MILLIMAN REPORT

2018 Mid-Year Embedded Value Results: Asia (excl. Japan)

December 2018

Prepared by: Paul Sinnott Michael Daly Richard Holloway Wing Wong Shamit Gupta Sanket Kawatkar





Table of Contents

OPENING REMARKS	1
INTRODUCTION AND BACKGROUND	
EMBEDDED VALUE RESULTS	
VALUE OF NEW BUSINESS RESULTS	
NEW BUSINESS MARGIN RESULTS	
RISK DISCOUNT RATE AND INVESTMENT RETURN ASSUMPTIONS	
APPENDIX A: TOTAL ASIAN EV BY COMPANY BY TERRITORY	15
APPENDIX B: TOTAL ASIAN ANW AND VIF BY COMPANY BY TERRITORY	16

Opening remarks

We are pleased to present our Asian embedded value mid-year 2018 update. This report supplements the '2017 Embedded Value Results: Asia (excl. Japan)' report, which was released in September 2018, and provides a summary of the mid-year 2018 embedded value ('EV') results disclosed by Asian insurers. An update of the Indian section of our full-year report is also included to incorporate results that emerged more recently, as a result of the market's March financial year-end.

Most companies in the region have experienced steady growth in EV in the first half of the year, although the growth rates are somewhat lower than those experienced in the first half of last year. Value of New Business ('VNB') results continue to grow strongly in many Asian markets, as insurers enhance their product mix and refine their business strategies. Some insurers in China and India have successfully grown their VNB by enhancing the focus on higher-margin protection-oriented product sales, whereas insurers in Hong Kong and Singapore have improved their VNB via distribution efficiencies. Bond yields increased in most markets but equity markets experienced significant volatility, amid trade tensions between economies worldwide.

Best regards,

Paul Sinnott Michael Daly Richard Holloway Wing Wong Shamit Gupta Sanket Kawatkar

Introduction and background

Amid growing trade tensions between China and the United States, the Asian equity markets have experienced significant volatility of returns over the past year (see Figure 1). Equity indices in China have reduced since June 2017 and the country's central bank resorted to easing monetary policy in order to support its economy. India led equity market gains across Asia,¹ touching its highest index value since its inception but seeing a major decline thereafter. The other markets in Asia experienced small to moderate growth in their respective equity indices.

Rising Asian equity markets tend to have positive impacts on the life insurance industry, typically improving insurers' investment results and the performance of unit-linked and participating lines of business. An opposite effect is typically experienced in falling markets.

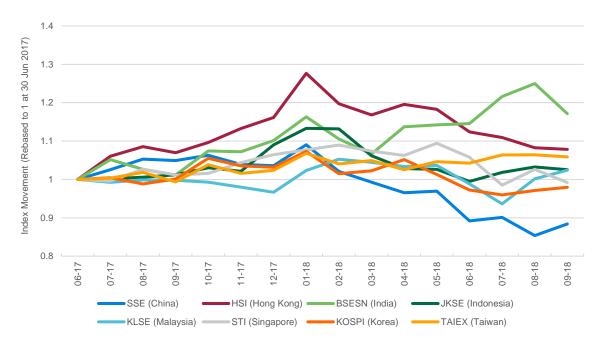


FIGURE 1: RECENT EQUITY MARKET PERFORMANCE: GROWTH OF MAJOR EQUITY INDICES^{2,3} FROM 30 JUNE 2017 TO 30 SEPTEMBER 2018

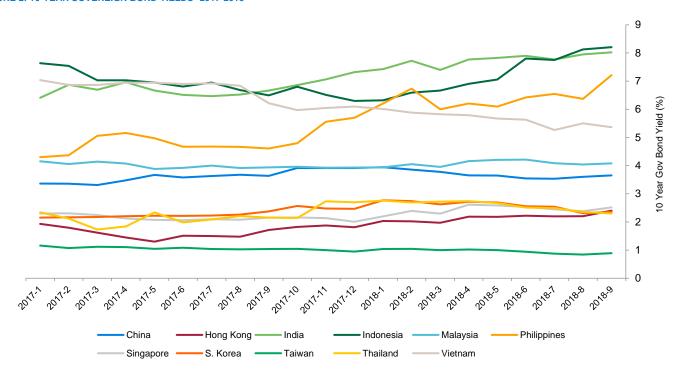
Other than South Korea, Taiwan and Vietnam, which have seen a decline in interest rates, yield curves in the other Asian markets have risen (as can be seen in Figure 2). The impact of changing interest rates on EV results depends upon the methodology adopted, the assumptions used and the type of business written by the company. Under a market-consistent EV (MCEV) or Indian EV (IEV) frameworks, a lower interest rate might lead to an increase in the MCEV or IEV if a company writes more unit-linked business (due to the uplift in starting asset values and discounting of future profits at a lower interest rate) or protection-oriented business (due to unrealised gains on starting assets and discounting of future profits at a lower interest rate), while the opposite might be true for a company that writes more traditional savings-oriented business (due to lower investment margins). Under a traditional EV (TEV) framework, the impact of changing interest rates also depends upon whether a company opts to alter its long-term investment return assumptions in line with the change in interest rates. If a company does not change its long-term investment return assumption, it may lead to counterintuitive results, such as declining interest rates leading to higher EV.

¹ Asian markets which are considered for this report are China, Hong Kong, India, Indonesia, Malaysia, Singapore, South Korea and Taiwan.

² The following stock indices have been used for each country: China: Shanghai Stock Exchange Composite Index; Hong Kong: Hang Seng Index; India: Bombay Stock Exchange 30; Indonesia: Jakarta Composite; Malaysia: Kuala Lumpur Stock Exchange Composite Index; Singapore: Straits Times Index; South Korea: Korea Composite Index; Taiwan: Taiwan Weighted Index.

³ Source: Yahoo Finance and SNL Financial.

FIGURE 2: 10-YEAR SOVEREIGN BOND YIELDS⁴ 2017-2018

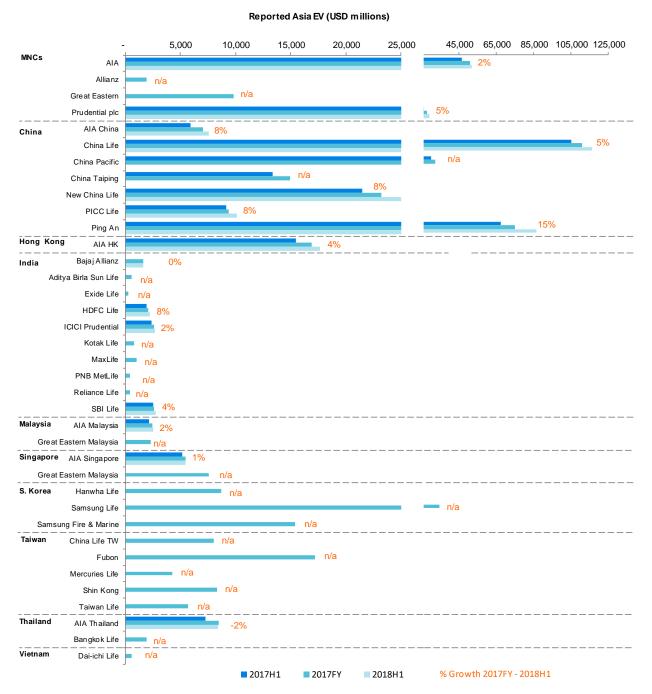


⁴ Source: Investing.com.

Embedded value results

The chart in Figure 3 compares the EV results by company within the different Asian markets over the period 2017H1 to 2018H1. It includes those companies that have reported their mid-year EV results over the coverage period of this report. Figure 3 also includes the full-year results for all Indian companies, as the Indian financial year runs from April to March, and the results for some companies were not published in time for our year-end EV report '2017 Embedded Value Results: Asia (excl. Japan)'.

FIGURE 3: ASIAN LIFE INSURANCE COVERED BUSINESS EV BY COMPANY^{5,6,7,8} 2017H1 TO 2018H1



Note: "n/a" implies that the company has not disclosed its 2018H1 EV results at the time of writing this report.

⁵ The EV results for each company have been converted to USD at the foreign exchange (FX) rates prevailing as at their 2018H1 reporting dates to remove most of the effect of currency fluctuations.

⁶ In this table, FY2017 for Indian insurers represents the financial year ending 31 March 2018; 2017H1 and 2018H1 represent the mid-year ending 30 September 2017 and 30 September 2018, respectively.

⁷ Please note that for AIA, we have used the EV after the inclusion of pension liabilities.

⁸ In February 2018, AIA Group changed the company's financial year-end date from 30 November to 31 December. For the purposes of this report, we have included AIA's results as at 31 December 2017 for FY2017 and 30 June 2018 for 2018H1. 2017H1 represents AIA's results as at 31 May 2017.

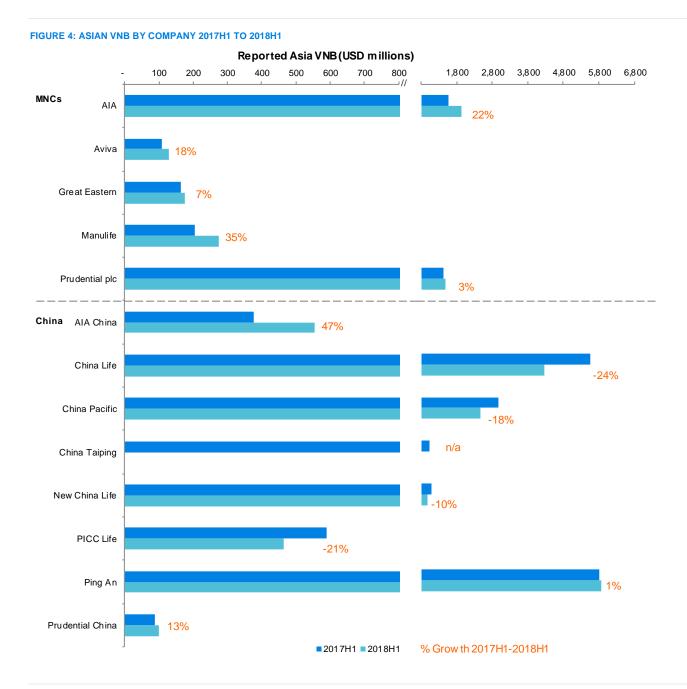
Overall, most markets have reported small positive gains in 2018H1. AIA Thailand was the only exception with a fall of 2%. Ping An recorded the highest growth of 15%.

Excluding AIA's Thai business, all its other Asian operations recorded a single-digit EV growth. AIA has attributed the growth in its EV to profitable new business growth and disciplined management of its insurance block. The company also highlighted the success of its 'Premier Agency Strategy' as a key factor. Agency distribution remains AIA's main source of new business. It accounted for 71% of the Group's total VNB in the first half of 2018.

Ping An attributed its growth in EV to increased sales of high profit margin, long-term protection products, and growth in its new business premiums from its agency channel. HDFC Life stated that its 8% growth was mainly due to a balanced product mix with focus on protection business, diversified distribution, and its strong presence across India.

Value of new business results

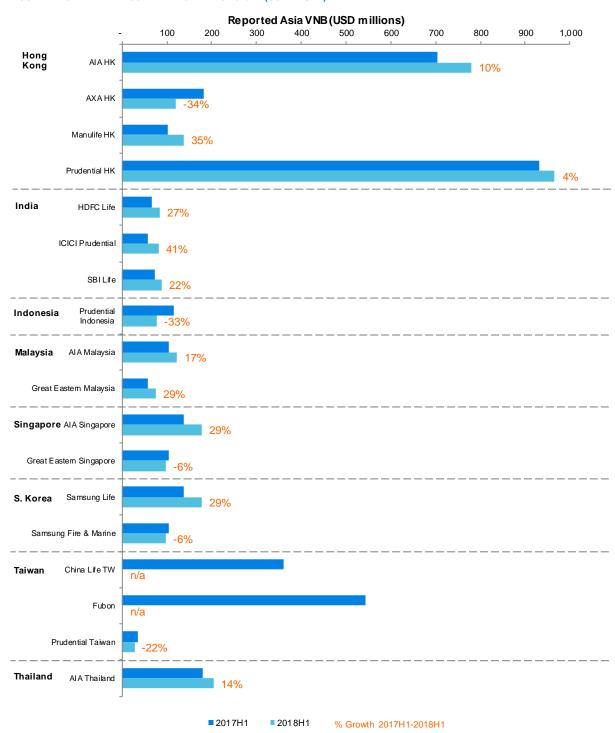
The chart in Figure 4 compares the VNB results by company within the different Asian markets over the period 2017H1 to 2018H1.9,10



⁹ For Indian insurers, the middle of the financial year (i.e. H1) falls on 30 September. For all other insurers considered in this report, including AIA, the corresponding date is 30 June.

¹⁰ We have excluded those companies that have not reported 2017H1 and 2018H1 VNB.

FIGURE 4: ASIAN VNB BY COMPANY 2017H1 TO 2018H1 (CONTINUED)



Among the multinational corporations (MNCs), Manulife reported the strongest VNB growth of 35%, but this was for its Hong Kong operation only rather than for the whole Asia region. AlA's Asian operations reported VNB growth of 22%, mainly due to the performance of its agency distribution channel. Aviva has also shown a significant growth in VNB of 18%, mainly due to increased sales of protection business.

In China, several insurers reported a fall in VNB, largely due to a reduction in new business volumes, which may be linked to the regulator restricting sales of short-medium term universal life products. China Pacific attributed a decline of 18% in its VNB to a shift in its strategic focus towards improving its business mix. New China Life attributed its negative VNB growth to the optimisation of its business structure and its plan to focus on longer-term business. Bucking the trend, AlA's China operations reported a 47% increase in VNB, making it the Group's fastest growing business, by VNB, in the first half of 2018. The company continues to achieve high sales volumes by focusing on ongoing agency productivity enhancements.

MILLIMAN REPORT

AIA Hong Kong's VNB growth of 10% was driven by a strong performance of its agency and bancassurance channels and increased sales of high-margin products. Prudential plc ('Prudential') attributed its VNB growth of 4% to the successful launch of its new higher profit margin critical illness product. Sales from health and protection business have enabled the company to achieve positive VNB growth even in the face of reducing sales volumes. Mainland Chinese visitor sales continue to play a significant role in the Hong Kong life insurance market, despite efforts by the Chinese government to control capital outflows. Insurers in Hong Kong claim that the greater variety and flexibility of policies available in Hong Kong is the main driver for Mainland Chinese visitor sales in Hong Kong.

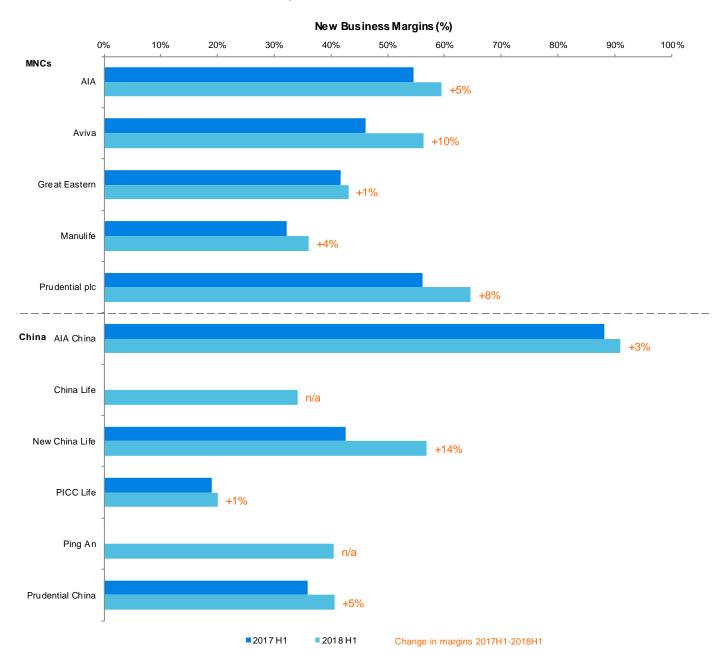
Insurers in India reported significant increases in VNB. ICICI Prudential and HDFC Life both reported a growth in VNB and attributed the growth to increased sales of protection business.

Prudential Indonesia reported a large fall in VNB as its agency-dominated distribution continues to experience challenging conditions to achieve growth in new business volumes.

In South Korea, Samsung Life's VNB expansion was driven by continued growth in annual premium equivalent (APE) from protection business. AIA Singapore attributed its strong growth in VNB to improved productivity levels of its agency channel.

New business margin results

FIGURE 5: IMPLIED NEW BUSINESS MARGINS BY COMPANY,11,12,13 FOR 2017H1 AND 2018H1



¹¹ For the MNCs, please note that these are the margins relating to their Asian business, excluding Japan.

¹² New business margin is defined as VNB divided by annual premium equivalent (APE).

¹³ We have excluded those companies that have not reported 2017H1 and 2018H1 new business margins.

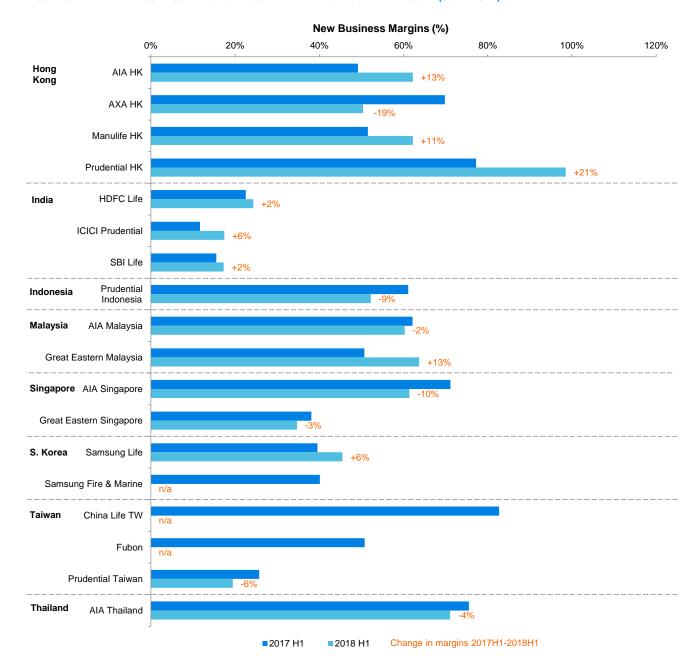


FIGURE 5 IMPLIED NEW BUSINESS MARGINS BY COMPANY^{11,12,13} FOR 2017H1 AND 2018H1 (CONTINUED)

Between the first half of 2017 and the first half of 2018, changes in new business (NB) margins were varied. Most insurers across Asia reported an increase in new business margins, whereas some reported a decrease.

The biggest growth in new business margins (in relative terms) came from:

- Prudential Hong Kong, for which margins increased from 77% to 99%
- New China Life, for which margins increased from 43% to 57%
- AIA Hong Kong, for which margins increased from 49% to 62%
- Great Eastern Malaysia for which, margins increased from 51% to 64%

In contrast, the largest decline in new business margin came from AXA Hong Kong, for which, margins fell from 70% to 50%. AIA Singapore also saw a decline in new business margin, from 71% to 61%. The insurer attributed this decline to lower profitability from its health business and a shift in product mix.

Disclosure of Indian Results, 2015-2017¹⁴

FIGURE 6: DISCLOSURE OF INDIAN RESULTS, 2015-2017

FIGURE 6.1: REPORTED EV OF INDIAN INSURANCE OPERATIONS, 2015-2017

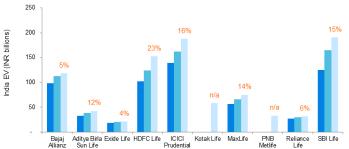
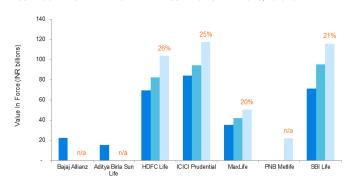


FIGURE 6.3: REPORTED VIF OF INDIAN INSURANCE OPERATIONS, 2015-2017



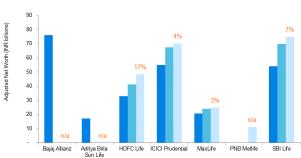


FIGURE 6.2: REPORTED ANW OF INDIAN INSURANCE OPERATIONS, 2015-2017

FIGURE 6.4: REPORTED VIF/ANW SPLIT OF INDIAN INSURANCE OPERATIONS, 2017

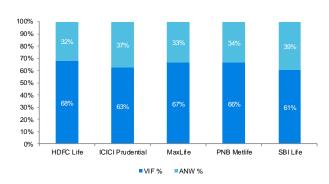


FIGURE 6.5: REPORTED VNB¹⁵ OF INDIAN INSURANCE OPERATIONS, 2015-2017

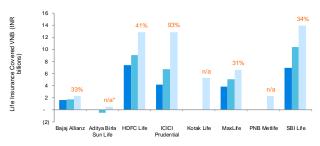


FIGURE 6.6: REPORTED APE OF INDIAN INSURANCE OPERATIONS, 2015-2017

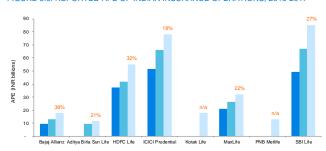
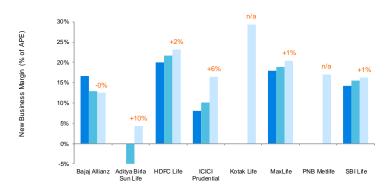


FIGURE 6.7: REPORTED NEW BUSINESS MARGIN OF INDIAN INSURANCE OPERATIONS, 2015-2017





1 Year Growth % for year ending Mar 18

Change in margins for year ending Mar 18

Note: In Figures 6.2 and 6.3, Exide Life, Kotak Life and Reliance Life are excluded as they did not disclose the split between adjusted net worth (ANW) and value in-force (VIF) at the time of writing this report.

In Figure 6.4, we have excluded the companies that did not provide the EV split between ANW and VIF for 2017.

In Figure 6.6, Exide Life and Reliance Life are excluded as they did not disclose APE for either 2015, 2016 or 2017.

¹⁴ In this section, 2015, 2016 and 2017 for Indian insurers represents the financial year ending 31 March 2016, 31 March 2017 and 31 March 2018 respectively.

¹⁵ VNB and new business margin are all post-expense overrun, except for Bajaj Allianz, for which, no overrun information was provided.

MILLIMAN REPORT

While Indian insurers continue to show a gradual convergence of methodologies, they have also started disclosing their EV information regularly. This section is an update to the 'Detailed market analysis' for India, which was released as part of our '2017 EV results: Asia (excl. Japan)' report in September 2018. As the Indian financial year runs from April to March, the results for some companies were not published in time for our year-end EV report '2017 Embedded Value Results: Asia (excl. Japan).'

Following in the footsteps of ICICI Prudential, HDFC Life and SBI Life, PNB MetLife has also filed for an initial public offering ("IPO"). PNB MetLife has released a draft red herring prospectus ('DRHP') in connection with its proposed IPO. This is the first public disclosure of the company's EV and VNB results. The actuarial disclosures by PNB MetLife within its IPO process are stated to have been prepared using an Indian Embedded Value methodology, in accordance with the local Actuarial Practice Standard 10.

Reported NB margins for FY2017 are in the range of 4% to 30% after allowing for the impact of acquisition expense overruns. Reliance Life does not disclose any expense overrun information in its VNB disclosures. As we have only shown post-overrun NB margins in the charts above, we have excluded the disclosures for this company. The NB margin declared by Reliance Life was 38% for FY2017-18.

Amongst Indian insurers that publish their VNB results, there is a clear shift towards writing greater volumes of protection-oriented business, with a view to increasing their NB margins.

Risk discount rate and investment return assumptions

The risk discount rate and investment return assumptions of the insurers in Asia that report embedded value results are listed in Figures 7 and 8.

E C	OMPANY	EV PRINCIPLE	RISK DISCOUNT RATE	INVESTMENT RETURNS ¹⁶				
s Al	IA	TEV	China: 9.75%	China: Equities 9.30%, 10Y Gov't Bonds 3.70%				
			Hong Kong: 7.30%	Hong Kong: Equities 7.60%, 10Y Gov't Bonds 2.80%				
			Indonesia: 13.00%	Indonesia: Equities 12.00%, 10Y Gov't Bonds 7.50%				
			Korea: 8.60%	Korea: Equities 7.20%, 10Y Gov't Bonds 2.70%				
			Malaysia: 8.75%	Malaysia: Equities 8.80%, 10Y Gov't Bonds 4.20%				
			Philippines (Philam Life): 11.30%	Philam Life: Equities 10.00%, 10Y Gov't Bonds 4.80%				
			Singapore: 6.90%	Singapore: Equities 7.00%, 10Y Gov't Bonds 2.50%				
			Sri Lanka: 15.70%	Sri Lanka: Equities 12.00%, 10Y Gov't Bonds 10.00%				
			Taiwan: 7.85%	Taiwan: Equities 6.60%, 10Y Gov't Bonds 1.60%				
			Thailand: 8.60%	Thailand: Equities 9.00%, 10Y Gov't Bonds 3.20%				
			Vietnam: 12.30%	Vietnam: Equities 11.80%, 10Y Gov't Bonds 6.50%				
All	llianz	MCEV / SII	Swap rates, allowing for credit risk adjustment and volatility adjustment	Swap rates, allowing for credit risk adjustment and volatilit adjustment				
Av	viva	SII	Risk-free interest rate curves, allowing for credit risk adjustment, volatility adjustment and matching adjustment.	Risk-free interest rate curves, allowing for credit risk adjustment, volatility adjustment and matching adjustment				
A	XA	EEV	Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment.	Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment.				
	reat astern	TEV	Singapore: 7.00% Malaysia: 8.75%	Not disclosed				
Ma	lanulife	TEV	Hong Kong: 9.50%	Hong Kong: Equity 10.00%, 10Y Gov't Bonds (immediate to 30 years in future) 1.81% to 3.43%				
Pr	rudential plc	EEV	China: 9.3% (NB), 9.3% (IF) Hong Kong: 4.3% (NB), 4.4% (IF)	China: 10Y Gov't Bonds 3.5% Hong Kong: 10Y Gov't Bonds 2.9%, Equities 6.9%				
			Indonesia: 12.1% (NB), 12.1% (IF)	Indonesia: 10Y Gov't Bonds 7.9%				
			Malaysia: 6.8% (NB), 6.8% (IF)	Malaysia: 10Y Gov't Bonds 4.2%, Equities 10.7%				
			Philippines: 14.1% (NB), 14.1% (IF)	Philippines: 10Y Gov't Bonds 6.6%				
			Singapore: 3.9% (NB), 4.9% (IF)	Singapore: 10Y Gov't Bonds 2.6%, Equities 9.1%				
			Taiwan: 4.5% (NB), 4.0% (IF)	Taiwan: 10Y Gov't Bonds 0.9%				
			Thailand: 10.1% (NB), 10.1% (IF)	Thailand: 10Y Gov't Bonds 2.6%				
			Vietnam: 12.2% (NB), 12.2% (IF)	Vietnam: 10Y Gov't Bonds 4.7%				
Zu	urich	MCEV	Swap rates, allowing for volatility	Swap rates, allowing for volatility adjustment				

Note: Blue shaded entries indicate that the 2018H1 EV assumptions for the company have not yet been disclosed, thus the stated assumptions have been based on FY2017 disclosures instead

¹⁶ Note that, for AIA and Prudential, investment return assumptions in Figure 7 are long-term assumptions.

AIA TEV 0.76% Equities 9.30%, 10V Gov's Bonds 3.70% China Life TEV 10.00% Assumed to be 0% China TEV 11.00% Long-term business: Leader in the latest 1-year bank deposit base rat Facility Taiping China TEV 11.00% Assumed to be 4.80% with an increase and following the latest 1-year bank deposit base rat Faiping New China TEV 11.60% Vear 1-4.69% (monlinked), 70% (universal life), 7.60% (inched) Vear 2-4.40% (monlinked), 470% (universal life), 7.60% (inched) Vear 2-4.40% (monlinked), 470% (universal life), 7.60% (inched) Vear 3-4.80% (inche	COUNTRY	COMPANY	EV PRINCIPLE	RISK DISCOUNT RATE	MARKET INVESTMENT RETURNS							
China Life TEV 10.00% Assumed to be 5% Assumed to be 5% Assumed to be 5% Assumed to be 5% British TEV 11.00% Long-term business: 4.00% in Year 1 and 5.00% thereafter Short-term business: 4.00% in Year 1 and 5.00% thereafter Short-term business: 4.00% in Year 1 and 5.00% thereafter Tevel 11.00% Assumed to be 4.80% with an increase of 0.05% annually up to 5.00 Year 2: 4.60% (non-linked), 7.60% (linked) Year 2: 4.60% (l	China	Chinese 10-y	Chinese 10-year government bond yield at 30 June 2018: 3.54%									
China TEV		AIA	TEV	9.75%	Equities 9.30%, 10Y Gov't Bonds 3.70%							
Pocific China TEV 11.00% Assumed to be 4.00% with an increase of 0.05% annually up to 5.00 Taping TEV 11.00% Assumed to be 4.00% with an increase of 0.05% annually up to 5.00 Taping TEV 11.50% Year 1: 4.50% (non-linked), 7.00% (inneed) TEV 10.00% Year 3: 4.80% (non-linked), 4.70% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 4.70% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 4.70% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 5.10% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 5.10% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 5.10% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 5.10% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 5.10% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 5.10% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 5.10% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 5.10% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 5.10% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 5.10% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 5.10% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 5.10% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 5.10% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 5.10% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 5.10% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 5.10% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 5.10% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 5.10% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 5.10% (universal life), 7.80% (inked) Year 3: 4.80% (non-linked), 5.10% (inked) Year 3: 4.8		China Life	TEV	10.00%	Assumed to be 5%							
Taiping New China TEV			TEV	11.00%	Long-term business: 4.90% in Year 1 and 5.00% thereafter Short-term business: based on the latest 1-year bank deposit base rate							
Life			TEV	11.00%	Assumed to be 4.80% with an increase of 0.05% annually up to 5.00							
Ping An TEV 11.00% Non-investment-linked: 4.75% in Year 1, increase to 5.00% in Year and remains constant forever. Investment-linked: slightly higher than non-investment-linked finestensived: slightly higher than non-investment-linked finestensived			TEV	11.50%	Year 2: 4.60% (non-linked), 4.70% (universal life), 7.60% (linked) Year 3: 4.80% (non-linked), 5.00% (universal life), 7.80% (linked)							
Hong Kong Hong Kong 10-year government bond yield at 30 June 2018: 2.22% Ala TEV 7.30% Equities 7.60%, 10Y Gov1 Bonds 2.80% Ala TEV 7.30% Equities 7.60%, 10Y Gov1 Bonds 2.80% Ala TEV 7.30% Equities 7.60%, 10Y Gov1 Bonds 2.80% Ala TEV 8.36% (NB) 4.4% (IF) Hong Kong: 9.50% Hong Kong: Equity 10.00%, 10Y Gov1 Bonds (immediate to 30 year in future) 1.81% to 3.43% Prudential EEV 4.3% (NB) 4.4% (IF) Mean equity return 6.90%, 10Y Gov1 Bonds (immediate to 30 year in future) 1.81% to 3.43% Indian 10-year government bond yield at 30 September 2018: 8.02% Aliqua Birla Sun Life W Not disclosed Not disclosed Not disclosed Fixed Life MCEV Not disclosed No		PICC Life	TEV	10.00%	5.25%							
Hong Kong 10-year government bond yield at 30 June 2018: 2.22% AIA TEV 7.30% Equities 7.60%, 10Y Gov1 Bonds 2.80% AXA EEV Creatirisk adjustment and volatility adjustment. Manulife TEV Hong Kong: 9.50% Prudential EEV 4.3% (NB), 4.4% (IF) Hong Kong: Equity 10.00%, 10Y Gov1 Bonds (immediate to 30 year in future) 1.81% to 3.43% Prudential EEV A.3% (NB), 4.4% (IF) Mean equity return 6.90%, 10Y Gov1 Bonds (immediate to 30 year in future) 1.81% to 3.43% Bajaj Allianz IEV Not reviewed) Risk-free yield curve Risk-free yield curve Adity Birlia Sun Life EV Not disclosed Not disclosed HDFC Life IEV Risk-free yield curve Risk-free yield curve Prudential ROCEV Not disclosed Not disclosed Not disclosed Not disclosed Not disclosed Not disclosed Not disclosed Not disclosed Not d		Ping An	TEV	11.00%								
AIA TEV 7.30% Equities 7.60%, 10Y Gov't Bonds 2.80% AXA EEV Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment. Manulife TEV Hong Kong: 9.50% Risk-free interest rate curves, allowing for credit risk adjustment. Manulife TEV Hong Kong: 9.50% Hong Kong: Equity 10.00%, 10Y Gov't Bonds (immediate to 30 year in future) 1.81% to 3.43% Prudential EEV 4.3% (NB), 4.4% (IF) Mean equity return 6.90%, 10Y Gov't Bonds 2.90% Indian 10-year government bond yield at 30 September 2018: 8.02% Aditya Birla IEV (not reviewed) Risk-free yield curve Risk-free yield curve Aditya Birla IEV Not disclosed Not disclosed McEV Not disclosed Not disclosed McEV Risk-free yield curve Risk-free yield curve Risk-free yield curve Risk-free yield curve [CICI IEV Risk-free yield curve [CICI IEV Not disclosed Not disclosed Not disclosed Max Life MCEV Not disclosed Not disclosed Max Life MCEV Not disclosed Not disclosed AlA TEV 13.00% Equities 12.00%, 10Y Gov't Bonds 7.50% AlA TEV 8.75% Equities 8.80%, 10Y Gov't Bonds 4.20% Prudential EEV 8.75% Equities 10.7%, 10Y Gov't Bonds 4.20% Pridential EEV 6.80% Equities 10.70%, 10Y Gov't Bonds 4.20% Philippines Philippines 10-year government bond yield at 30 June 2018: 6.42% AlA TEV 11.30% Equities 10.00%, 10Y Gov't Bonds 4.80%		Prudential	EEV	9.30%	10Y Gov't Bonds 3.50%							
AXA EEV Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment. Manulife TEV Hong Kong: 9.50% In Hong Kong: Equity 10.00%, 10Y Gov't Bonds (Immediate to 30 year in future) 1.81% to 3.43%. Prudential EEV 4.3% (NB), 4.4% (IF) Mean equity return 6.90%, 10Y Gov't Bonds 2.90% Bajaj Allianz IEV (not reviewed) Risk-free yield curve Risk-free yield curve Aditya Birla LEV Not disclosed Not disclosed HDFC Life IEV Risk-free yield curve Risk-free yield curve Risk-free yield curve CICI IEV Risk-free yield curve Risk-free yield curve Risk-free yield curve Risk-free yield curve Max Life MCEV Not disclosed Not disclosed Max Life IEV Not disclosed Not disclosed Max Life MCEV Not disclosed Not disclosed Max Life IEV Not disclosed Not disclosed Mot Disclosed Not disclosed Not disclosed Not disclosed Not disclosed Not disclosed Not disclosed Not disclosed Not disclosed Not disclosed Not disclosed AIA TEV 13.00% Equities 12.00%, 10Y Gov't Bonds 7.50% 10Y Gov't Bonds 7.50% AIA TEV 8.75% Equities 8.80%, 10Y Gov't Bonds 4.20% Prudential EEV 8.75% Equities 10.00%, 10Y Gov't Bonds 4.20% Prudential EEV 6.80% Equities 10.00%, 10Y Gov't Bonds 4.20% Philippines Philippines 10-year government bond yield at 30 June 2018: 6.42% AIA TEV 11.30% Equities 10.00%, 10Y Gov't Bonds 4.20%	Hong Kong	Hong Kong 1	0-year government bond yield a	t 30 June 2018: 2.22%								
curves, allowing for credit risk allowisment. Manulife TEV Hong Kong: 9.50% In future) 1.81% to 3.43% Prudential EEV 4.3% (NB), 4.4% (IF) Mean equity return 6.90%, 10Y Gov't Bonds (immediate to 30 year in future) 1.81% to 3.43% Indian 10-year government bond yield at 30 September 2018: 8.02% Bajaj Allianz IEV (not reviewed) Risk-free yield curve Risk-free yield curve Aditya Birla Sun Life Exide Life MCEV Not disclosed Not disclosed HDFC Life IEV Risk-free yield curve Risk-free yield curve ICICI IEV Risk-free yield curve Risk-free yield curve ICICI IEV Risk-free yield curve Risk-free yield curve Rotak Life IEV Not disclosed Not disclosed Max Life MCEV Not disclosed Not disclosed Max Life IEV Not disclosed Not disclosed Reliance TEV Not disclosed Indonesian 10-year government bond yield at 30 June 2018: 7.80% AlA TEV 13.00% Equities 12.00%, 10Y Gov't Bonds 7.50% Indonesian Indonesian 10-year government bond yield at 30 June 2018: 4.21% Prudential EEV 8.75% Equities 8.80%, 10Y Gov't Bonds 4.20% Prudential EEV 6.80% Equities 10.70%, 10Y Gov't Bonds 4.20% Prudential EEV 6.80% Equities 10.70%, 10Y Gov't Bonds 4.20% Prudential EEV 6.80% Equities 10.00%, 10Y Gov't Bonds 4.20%		AIA	TEV	7.30%	Equities 7.60%, 10Y Gov't Bonds 2.80%							
Prudential EEV 4.3% (NB), 4.4% (IF) Mean equity return 6.90%, 10Y Gov't Bonds 2.90% Indian 10-year government bond yield at 30 September 2018: 8.02% Bajaj Allianz IEV (not reviewed) Risk-free yield curve Risk-free yield curve Aditya Birla JEV Not disclosed Not disclosed Fixide Life MCEV Not disclosed Not disclosed HDFC Life IEV Risk-free yield curve Risk-free yield curve ICICI IEV Risk-free yield curve Risk-free yield curve Prudential IEV Not disclosed Not disclosed Not disclosed Not disclosed Not disclosed Not disclosed Not disclosed Not disclosed Not disclosed Not disclosed Not disclosed Reliance TEV Not disclosed Not disclosed Reliance TEV Risk-free yield curve Risk-free yield curve Indonesia Indonesian 10-year government bond yield at 30 June 2018: 7.80% AIA TEV 13.00% Equities 12.00%, 10Y Gov't Bonds 7.50% Prudential EEV 8.75% Dequities 8.80%, 10Y Gov't Bonds 4.20% Prudential EEV 6.80% Equities 8.00%, 10Y Gov't Bonds 4.20% Prudential EEV 6.80% Equities 10.00%, 10Y Gov't Bonds 4.20% Prudential EEV 6.80% Equities 10.00%, 10Y Gov't Bonds 4.20% Prudential EEV 6.80% Equities 10.07%, 10Y Gov't Bonds 4.20% Prudential EEV 6.80% Equities 10.07%, 10Y Gov't Bonds 4.20% Pridential EEV 6.80% Equities 10.07%, 10Y Gov't Bonds 4.20% Pridential EEV 6.80% Equities 10.07%, 10Y Gov't Bonds 4.20% Pridential EEV 6.80% Equities 10.07%, 10Y Gov't Bonds 4.20% Pridential EEV 6.80% Equities 10.07%, 10Y Gov't Bonds 4.20% Pridential EEV 6.80% Equities 10.07%, 10Y Gov't Bonds 4.20% Pridential EEV 6.80% Equities 10.00%, 10Y Gov't Bonds 4.20%		AXA	EEV	curves, allowing for credit risk adjustment	Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment.							
India Indian 10-year government bond yield at 30 September 2018: 8.02% Bajaj Allianz IEV (not reviewed) Risk-free yield curve Risk-free yield curve Aditya Birla Sun Life Exide Life MCEV Not disclosed Not disclosed HDFC Life IEV Risk-free yield curve Risk-free yield curve ICICI IEV Risk-free yield curve Ri		Manulife	TEV	Hong Kong: 9.50%	Hong Kong: Equity 10.00%, 10Y Gov't Bonds (immediate to 30 years in future) 1.81% to 3.43%							
Bajaj Alianz IEV (not reviewed) Risk-free yield curve Risk-free yield curve Aditya Birla Sun Life Exide Life MCEV Not disclosed Not disclosed HDFC Life IEV Risk-free yield curve Risk-free yield curve ICICI IEV Risk-free yield curve Risk-free yield curve Prudential Kotak Life IEV Not disclosed Not disclosed Max Life MCEV Not disclosed Not disclosed Max Life MCEV Not disclosed Not disclosed Reliance TEV Not disclosed Not disclosed Reliance IEV Risk-free yield curve Risk-free yield curve Risk-free yield curve Risk-free yield curve Risk-free yield curve Risk		Prudential	EEV	4.3% (NB), 4.4% (IF)	Mean equity return 6.90%, 10Y Gov't Bonds 2.90%							
Aditya Birla Sun Life Exide Life MCEV Not disclosed Not disclosed HDFC Life IEV Risk-free yield curve Risk-free yield curve ICICI IEV Risk-free yield curve Risk-free yield curve Prudential Kotak Life IEV Not disclosed Not disclosed Max Life MCEV Not disclosed Not disclosed Max Life MCEV Not disclosed Not disclosed Reliance TEV Not disclosed Not disclosed Risk-free yield curve Indonesian 10-year government bond yield at 30 June 2018: 7.80% AIA TEV 13.00% Equities 12.00%, 10Y Gov't Bonds 7.50% Prudential EEV 12.10% 10Y Gov't Bonds 7.90% Malaysian 10-year government bond yield at 30 June 2018: 4.21% AIA TEV 8.75% Equities 8.80%, 10Y Gov't Bonds 4.20% Great TEV 8.75% Equities 10.7%, 10Y Gov't Bonds 4.20% Phillippines Phillippines 10-year government bond yield at 30 June 2018: 6.42% AIA TEV 11.30% Equities 10.00%, 10Y Gov't Bonds 4.80%	India	Indian 10-yea	ar government bond yield at 30 S	September 2018: 8.02%								
Sun Life Exide Life MCEV Not disclosed Not disclosed HDFC Life IEV Risk-free yield curve Risk-free yield curve ICICI IEV Risk-free yield curve Risk-free yield curve Risk-free yield curve Risk-free yield curve Risk-free yield curve Max Life MCEV Not disclosed Not disclosed Max Life MCEV Not disclosed Not disclosed Reliance TEV Not disclosed Not disclosed SBI Life IEV Risk-free yield curve Risk-free yield curve Indonesia Indonesian 10-year government bond yield at 30 June 2018: 7.80% Alia TEV 13.00% Equities 12.00%, 10Y Gov't Bonds 7.50% Prudential EEV 12.10% 10Y Gov't Bonds 7.90% Malaysian 10-year government bond yield at 30 June 2018: 4.21% Alia TEV 8.75% Equities 8.80%, 10Y Gov't Bonds 4.20% Great TEV 8.75% Prudential EEV Rose Rose Equities 10.79%, 10Y Gov't Bonds 4.20% Prudential EEV 6.80% Equities 10.79%, 10Y Gov't Bonds 4.20% Prudential EEV 6.80% Equities 10.79%, 10Y Gov't Bonds 4.20% Prudential EEV 6.80% Equities 10.79%, 10Y Gov't Bonds 4.20% Philippines 10-year government bond yield at 30 June 2018: 6.42% Alia TEV 11.30% Equities 10.00%, 10Y Gov't Bonds 4.80%		Bajaj Allianz	IEV (not reviewed)	Risk-free yield curve	Risk-free yield curve							
HDFC Life IEV Risk-free yield curve Reliance Life MCEV Not disclosed Not disclosed Not disclosed Not disclosed Reliance Life IEV Risk-free yield curve Ris			IEV	Not disclosed	Not disclosed							
CICI IEV Risk-free yield curve Risk-free yield curve		Exide Life		Not disclosed								
Prudential Kotak Life IEV Not disclosed Not disclosed Max Life MCEV Not disclosed Not disclosed Reliance TEV Not disclosed Not disclosed SBI Life IEV Risk-free yield curve Risk-free yield curve Indonesia Indonesian 10-year government bond yield at 30 June 2018: 7.80% AIA TEV 13.00% Equities 12.00%, 10Y Gov't Bonds 7.50% Prudential EEV 12.10% 10Y Gov't Bonds 7.90% Malaysia Malaysian 10-year government bond yield at 30 June 2018: 4.21% AIA TEV 8.75% Equities 8.80%, 10Y Gov't Bonds 4.20% Great TEV 8.75% Equities 8.80%, 10Y Gov't Bonds 4.20% Prudential EEV 6.80% Equities 10.7%, 10Y Gov't Bonds 4.20% Prudential EEV 6.80% Equities 10.7%, 10Y Gov't Bonds 4.20% Philippines Philippines 10-year government bond yield at 30 June 2018: 6.42% AIA TEV 6.80% Equities 10.00%, 10Y Gov't Bonds 4.80%		HDFC Life	IEV	Risk-free yield curve	Risk-free yield curve							
Max Life MCEV Not disclosed Not disclosed Reliance Life TEV Not disclosed Not disclosed Not disclosed Not disclosed Not disclosed Not disclosed Risk-free yield curve Risk-free yield curve Risk-free yield curve Risk-free yield curve AIA TEV 13.00% Equities 12.00%, 10Y Gov't Bonds 7.50% Prudential EEV 12.10% 10Y Gov't Bonds 7.90% Malaysian 10-year government bond yield at 30 June 2018: 4.21% AIA TEV 8.75% Equities 8.80%, 10Y Gov't Bonds 4.20% Great Eastern Prudential EEV 6.80% Equities 10.7%, 10Y Gov't Bonds 4.20% Philippines Philippines 10-year government bond yield at 30 June 2018: 6.42% AIA TEV 6.80% Equities 10.7%, 10Y Gov't Bonds 4.20% Equities 10.7%, 10Y Gov't Bonds 4.20% Equities 10.7%, 10Y Gov't Bonds 4.20% Philippines 10-year government bond yield at 30 June 2018: 6.42% Equities 10.00%, 10Y Gov't Bonds 4.80%			IEV	Risk-free yield curve	Risk-free yield curve							
Reliance Life SBI Life IEV Risk-free yield curve Row table pool of the pool o		Kotak Life	IEV	Not disclosed	Not disclosed							
Life SBI Life IEV Risk-free yield curve Risk		Max Life	MCEV	Not disclosed	Not disclosed							
Indonesia Indonesian 10-year government bond yield at 30 June 2018: 7.80%			TEV	Not disclosed	Not disclosed							
AIA TEV 13.00% Equities 12.00%, 10Y Gov't Bonds 7.50% Prudential EEV 12.10% 10Y Gov't Bonds 7.90% Malaysia 10-year government bond yield at 30 June 2018: 4.21% AIA TEV 8.75% Equities 8.80%, 10Y Gov't Bonds 4.20% Great Eastern Prudential EEV 6.80% Equities 10.7%, 10Y Gov't Bonds 4.20% Philippines 10-year government bond yield at 30 June 2018: 6.42% AIA TEV 11.30% Equities 10.00%, 10Y Gov't Bonds 4.80%		SBI Life	SBI Life IEV Risk-free yield curve Risk-free yield curve									
Prudential EEV 12.10% 10Y Gov't Bonds 7.90%	Indonesia	Indonesian 1	Indonesian 10-year government bond yield at 30 June 2018: 7.80%									
Malaysia Malaysian 10-year government bond yield at 30 June 2018: 4.21% AIA TEV 8.75% Equities 8.80%, 10Y Gov't Bonds 4.20% Great Eastern TEV 8.75% Not disclosed Prudential EEV 6.80% Equities 10.7%, 10Y Gov't Bonds 4.20% Philippines Philippines 10-year government bond yield at 30 June 2018: 6.42% AIA TEV 11.30% Equities 10.00%, 10Y Gov't Bonds 4.80%		AIA	TEV	13.00%	Equities 12.00%, 10Y Gov't Bonds 7.50%							
AIA TEV 8.75% Equities 8.80%, 10Y Gov't Bonds 4.20% Great TEV 8.75% Not disclosed Prudential EEV 6.80% Equities 10.7%, 10Y Gov't Bonds 4.20% Philippines Philippines 10-year government bond yield at 30 June 2018: 6.42% AIA TEV 11.30% Equities 10.00%, 10Y Gov't Bonds 4.80%		Prudential EEV 12.10% 10Y Gov't Bonds 7.90%										
Great TEV 8.75% Not disclosed Prudential EEV 6.80% Equities 10.7%, 10Y Gov't Bonds 4.20% Philippines 10-year government bond yield at 30 June 2018: 6.42% AIA TEV 11.30% Equities 10.00%, 10Y Gov't Bonds 4.80%	Malaysia	Malaysian 10-year government bond yield at 30 June 2018: 4.21%										
Prudential EEV 6.80% Equities 10.7%, 10Y Gov't Bonds 4.20% Philippines Philippines 10-year government bond yield at 30 June 2018: 6.42% AIA TEV 11.30% Equities 10.00%, 10Y Gov't Bonds 4.80%		AIA	TEV	8.75%	Equities 8.80%, 10Y Gov't Bonds 4.20%							
Philippines Philippines 10-year government bond yield at 30 June 2018: 6.42% AIA TEV 11.30% Equities 10.00%, 10Y Gov't Bonds 4.80%			TEV	8.75%	Not disclosed							
AIA TEV 11.30% Equities 10.00%, 10Y Gov't Bonds 4.80%		Prudential	EEV	6.80%	Equities 10.7%, 10Y Gov't Bonds 4.20%							
·	Philippines	Philippines 10-year government bond yield at 30 June 2018: 6.42%										
Prudential EEV 14.10% 10Y Gov't Bonds 6.60%		AIA	TEV	11.30%	Equities 10.00%, 10Y Gov't Bonds 4.80%							
		Prudential	EEV	14.10%	10Y Gov't Bonds 6.60%							

FIGURE 8: RISK DISCOUNT RATE AND INVESTMENT ASSUMPTIONS OF INSURERS BY MARKET (CONTINUED)

Singapore										
J	Singaporean 10-year government bond yield at 30 June 2018: 2.54%									
	AIA	TEV	6.90%	Equities 7.00%, 10Y Gov't Bonds 2.50%						
	Great Eastern	TEV	7.00%	Not disclosed						
	Prudential	EEV	3.9% (NB), 4.9% (IF)	Equities 9.1%, 10Y Gov't Bonds 2.6%						
South Korea	South Korean 10-year government bond yield at 30 June 2018: 2.56%									
	AIA	TEV	8.60%	Equities 7.20%, 10Y Gov't Bonds 2.70%						
	Hanwha Life	TEV	8.50%	3.65%						
	Samsung Life	TEV	8.50%	4.00%						
	Samsung Fire & Marine	TEV	8.50%	3.30%						
Taiwan	Taiwan 10-year government bond yield at 30 June 2018: 0.94%									
	AIA	TEV	7.85%	Equities 6.60%,10Y Gov't Bonds 1.60%						
	China Life TW	TEV	10.50%	Years 1-10: 3.75%-5.31% (traditional), 2.75%-4.45% (interest- sensitive)						
				Years 11+: 5.35% (traditional), 4.55% (interest-sensitive)						
	Fubon	TEV	11.00% (VIF), 10.50% (NB)	New Business NTD Traditional Policies: Year 2017 to Year 2049 at 3.08% ~ 5.54% (2050+)						
				USD Policies: Year 2017 to Year 2046 at 3.85% ~ 5.96% (2047+)						
				In-Force Business NTD Traditional Policies: Year 2018 to Year 2049 at 3.72% ~ 5.57% (2050+)						
	Mercuries Life	TEV	Not disclosed	USD Policies: Year 2018 to Year 2043 at 4.44% ~ 5.96% (2044+) Not disclosed						
	Prudential	EEV	4.5% (NB), 4.0% (IF)	10Y Gov't Bonds 0.9%						
	Shin Kong	TEV	10.50%	TWD: 3.83%-5.10% (IF), 3.50%-5.10% (NB) USD: 4.45%-5.62% (IF), 4.43%-5.62% (NB)						
	Taiwan Life	TEV	10.00%	TWD Policies: Year 2018 to Year 2037 at 3.80% ~ 4.38% (2038+) USD Policies: Year 2018 to Year 2037 at 4.63% ~ 5.48% (2038+)						
Thailand	Thailand 10-y	year government bond yield at	30 June 2018: 2.62%							
	AIA	TEV	8.60%	Equities 9.00%, 10Y Gov't Bonds 3.20%						
	Bangkok Life	TEV	9.00%	4.25%						
	Prudential	EEV	10.10%	10Y Gov't Bonds 2.60%						
Vietnam	Vietnamese 10-year government bond yield at 30 June 2018: 4.74%									
	AIA	TEV	12.30%	Equities 11.80%, 10Y Gov't Bonds 6.50%						
	Dai-ichi Life Vietnam	TEV	Not disclosed	Not disclosed						
	Prudential	EEV	12.20%	10Y Gov't Bonds 4.70%						

Note: Blue shaded entries indicate that the 2018H1 EV assumptions for the company have not yet been disclosed, thus the stated assumptions have been based on FY2017 disclosures instead

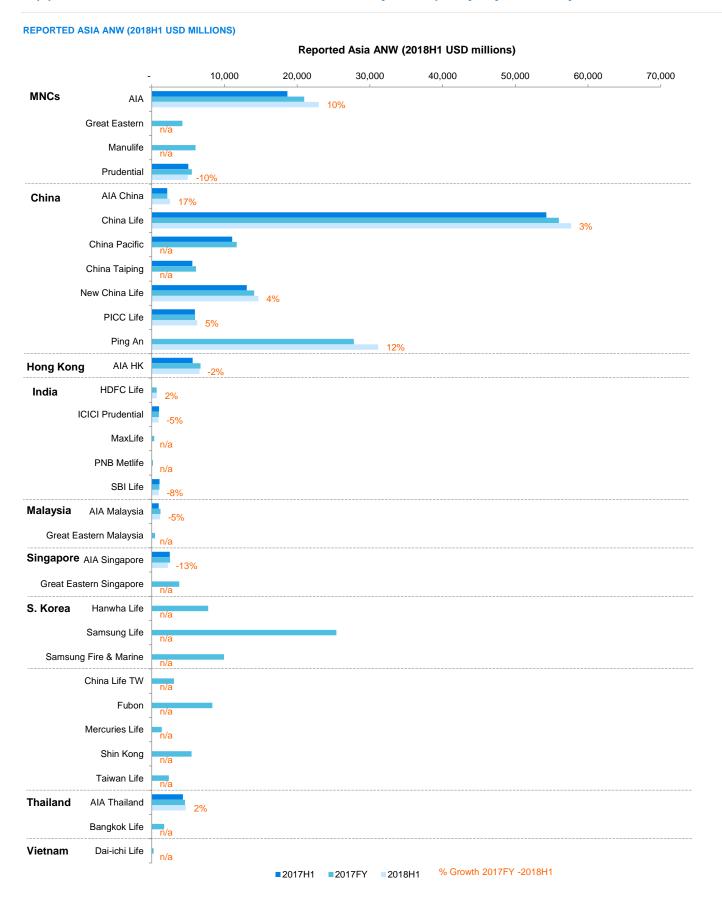
Appendix A: Total Asian EV by company by territory

TOTAL ASIAN EV BY COMPANY AS AT FIRST HALF YEAR OF 2018 REPORTING YEAR (USD MILLIONS¹⁷)

TYPE	COMPANY	FINANCIAL MID- YEAR DATE	EV PRINCIPLE	CHINA	HONG KONG	INDIA	MALAYSIA	SINGAPORE	SOUTH KOREA	TAIWAN	THAILAND	VIETNAM	OTHER ASIA/ UNALLOCATED
MNCs	AIA	30-Jun-18	TEV	7,575	17,629	-	2,530	5,480	-	-	8,369	-	10,429
	Prudential plc	30-Jun-18	EEV	-	-	-	-	-	-	-	-	-	28,987
China	China Life	30-Jun-18	TEV	116,222	-	-	-	-	-	-	-	-	-
	New China Life	30-Jun-18	TEV	25,021	-	-	-	-	-	-	-	-	-
	PICC Life	30-Jun-18	TEV	10,095	-	-	-	-	-	-	-	-	-
	Ping An	30-Jun-18	TEV	86,474	-	-	-	-	-	-	-	-	-
India	HDFC Life	30-Sep-18	IEV	-	-	2,258	-	-	-	-	-	-	-
	ICICI Prudential	30-Sep-18	IEV	-	-	2,654	-	-	-	-	-	-	-
	SBI Life	30-Sep-18	IEV	-	-	2,745	-	-	-	-	-	-	-

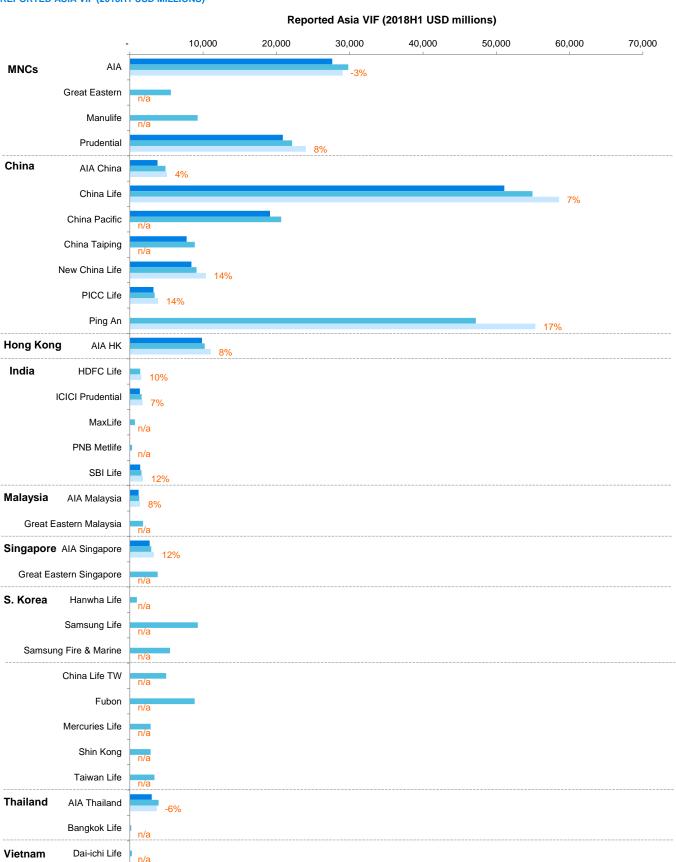
 $^{^{17}\,\}text{EV}$ results have been converted at the prevailing USD mid-FX rate as at the reporting date.

Appendix B: Total Asian ANW and VIF by company by territory



Note: "n/a" implies that the company has not disclosed its 2018H1 ANW results at the time of writing this report.

REPORTED ASIA VIF (2018H1 USD MILLIONS)



Note: "n/a" implies that the company has not disclosed its 2018H1 VIF results at the time of writing this report.

■2017H1 ■2017FY ■2018H1

% Growth 2017FY -2018H1



Milliman is among the world's largest providers of actuarial and related products and services. The firm has consulting practices in life insurance and financial services, property & casualty insurance, healthcare, and employee benefits. Founded in 1947, Milliman is an independent firm with offices in major cities around the globe.

milliman.com

CONTACT

Paul Sinnott paul.sinnott@milliman.com

Michael Daly michael.daly@milliman.com

Richard Holloway richard.holloway@milliman.com

Wing Wong wing.wong@milliman.com

Sanket Kawatkar sanket.kawatkar@milliman.com

Shamit Gupta shamit.gupta@milliman.com

© 2018 Milliman, Inc. All Rights Reserved. The materials in this document represent the opinion of the authors and are not representative of the views of Milliman, Inc. Milliman does not certify the information, nor does it guarantee the accuracy and completeness of such information. Use of such information is voluntary and should not be relied upon unless an independent review of its accuracy and completeness has been performed. Materials may not be reproduced without the express consent of Milliman.