

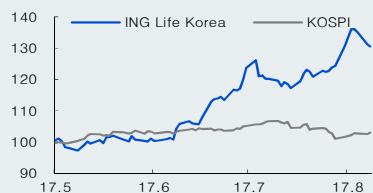
## Insurance

Initiate Report  
August 23, 2017

(Initiate)	<b>Buy</b>
Target Price (12M, W)	<b>47,000</b>
Share Price (01/01/14, W)	41,250
Expected Return	14%

NP (17F, Wbn)	339
Consensus OP (17F, Wbn)	315
EPS Growth (17F, %)	40.9
Market EPS Growth (17F, %)	30.9
P/E (17F, x)	10.0
Market P/E (17F, x)	10.7
KOSPI	2,365.33
Market Cap (Wbn)	3,383
Shares Outstanding (mn)	82
Free Float (%)	40.0
Foreign Ownership (%)	35.4
Beta (12M)	0.40
52-Week Low	30,750
52-Week High	43,000

(%)	1M	6M	12M
Absolute	8.6	0.0	0.0
Relative	12.4	0.0	0.0



Mirae Asset Daewoo Co., Ltd.

[Securities/Insurance]

Gil-won Jeong  
+822-3774-1675  
gilwon.jeong@miraeasset.com

# ING Life Korea

(079440 KS)

## Ideal dividend play

### Ideal dividend play

In a stagnant industry, companies that enhance shareholder returns through dividends generally offer the most compelling investment case. In the insurance sector, whether an insurer is a good dividend stock depends on whether it is well-capitalized enough to respond flexibly to tightening regulations (such as IFRS 17 and capital requirements).

ING Life Korea not only has abundant capital, but also relatively low exposure to high-interest, fixed-rate liabilities, making it less vulnerable to the pressures of mark-to-market accounting. In our view, this creates the conditions necessary for stable dividend payments. That said, the insurer's paltry new business growth and value suggests that growth-focused valuation may have its limitations. Given the structural slowdown in new business growth across the sector, we believe that, in addition to traditional valuation tools, such as value of new business (VNB) and ROE-P/B, the dividend discount model (DDM) will become increasingly relevant in the valuation of insurance stocks.

We initiate our coverage on ING Life Korea with a Buy rating and a DDM-based target price of W47,000.

### Upside potential for growth and profit margins

ING Life Korea has an ROE of around 8%. While the insurer's loss ratio improvements are not particularly impressive, its excess interest has remained stable, compared with that of other life insurers, thanks to a sound liabilities structure (high-interest, fixed-rate liabilities account for only 10% of reserves). In particular, the insurer has maintained an extremely conservative asset portfolio.

VNB, which represents the actual increase in shareholder value from operating activities, is improving, but remains weak in absolute terms. Indeed, compared with its VNB (W100bn annually), the insurer's valuation looks excessively high.

One way to address this problem is raising the percentage of protection-type sales, which is currently a mere 30%. We think this could be done over time. Under the upcoming IFRS 17, contractual service margin (CSM), which represents insurers' unearned profits from the services it provides, will be initially deferred as a liability and subsequently recognized as profit based on the passage of time. We believe this will inevitably force the insurer to move away from its top line-oriented sales strategy and focus more on selling protection-type contracts, which offer more CSM.

The lifting of price controls has opened doors for insurers to move beyond conventional protection-type policies and develop a more diverse range of new products. Because of their higher margins, protection-type policies are more susceptible to pricing risks, meaning insurers may find it hard to keep selling such policies without a sufficient capital buffer. We thus believe that well-capitalized insurers like ING Life Korea are more competitively positioned.

Given the insurer's extremely risk-averse asset portfolio, we also see potential for interest margin gains through reasonable risk taking.

FY(Dec.)	12/14	12/15	12/16	12/17F	12/18F	12/19F
Direct premiums (Wbn)	-	4,500	4,058	4,172	4,272	4,418
Pretax profit (Wbn)	-	396	315	447	468	485
NP (Wbn)	-	305	241	339	355	368
EPS (W)	-	3,717	2,936	4,138	4,327	4,483
BPS (W)	-	51,963	50,578	50,095	54,422	58,905
P/E (x)	-	-	-	10.0	9.5	9.2
P/B (x)	-	-	-	0.8	0.8	0.7
ROE (%)	-	8.6	5.7	8.2	8.5	8.4
Dividend yield (%)	-	-	-	4.4	6.1	6.3
Stockholders' equity (Wbn)	-	4,261	4,147	4,132	4,482	4,842

Note: All figures are based on consolidated K-IFRS; NP refers to net profit attributable to controlling interests

Source: Company data, Mirae Asset Daewoo Research estimates

## Initiate with Buy and TP of W47,000

### Dividend play

Growth in VNB has been sluggish, due to: 1) a decline in the economically active population arising from population aging; and 2) deepening income polarization.

In a stagnant industry, companies that enhance shareholder returns through dividends generally offer the most compelling investment case. Due to its public role, the financial industry is deeply tethered to government regulations that restrict excessive competition and ensure financial stability. As such, regulations are an important factor in forecasting financial firms' payout ratios. In the insurance sector, whether an insurer is a good dividend stock depends on whether it is well-capitalized enough to respond flexibly to tightening regulations (such as IFRS 17 and capital requirements).

### DDM is relevant in the valuation of insurance stocks

ING Life Korea has announced that it will maintain a payout ratio of more than 50% for the time being. For FY2017, we forecast its dividend per share at more than W2,500 (including an interim dividend payout of W700 per share).

ING Life Korea not only has abundant capital, but also relatively low exposure to high-interest, fixed-rate liabilities, making it less vulnerable to the pressures of mark-to-market accounting. In our view, this creates the conditions necessary for stable dividend payments. That said, the insurer's paltry new business growth and value suggests that growth-focused valuation may have its limitations. Given the structural slowdown of new business growth across the sector, we believe that, in addition to traditional valuation tools, such as value of VNB and ROE-P/B, the dividend discount model (DDM) will become increasingly relevant in the valuation of insurance stocks.

We initiate our coverage on ING Life Korea with a Buy rating and a DDM-based target price of W47,000. We may revise our target price in the event of changes in our dividend forecast.

**Table 1. Target price valuation**

(Wbn, W, 000's shares)

DDM	12/17F	12/18F	12/19F	12/20F	12/21F	12/22F	12/23F
Dividend	205	205	213	232	240	248	255
PV	188	173	165	165	156	148	140
SUM of PV	1,133						
Continuing value	4,998						
PV of continuing value	2,734						
<b>Enterprise value</b>	<b>3,867</b>						
Shares issued (000's shares)	8,200						
<b>Fair value per share (W)</b>	<b>47,160</b>						

Notes: Calculation assumes sustainable ROE of 8%, payout ratio of 60%, and discount rate of 8.5%

Source: Mirae Asset Daewoo Research estimates

**Table 2. Target price sensitivity analysis with respect to sustainable ROE and payout ratio**

		Sustainable ROE						
		5.0%	6.0%	7.0%	8.0%	9.0%	10.0%	11.0%
Payout ratio	40%	23,297	26,998	30,810	34,736	38,777	42,935	47,212
	45%	25,284	29,390	33,611	37,947	42,401	46,974	51,669
	50%	27,243	31,743	36,357	41,087	45,935	50,902	55,990
	55%	29,176	34,057	39,051	44,158	49,381	54,720	60,176
	60%	31,082	36,333	41,692	47,160	52,738	58,428	64,231
	65%	32,961	38,570	44,280	50,093	56,009	62,030	68,157
	70%	34,814	40,769	46,817	52,959	59,195	65,527	71,954
	75%	36,641	42,931	49,303	55,758	62,297	68,919	75,626
	80%	38,442	45,055	51,738	58,492	65,315	72,209	79,175

Source: Mirae Asset Daewoo Research

### Growth and profit margins

#### ROE of around 8%

ING Life Korea has an ROE of around 8%. For 2Q17, net profit expanded sharply YoY to W98.4bn (versus W38.3bn in 2Q16). Even excluding the one-off expense of W60.8bn (arising from the payment of overdue death claims for policy holders who committed suicide), net profit climbed 16% YoY during the quarter. The loss ratio was not particularly impressive, remaining flat YoY, at 72.9%. However, loading profit improved sharply, thanks to higher expected expenses.

Of note, excess interest has remained stable, compared with that of other life insurers, thanks to a sound liabilities structure (high-interest, fixed-rate liabilities account for only 10% of reserves). In particular, the insurer has maintained an extremely conservative asset portfolio, with bonds (mostly KTBs and those issued by state-owned enterprises and public organizations) accounting for 87%. In addition, its loan assets represent 9%, of which risk-free loans secured by insurance policies account for 86%.

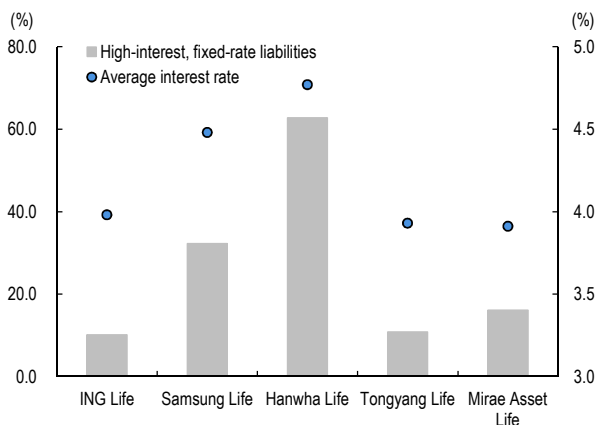
We note that the company is better positioned to increase profits through aggressive alternative investments, given its high RBC ratio.

**Table 3. 2Q financial results**

(Wbn)	2Q17	2Q16	YoY	YTD 2017	YTD 2016	YoY
New contracts APE	145.8	155.7	-6.4%	326.7	291.9	11.9%
- Protection-type	67.9	61.6	10.2%	142.6	126.1	13.0%
VoNB	25.1	17.8	41.4%	60.4	35.6	69.7%
Direct premium	1,006.0	997.3	0.9%	2,049.0	1,964.4	4.3%
Adj. pretax profit	124.9	109.6	14.0%	223.9	195.5	14.5%
Net profit	98.4	84.4	16.6%	181.4	153.0	18.6%
Total assets	31,219.9	31,254.0	-0.1%	31,219.9	31,254.0	-0.1%
Invested assets	24,298.7	24,414.6	-0.5%	24,298.7	24,414.6	-0.5%
Total equity	3,949.9	4,942.8	-20.1%	3,949.9	4,942.8	-20.1%
RBC ratio	523%	325%	197%p	523%	325%	197%p

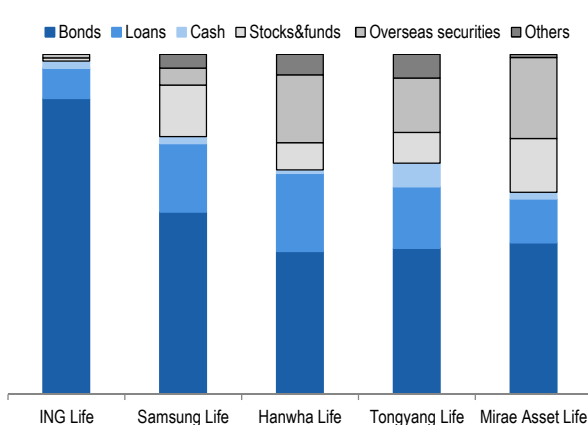
Source: Company data, Mirae Asset Daewoo Research

**Figure 1. High-interest, fixed-rate liabilities, as percentage of reserves and average interest rate**



Source: Company data, Mirae Asset Daewoo Research

**Figure 2. Asset portfolio, by insurer**



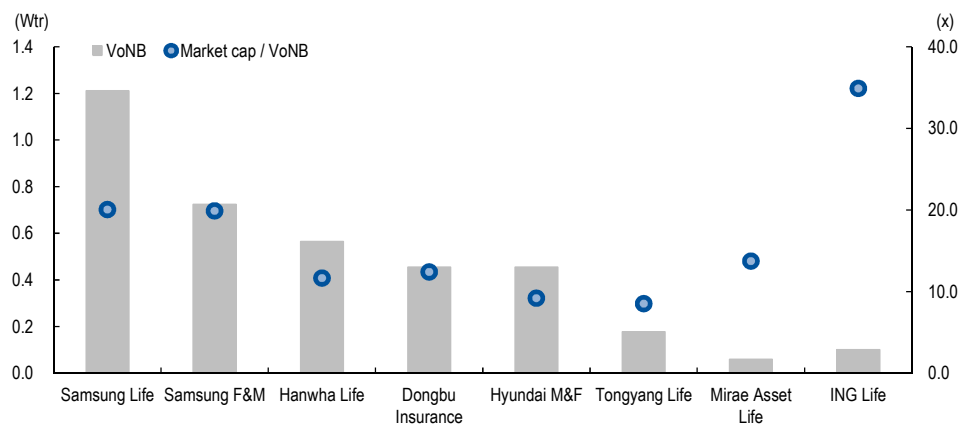
Source: Korea Life Insurance Association, Mirae Asset Daewoo Research

**VNB improving, but remains weak in absolute terms**

VNB, which represents the actual increase in shareholder value from operating activities, grew 70% YoY to W60.4bn in 1H17, while annual premium equivalent (APE) increased only 12% YoY. ING Life Korea explained that the robust increase in VNB was attributable to: 1) increased APE for high-margin protection-type policies; and 2) the rise in VNB margin (from 12.2% in 2H16 to 18.5% in 2H17). The insurer’s 1H17 VNB growth was impressive, compared with that of other insurers, which displayed weak VNB growth (6% for Samsung Life) in 1H17, due to assumed interest rate cuts in 2016.

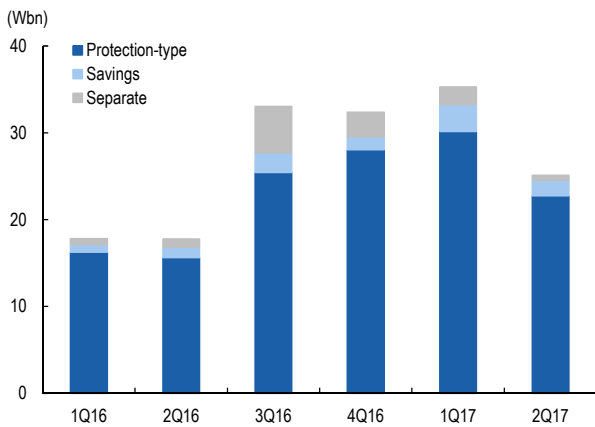
However, the insurer’s valuation looks excessively high, as its VNB (W100bn annually) is far lower than its peers of a similar capital size. In our view, one way to address this problem would be to raise the percentage of protection-type sales, currently at just 40% (versus 50-60% for top-tier insurers).

**Figure 3. VNB comparison by insurer**



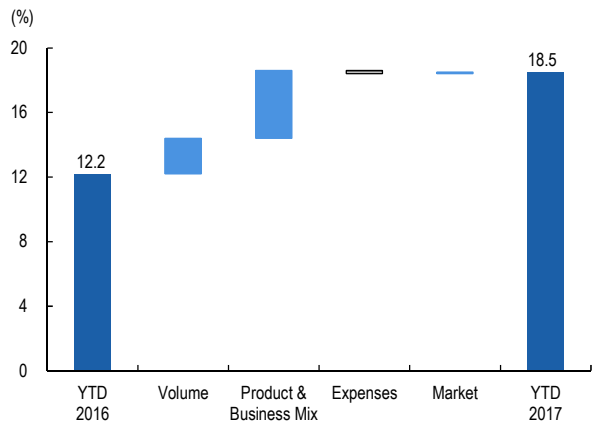
Source: Company data, Mirae Asset Daewoo Research

**Figure 4. Changes in VNB**



Source: Company data, Mirae Asset Daewoo Research

**Figure 5. Changes in VNB margin**



Source: Company data, Mirae Asset Daewoo Research

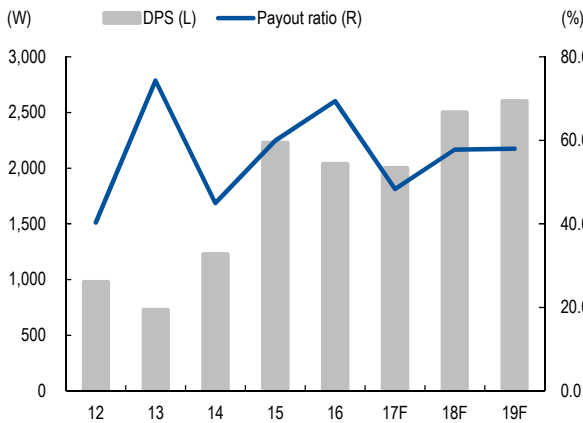
### Conditions for robust shareholder returns

#### Abundant capital → resources for dividends

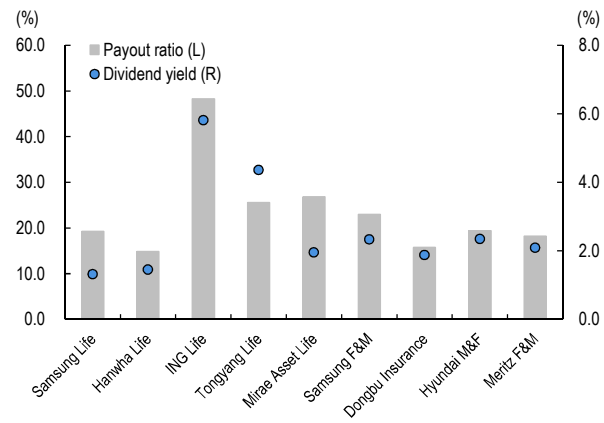
A financial firm's dividend payment capabilities are largely determined by its ability to adapt to regulatory changes. Uncertainties over insurers' shareholder returns are growing amid continuing changes to the regulatory environment (the mark-to-market accounting of liabilities and strengthening capital regulations). In particular, top-tier life insurers with relatively high exposure to high-interest, fixed-rate liabilities stand to be highly affected by such changes. However, high-interest, fixed-rate liabilities account for only 10% of reserves at ING Life Korea (versus 30-40% for other top-tier insurers). Based on its strong capital ratios and robust capital base, the company is expected to respond flexibly to strengthening regulations.

Indeed, the extension of the maximum duration of insurance liabilities from 20 to 30 years this year pushed up interest rate risks for most insurers. However, ING Life saw its risk-based capital (RBC) ratio rise by around 200%p to 523% in 2Q, thanks to the narrowing of the duration gap. The insurer had preemptively reflected the extension of maximum duration in its RBC calculation.

**Figure 6. Dividend payout ratio and DPS trend** **Figure 7. Major insurers' dividend payout ratios and dividend yields (based on 2017F dividend payments)**



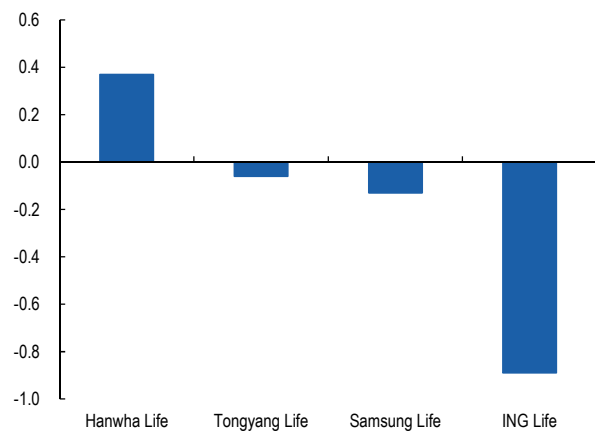
Source: Company data, Mirae Asset Daewoo Research



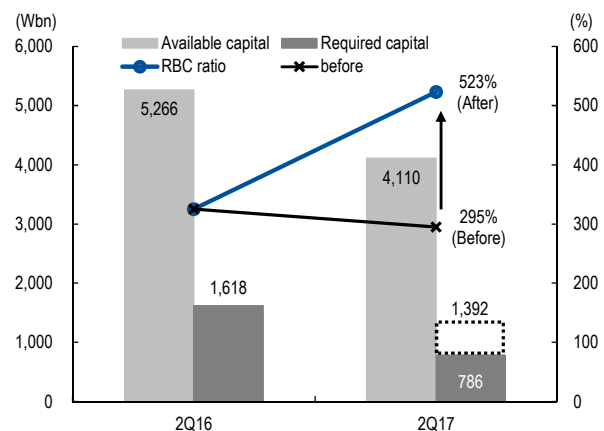
Note: Data for Mirae Asset Life Insurance and Tong Yang Life Insurance are based on the consensus.

Source: Quantwise, Mirae Asset Daewoo Research

**Figure 8. Comparison of major insurers' duration gap** **Figure 9. ING Life's RBC ratio trend**



Source: Company data, Mirae Asset Daewoo Research



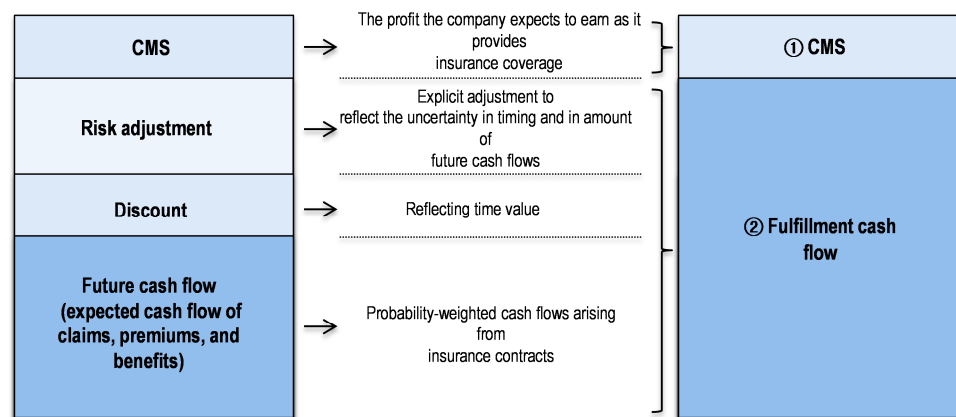
Source: Company data, Mirae Asset Daewoo Research

## Strong capital base enhances upside potential for growth and profit margins

### Growth and profit margins to improve amid regulatory changes

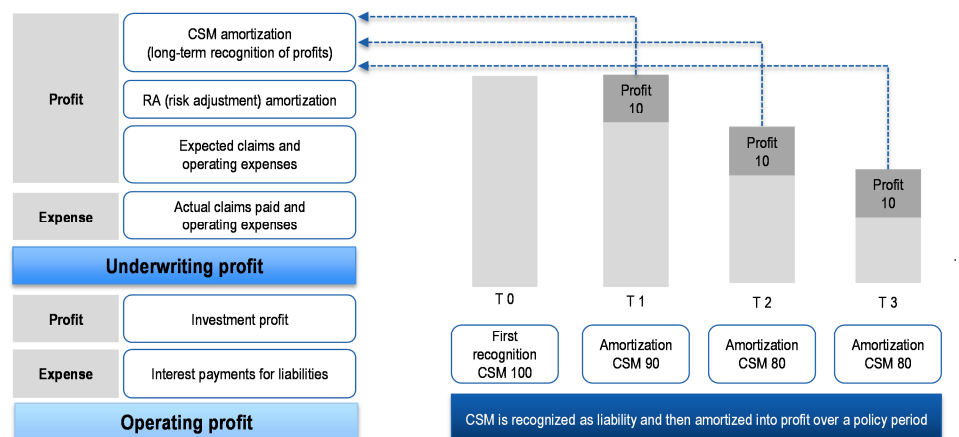
The introduction of the IFRS 17, starting in 2021, will inevitably force ING Life Korea to move away from its top line-oriented sales strategy and focus more on profitability. The new regulations should require the mark-to-market valuation of insurance contract liabilities, as well as the separation of the investment component from insurance contracts. In addition, under the new accounting standard, CSM - which represents insurers' unearned profits from the services provided - will be initially deferred as a liability and subsequently recognized as profits based on the passage of time. The IFRS 17 aims at improving the quality of financial information by better reflecting potential gains and risks, as well as enhancing global comparability. We believe such regulatory changes should encourage insurers to concentrate on the sales of protection-type contracts, which offer higher CSM.

**Figure 10. Accounting of insurance contract liabilities under IFRS17**



Source: Korea Accounting Standards Board, Mirae Asset Daewoo Research

**Figure 11. Recognition of CSM under IFRS17**



Source: Mirae Asset Daewoo Research

**Lifting of price controls to benefit well-capitalized insurers**

The FSC’s deregulation, such as the removal of maximum limits on safety margins and risk rate adjustment (pricing liberalization), should help insurers develop new protection-type policies.

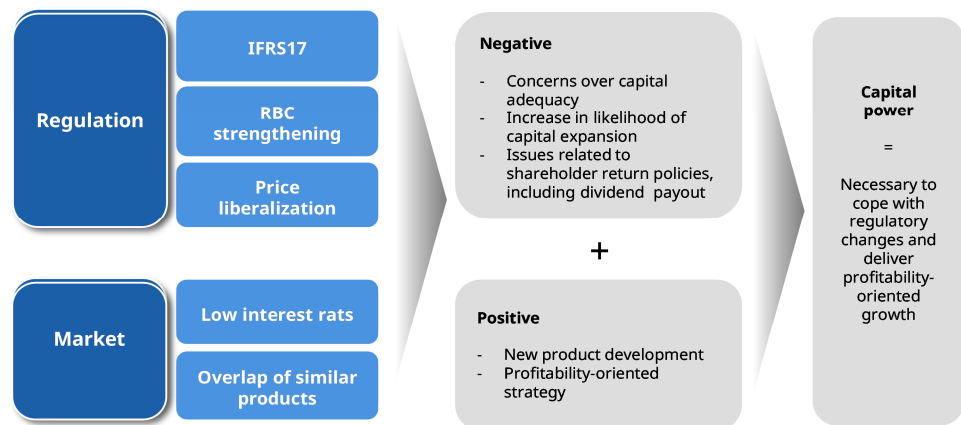
Population aging has driven up the demand for living benefits, but the difficulty of reasonably estimating and predicting risk rates has made it hard to keep the loss ratios of new protection-type policies under control.

If companies can better control risks via sufficient safety margins, they will be able to sell a wider range of protection-type and nonrenewal policies that appeal to consumers.

Meanwhile, protection-type policies (with higher margins) are more susceptible to pricing risks, meaning insurers may find it hard to keep selling such policies without a sufficient capital buffer. We hence believe well-capitalized insurers like ING Life Korea are more competitively positioned.

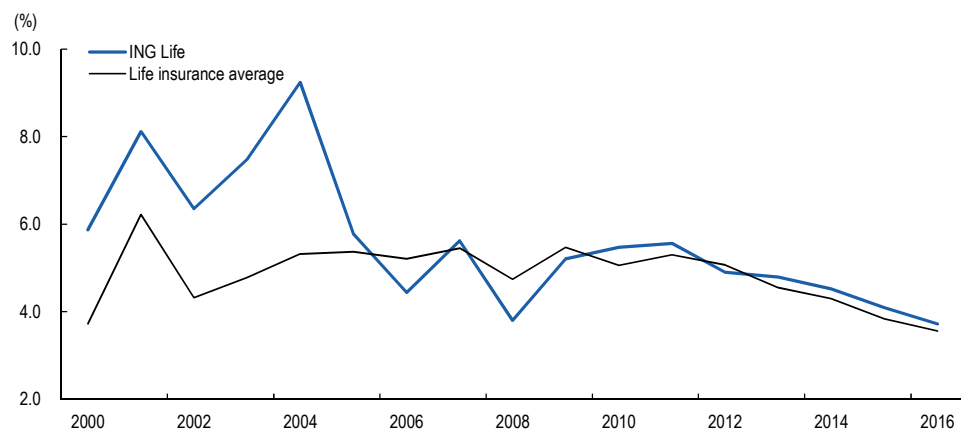
Given the insurer’s extremely risk-averse asset portfolio, we also see the potential for interest margin gains through reasonable risk taking.

**Figure 12. Changes in regulatory environment and implications for the insurance sector**



Source: Mirae Asset Daewoo Research

**Figure 13. Comparison of return on AUM**



Source: FSS, Mirae Asset Daewoo Research

**Risk factors**

**Relative risk: Cyclical uptrend in market interest rates**

In our view, a cyclical uptrend in market interest rates would increase the attention paid to top-tier life insurers with relatively high risks of negative spread.

As for life insurers, a rise in interest rates would lead to a reduction in the negative spread and recovery in the in-force business value, which would drive down their debt-to-equity ratios and thus increase dividend payouts. For top-tier life insurers, a 50bps rise in interest rates is projected to drive up the embedded value by 5%. Meanwhile, we estimate the benefit of higher interest rates to be negligible for ING Life Korea.

We thus believe that the firm’s merits, in terms of share prices and dividends, could be diluted.

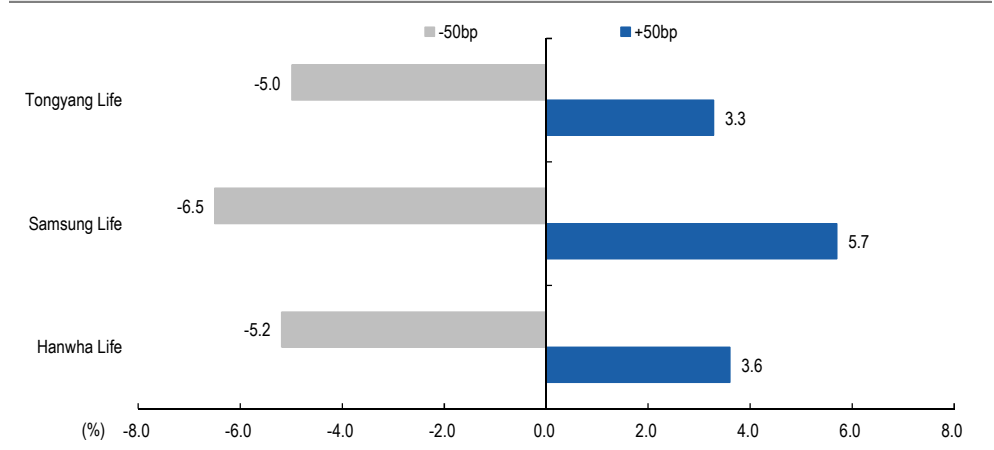
**Impending expiration of brand license agreement**

ING Life Korea has been operating under the ING brand name, based on a five-year licensing agreement entered into with ING Groep N.V. The five-year contract term is set to expire in December 2018.

As part of its efforts to establish a new brand, the firm has completed the registration of a new trademark (Orange).

Costs related to building the new brand could cut into growth in new business value.

**Figure 14. Embedded value sensitivity to interest rate changes**



Source: Company data, Mirae Asset Daewoo Research

## ING Life Korea (079440 KS/Buy/TP: W47,000)

**Summarized income statement**

(Wbn)	12/16	12/17F	12/18F	12/19F
<b>Underwriting income</b>	<b>4,165</b>	<b>4,283</b>	<b>4,383</b>	<b>4,529</b>
Direct premium	4,058	4,172	4,272	4,418
- General account	3,142	3,258	3,336	3,449
- Separate account	915	914	936	968
Reinsurance profit	108	111	111	111
<b>Underwriting expense</b>	<b>2,455</b>	<b>2,494</b>	<b>2,589</b>	<b>2,688</b>
Claim paid	1,723	1,782	1,845	1,916
Reinsurance expense	122	128	133	139
General expense	355	364	383	395
Depreciation of new contract	254	220	229	238
Discount	1	-1	-1	-1
<b>Underwriting profit</b>	<b>795</b>	<b>875</b>	<b>858</b>	<b>873</b>
<b>Investment profit</b>	<b>852</b>	<b>862</b>	<b>903</b>	<b>921</b>
Increase of legal reserve	1,419	1,199	845	904
<b>Pretax profit</b>	<b>315</b>	<b>447</b>	<b>468</b>	<b>485</b>
Tax	74	108	113	117
<b>Net profit</b>	<b>241</b>	<b>339</b>	<b>355</b>	<b>368</b>

**Summarized balance sheet**

(Wbn)	12/16	12/17F	12/18F	12/19F
<b>Invested asset</b>	<b>23,984</b>	<b>24,787</b>	<b>25,655</b>	<b>26,553</b>
Cash and equivalent	565	581	602	623
Securities	0	10	11	11
Marketable securities	21,329	21,967	22,736	23,532
Loans	2,089	2,228	2,306	2,387
Operational asset	1,332	1,322	1,335	1,349
Separate account asset	5,353	5,951	6,547	7,201
<b>Total assets</b>	<b>30,669</b>	<b>32,061</b>	<b>33,536</b>	<b>35,102</b>
Legal reserve	19,878	21,059	21,908	22,817
Policyholders equity adjustment	213	184	191	199
Others	1,019	877	912	950
Separate account liabilities	5,411	5,809	6,044	6,295
<b>Total liabilities</b>	<b>26,521</b>	<b>27,929</b>	<b>29,055</b>	<b>30,261</b>
Capital	82	82	82	82
Capital surplus	498	499	499	499
Retained earnings	1,766	1,962	2,312	2,672
AOCI	1,801	1,589	1,589	1,589
<b>Total shareholders' equity</b>	<b>4,147</b>	<b>4,132</b>	<b>4,482</b>	<b>4,842</b>
<b>Total liabilities &amp; shareholders' Equity</b>	<b>30,669</b>	<b>32,061</b>	<b>33,536</b>	<b>35,102</b>

Source: Company data, Mirae Asset Daewoo Research estimates

**Key ratio**

	12/16	12/17F	12/18F	12/19F
<b>Growth (%)</b>				
Direct premium	-9.8%	2.8%	2.4%	3.4%
General accounts	-12.2%	3.7%	2.4%	3.4%
Separate accounts	-0.4%	-0.1%	2.4%	3.4%
Risk premium	3.6%	3.4%	3.0%	3.5%
APE	3.1%	7.1%	2.9%	2.6%
Protection-type insurance	22.1%	11.4%	7.0%	6.0%
Savings-type insurance (excluding variable policies)	-23.0%	11.4%	0.0%	0.0%
Variable policies	47.1%	35.4%	-6.0%	0.0%
Pretax profit	35.7%	-20.4%	41.9%	4.7%
Net profit	-21.0%	40.9%	4.6%	3.6%
Equity capital	-2.7%	-1.0%	8.6%	8.2%
Invested asset	5.5%	3.3%	3.5%	3.5%
Total asset	3.8%	4.5%	4.6%	4.7%
Legal reserve	7.7%	6.0%	4.0%	4.1%

**Profitability (%)**

	12/16	12/17F	12/18F	12/19F
General expense / direct premium	15.0	14.0	14.3	14.4
Claim / risk premium	84.8	75.2	74.5	74.2
Investment yield	3.7	3.6	3.6	3.5
Expectation interest	4.1	4.1	4.0	3.9

**Invested asset (%)**

	12/16	12/17F	12/18F	12/19F
Cash and equivalent	2.4	2.3	2.3	2.3
Bonds	86.7	86.1	85.7	85.2
Stocks, funds and equity investment	1.3	1.3	1.5	1.8
Overseas securities	0.9	1.0	1.0	1.0
Other securities	0.1	0.0	0.0	0.0
Loans	8.7	9.3	9.5	9.7

**Data**

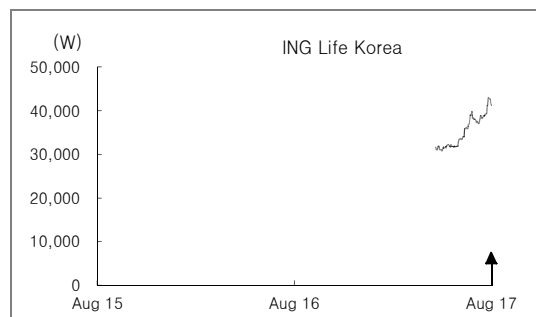
	12/16	12/17F	12/18F	12/19F
EPS	2,936	4,138	4,327	4,483
BPS	50,578	50,095	54,422	58,905
DPS	2,037	1,800	2,500	2,600
PER	-	10.0	9.5	9.2
PBR	-	0.8	0.8	0.7
ROE	5.7	8.2	8.5	8.4
ROA	0.8	1.1	1.1	1.0
Dividend payout ratio	69.4	43.5	57.8	58.0
Dividend yield	-	4.4	6.1	6.3

## APPENDIX 1

### Important Disclosures & Disclaimers

#### 2-Year Rating and Target Price History

Company (Code)	Date	Rating	Target Price
ING Life Korea (079440)	08/22/2017	Buy	47,000



#### Stock Ratings

Buy	: Relative performance of 20% or greater
Trading Buy	: Relative performance of 10% or greater, but with volatility
Hold	: Relative performance of -10% and 10%
Sell	: Relative performance of -10%

#### Industry Ratings

Overweight	: Fundamentals are favorable or improving
Neutral	: Fundamentals are steady without any material changes
Underweight	: Fundamentals are unfavorable or worsening

Ratings and Target Price History (Share price (—), Target price (—), Not covered (■), Buy (▲), Trading Buy (■), Hold (●), Sell (◆))

\* Our investment rating is a guide to the relative return of the stock versus the market over the next 12 months.

\* Although it is not part of the official ratings at Mirae Asset Daewoo Co., Ltd., we may call a trading opportunity in case there is a technical or short-term material development.

\* The target price was determined by the research analyst through valuation methods discussed in this report, in part based on the analyst's estimate of future earnings.

\* The achievement of the target price may be impeded by risks related to the subject securities and companies, as well as general market and economic conditions.

#### Equity Ratings Distribution

Buy	Trading Buy	Hold	Sell
69.67%	17.06%	13.27%	0.00%

\* Based on recommendations in the last 12-months (as of June 30, 2017)

#### Disclosures

As of the publication date, Mirae Asset Daewoo Co., Ltd. and/or its affiliates do not have any special interest with the subject company and do not own 1% or more of the subject company's shares outstanding.

#### Analyst Certification

The research analysts who prepared this report (the "Analysts") are registered with the Korea Financial Investment Association and are subject to Korean securities regulations. They are neither registered as research analysts in any other jurisdiction nor subject to the laws and regulations thereof. Opinions expressed in this publication about the subject securities and companies accurately reflect the personal views of the Analysts primarily responsible for this report. Mirae Asset Daewoo Co., Ltd. ("Mirae Asset Daewoo") policy prohibits its Analysts and members of their households from owning securities of any company in the Analyst's area of coverage, and the Analysts do not serve as an officer, director or advisory board member of the subject companies. Except as otherwise specified herein, the Analysts have not received any compensation or any other benefits from the subject companies in the past 12 months and have not been promised the same in connection with this report. No part of the compensation of the Analysts was, is, or will be directly or indirectly related to the specific recommendations or views contained in this report but, like all employees of Mirae Asset Daewoo, the Analysts receive compensation that is determined by overall firm profitability, which includes revenues from, among other business units, the institutional equities, investment banking, proprietary trading and private client division. At the time of publication of this report, the Analysts do not know or have reason to know of any actual, material conflict of interest of the Analyst or Mirae Asset Daewoo except as otherwise stated herein.

#### Disclaimers

This report is published by Mirae Asset Daewoo, a broker-dealer registered in the Republic of Korea and a member of the Korea Exchange. Information and opinions contained herein have been compiled in good faith and from sources believed to be reliable, but such information has not been independently verified and Mirae Asset Daewoo makes no guarantee, representation or warranty, express or implied, as to the fairness, accuracy, completeness or correctness of the information and opinions contained herein or of any translation into English from the Korean language. In case of an English translation of a report prepared in the Korean language, the original Korean language report may have been made available to investors in advance of this report.

The intended recipients of this report are sophisticated institutional investors who have substantial knowledge of the local business environment, its common practices, laws and accounting principles and no person whose receipt or use of this report would violate any laws and regulations or subject Mirae Asset Daewoo and its affiliates to registration or licensing requirements in any jurisdiction shall receive or make any use hereof.

This report is for general information purposes only and it is not and shall not be construed as an offer or a solicitation of an offer to effect transactions in any securities or other financial instruments. The report does not constitute investment advice to any person and such person shall not be treated as a client of Mirae Asset Daewoo by virtue of receiving this report. This report does not take into account the particular investment objectives, financial situations, or needs of individual clients. The report is not to be relied upon in substitution for the exercise of independent judgment. Information and opinions contained herein are as of the date hereof and are subject to change without notice. The price and value of

the investments referred to in this report and the income from them may depreciate or appreciate, and investors may incur losses on investments. Past performance is not a guide to future performance. Future returns are not guaranteed, and a loss of original capital may occur. Mirae Asset Daewoo, its affiliates and their directors, officers, employees and agents do not accept any liability for any loss arising out of the use hereof.

Mirae Asset Daewoo may have issued other reports that are inconsistent with, and reach different conclusions from, the opinions presented in this report. The reports may reflect different assumptions, views and analytical methods of the analysts who prepared them. Mirae Asset Daewoo may make investment decisions that are inconsistent with the opinions and views expressed in this research report. Mirae Asset Daewoo, its affiliates and their directors, officers, employees and agents may have long or short positions in any of the subject securities at any time and may make a purchase or sale, or offer to make a purchase or sale, of any such securities or other financial instruments from time to time in the open market or otherwise, in each case either as principals or agents. Mirae Asset Daewoo and its affiliates may have had, or may be expecting to enter into, business relationships with the subject companies to provide investment banking, market-making or other financial services as are permitted under applicable laws and regulations.

No part of this document may be copied or reproduced in any manner or form or redistributed or published, in whole or in part, without the prior written consent of Mirae Asset Daewoo.

#### **Distribution**

**United Kingdom:** This report is being distributed by Mirae Asset Securities (UK) Ltd. in the United Kingdom only to (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "Order"), and (ii) high net worth companies and other persons to whom it may lawfully be communicated, falling within Article 49(2)(A) to (E) of the Order (all such persons together being referred to as "Relevant Persons"). This report is directed only at Relevant Persons. Any person who is not a Relevant Person should not act or rely on this report or any of its contents.

**United States:** This report is distributed in the U.S. by Mirae Asset Securities (USA) Inc., a member of FINRA/SIPC, and is only intended for major institutional investors as defined in Rule 15a-6(b)(4) under the U.S. Securities Exchange Act of 1934. All U.S. persons that receive this document by their acceptance thereof represent and warrant that they are a major institutional investor and have not received this report under any express or implied understanding that they will direct commission income to Mirae Asset Daewoo or its affiliates. Any U.S. recipient of this document wishing to effect a transaction in any securities discussed herein should contact and place orders with Mirae Asset Securities (USA) Inc., which accepts responsibility for the contents of this report in the U.S. The securities described in this report may not have been registered under the U.S. Securities Act of 1933, as amended, and, in such case, may not be offered or sold in the U.S. or to U.S. persons absent registration or an applicable exemption from the registration requirements.

**Hong Kong:** This document has been approved for distribution in Hong Kong by Mirae Asset Securities (HK) Ltd., which is regulated by the Hong Kong Securities and Futures Commission. The contents of this report have not been reviewed by any regulatory authority in Hong Kong. This report is for distribution only to professional investors within the meaning of Part I of Schedule 1 to the Securities and Futures Ordinance of Hong Kong (Cap. 571, Laws of Hong Kong) and any rules made thereunder and may not be redistributed in whole or in part in Hong Kong to any person.

**All Other Jurisdictions:** Customers in all other countries who wish to effect a transaction in any securities referenced in this report should contact Mirae Asset Daewoo or its affiliates only if distribution to or use by such customer of this report would not violate applicable laws and regulations and not subject Mirae Asset Daewoo and its affiliates to any registration or licensing requirement within such jurisdiction.

## Mirae Asset Daewoo International Network

---

### Mirae Asset Daewoo Co., Ltd. (Seoul)

Global Equity Sales Team  
Mirae Asset Center 1 Building  
26 Eulji-ro 5-gil, Jung-gu, Seoul 04539  
Korea

Tel: 82-2-3774-2124

---

### Mirae Asset Securities (USA) Inc.

810 Seventh Avenue, 37th Floor  
New York, NY 10019  
USA

Tel: 1-212-407-1000

---

### PT. Mirae Asset Sekuritas Indonesia

Equity Tower Building Lt. 50  
Sudirman Central Business District  
Jl. Jend. Sudirman, Kav. 52-53 Jakarta Selatan  
12190  
Indonesia

Tel: 62-21-515-3281

---

### Mirae Asset Securities Mongolia UTsk LLC

#406, Blue Sky Tower, Peace Avenue 17  
1 Khoroo, Sukhbaatar District  
Ulaanbaatar 14240  
Mongolia

Tel: 976-7011-0806

---

### Shanghai Representative Office

38T31, 38F, Shanghai World Financial Center  
100 Century Avenue, Pudong New Area  
Shanghai 200120  
China

Tel: 86-21-5013-6392

---

### Mirae Asset Securities (HK) Ltd.

Suites 1109-1114, 11th Floor  
Two International Finance Centre  
8 Finance Street, Central  
Hong Kong  
China

Tel: 852-2845-6332

---

### Mirae Asset Wealth Management (USA) Inc.

555 S. Flower Street, Suite 4410,  
Los Angeles, California 90071  
USA

Tel: 1-213-262-3807

---

### Mirae Asset Securities (Singapore) Pte. Ltd.

6 Battery Road, #11-01  
Singapore 049909  
Republic of Singapore

Tel: 65-6671-9845

---

### Mirae Asset Investment Advisory (Beijing) Co., Ltd

2401B, 24th Floor, East Tower, Twin Towers  
B12 Jianguomenwai Avenue, Chaoyang District  
Beijing 100022  
China

Tel: 86-10-6567-9699

---

### Ho Chi Minh Representative Office

7F, Saigon Royal Building  
91 Pasteur St.  
District 1, Ben Nghe Ward, Ho Chi Minh City  
Vietnam

Tel: 84-8-3910-7715

---

### Mirae Asset Securities (UK) Ltd.

41st Floor, Tower 42  
25 Old Broad Street,  
London EC2N 1HQ  
United Kingdom

Tel: 44-20-7982-8000

---

### Mirae Asset Wealth Management (Brazil) CCTVM

Rua Funchal, 418, 18th Floor, E-Tower Building  
Vila Olimpia  
Sao Paulo - SP  
04551-060  
Brasil

Tel: 55-11-2789-2100

---

### Mirae Asset Securities (Vietnam) LLC

7F, Saigon Royal Building  
91 Pasteur St.  
District 1, Ben Nghe Ward, Ho Chi Minh City  
Vietnam

Tel: 84-8-3911-0633 (ext.110)

---

### Beijing Representative Office

2401A, 24th Floor, East Tower, Twin Towers  
B12 Jianguomenwai Avenue, Chaoyang District  
Beijing 100022  
China

Tel: 86-10-6567-9699 (ext. 3300)

---