth	392	464			
Value of in-force business	633	670			
Cost of capital (CoC)	-169	-190			
Value of in-force business (After CoC)	464	480			
Embedded Value (EV)	856	944			
EV / per share	161.3(68.1)	164.8(75.1)			
Future one year's new business investment yield	2.97%~ Year 2036 4.91% for NTD policies 4.38% ~ Year 2036 5.84% for USD policies	2.91%~ Year 2037 4.91% for NTD policies 4.22% ~ Year 2037 5.84% for USD policies			
Value of future one year's new business (After CoC)	54.0	54.5			
Appraisal Value (AV)	1,328	1,416			
AV / per share	250.3(105.7)	247.3(112.7)			

Note: (1) EV/AV calculation does not include business of Cathay Life in China and Vietnam.

(2) per share = per share of Cathay Life; (per share) = per share of Cathay FHC

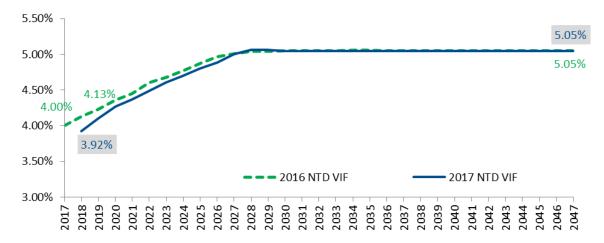
(4) The outstanding shares of Cathay FHC in 2016 and 2017 are 12.6bn.

(5) May not sum to total due to rounding.

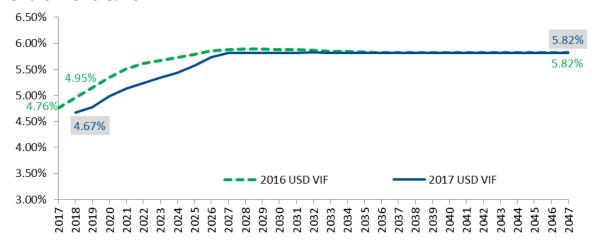
<sup>(3)</sup> The outstanding shares of Cathay Life in 2016 and 2017 are 5.3bn and 5.7bn, respectively. The increase of outstanding shares of Cathay Life in 2017 reflects capital injection in June 2018.

# **Economic Assumptions: In-force business investment yield**

■ Investment return assumptions for the value of in force business of NTD-denominated policies as of the end of 2016 & 2017.



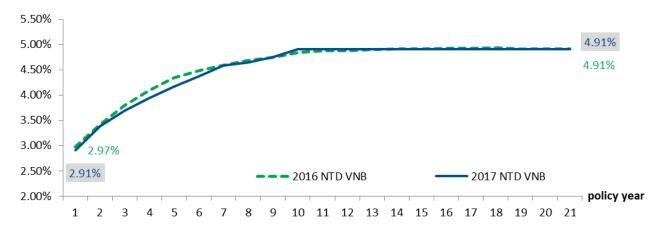
■ Investment return assumptions for the value of in force business of USD-denominated policies as of the end of 2016 & 2017.



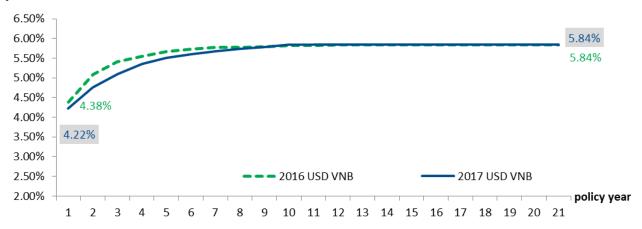


# Economic Assumptions: Future one year's new business investment yield

■ Investment return assumptions for the value of future one year's new business of NTD-denominated policies as of the end of 2016 & 2017.



■ Investment return assumptions for the value of future one year's new business of USD-denominated policies as of the end of 2016 & 2017.



### **Cost of Capital Projection and Non-economic Assumptions**

#### ■ RBC capital requirement:

Apply 2017 RBC formula announced by Insurance Bureau to project future capital requirement.

- 1. Capital Requirement = 200% RBC.
- 2. Risk-based capital calculation reflects company's current and future operation status.
- 3. Reflect RBC calculation change in 2017
  - ① For C3 risk capital of traditional products, the extra risk factor applied to previous year's C3 risk capital is increased from 40% to 50%. This change is reflected in all projection years.
  - ②The calculation of asset concentration risk is adjusted to reflect the change in bond classification from 3 categories to 4 categories.

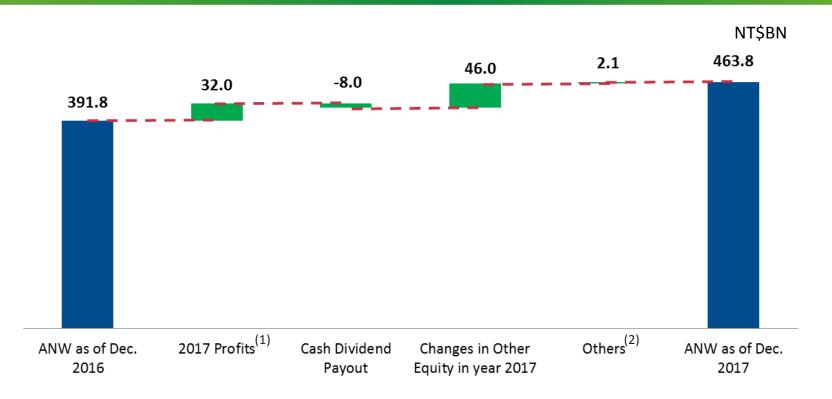
#### **Experience** rate:

Experience Rate	Assumptions
Mortality Rate	In accordance with Cathay's most updated mortality trends.
Morbidity Rate	In accordance with Cathay's most updated morbidity trends and varied by product type.
Lapse Rate	In accordance with Cathay's most updated lapse rate trends and varied by product type.
Expenses	In accordance with Cathay's most updated expense analysis and varied by product type;
Assumption	commissions are based on the actual commission rates.

■ PricewaterhouseCoopers Asia Actuarial Services provides an independent review of the actuarial assumptions on EV.



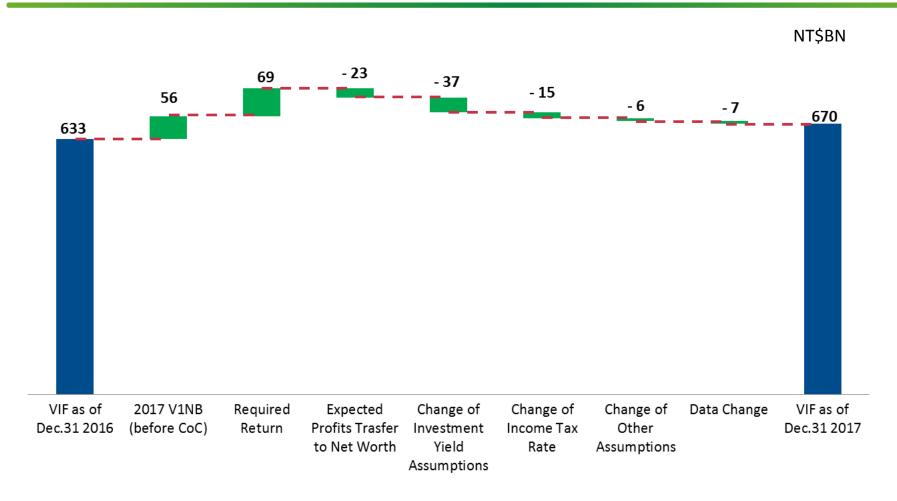
### **Analysis of change in Adjusted Net Worth (ANW)**



#### Note:

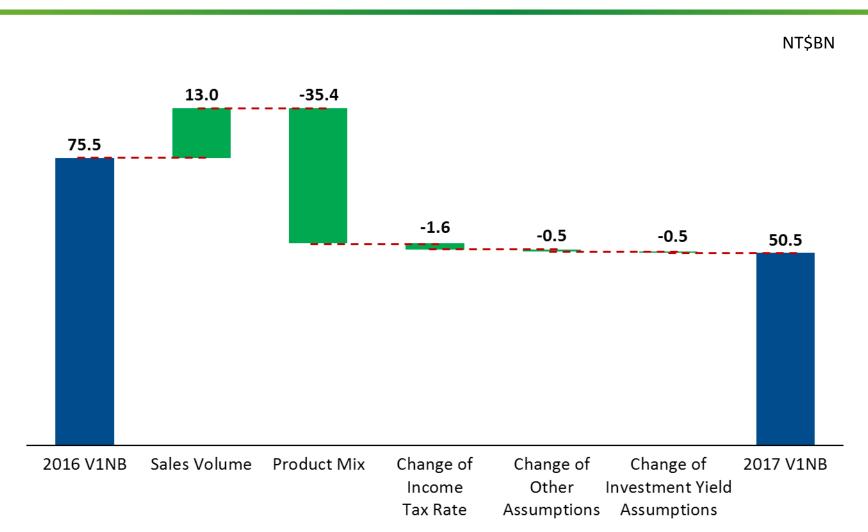
- (1) The profit of 2017 is 36.3 billion. However, 4.3 billion is recovered from special reserve of unrealized gains on property, which is already reflected in ANW of 2016. Thus, we reflect the remaining 32.0 billion in the item "2017 Profits".
- (2) Others include change of foreign exchange volatility reserve 1.7 billion.

## Analysis of change in value of in-force business (VIF)



■ The value of one year new business (after CoC) of 2017 is 50.5 billion.

#### Analysis of change in value of one year's new business (V1NB)





### **Sensitivity Analysis**

NT\$BN, except for per share figures

Valuation date	2017/12/31					
Assumption	Investment yield - 0.25%	Investment yield + 0.25%	Investment yield + 0.25% (capped) <sup>(1)</sup>	Base Case	Discount rate – 0.5%	Discount rate + 0.5%
Adjusted net worth	464	464	464	464	464	464
Value of in-force business	549	791	735	670	713	631
Cost of capital (CoC)	-199	-181	-185	-190	-183	-197
Value of in-force business (After CoC)	350	610	550	480	530	435
Embedded Value	813	1,074	1,014	944	994	899
EV / per share	142.1 (64.8)	187.5 (85.5)	177.1 (80.7)	164.8 (75.1)	173.6 (79.1)	156.9 (71.5)
Appraisal Value	1,249	1,578	1,500	1,416	1,493	1,347
Value of future one year's new business (After CoC)	48.9	60.2	56.3	54.5	58.7	50.7
AV / per share	218.0 (99.4)	275.6 (125.6)	262.0 (119.4)	247.3 (112.7)	260.7 (118.9)	235.2 (107.2)

Note: (1) "Investment yield +0.25% (capped)": the investment return is capped by 5.05% for NTD policies and 5.82% for USD policies.

<sup>(2)</sup> May not sum to total due to rounding.



### **YoY Comparison**

Under the different discount rate assumption (9.5%  $\sim$  10.5%), the results of the Year 2016 & 2017 go as follows.

NT\$BN

Valuation date	2016/12/31	2017/12/31
Embedded Value	813~903	899~994
Value of future one year's new business	50.2~58.3	50.7~58.7
Appraisal Value	1,266~1,394	1,347~1,493

### **Summary**

NT\$BN, except for per share figures

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	Valuation date	2016	2017	Growth rate	1Q18
Embedded value	Equity	361	436	21%	
	Adjusted net worth	392	464	18%	
	Value of in-force business(before CoC)	633	670	6%	
	Cost of capital (CoC)	-169	-190	12%	
	Value in-force business (after CoC)	464	480	3%	
	Embedded value	856	944	10%	
	First year premium (FYP)	199.1	233.2	17%	67.9
	First year premium equivalent (FYPE)	135.0	78.6	-41%	21.4
Value of one	Value of one year's new business (V1NB)	75.5	50.5	-33%	14.5
year's new business	Profit margin (V1NB/FYP)	38%	22%		21%
	Profit margin (V1NB/FYPE)	56%	64%		68%
	Profit margin (V1NB/FYP)(investment-	51%	57%		55%
	linked(non-VUL)is excluded)				
Appraisal value	Multiple	8.7	8.7		
(20 years NB)	Appraisal value	1,328	1,416	7%	
Basic Value	EV / per share of Cathay FHC	68.1	75.1	10%	
per share	AV / per share of Cathay FHC	105.7	112.7	7%	

Note: (1) Basic EV and AV per share is based on weighted average of outstanding shares 12.6bn.

(2) Totals may not sum due to rounding.

