

MILLIMAN REPORT

# 2021 mid-year embedded value results: Asia

January 2022

Prepared by:

Paul Sinnott  
Michael Daly  
Richard Holloway  
Wing Wong  
Chihong An  
Wen Yee Lee  
Stephen Conwill  
Philip Jackson  
Heerak Basu  
Shamit Gupta





## Table of contents

<b>OPENING REMARKS.....</b>	<b>1</b>
<b>INTRODUCTION AND BACKGROUND.....</b>	<b>2</b>
<b>EMBEDDED VALUE RESULTS.....</b>	<b>4</b>
<b>VALUE OF NEW BUSINESS RESULTS.....</b>	<b>6</b>
<b>NEW BUSINESS MARGIN RESULTS.....</b>	<b>9</b>
<b>RISK DISCOUNT RATE AND INVESTMENT RETURN ASSUMPTIONS.....</b>	<b>11</b>
<b>APPENDIX A: DISCLOSED ASIAN EV BY COMPANY AND BY MARKET.....</b>	<b>16</b>
<b>APPENDIX B: DISCLOSED ASIAN ANW AND VIF BY COMPANY AND BY MARKET.....</b>	<b>17</b>

## Opening remarks

We are pleased to present our Asian embedded value mid-year 2021 update. This report supplements the '2020 Embedded Value Results: Asia' report, which was released in August 2021, and provides a summary of the mid-year 2021 embedded value (EV) results disclosed by Asian insurers.

It is worth noting that, while most of the region operates on a calendar year reporting basis, some markets and companies have different reporting years—India and Japan notably reporting mid-financial year results as at 30 September each year.

Most companies in the region have experienced steady growth in EV in the first half of the year. The growth in Value of New Business (VNB) was mostly positive across the Asian markets, mainly due to increase in new business sales and significant shifts in product mix towards protection and unit-linked products. However, the impact of another surge of the COVID-19 pandemic in 2021 led to decline in VNB in some markets such as China and Taiwan. Insurers in the Indian market reported significant increases in VNB, as a result of positive changes in product mix and distribution mix.

Best regards,

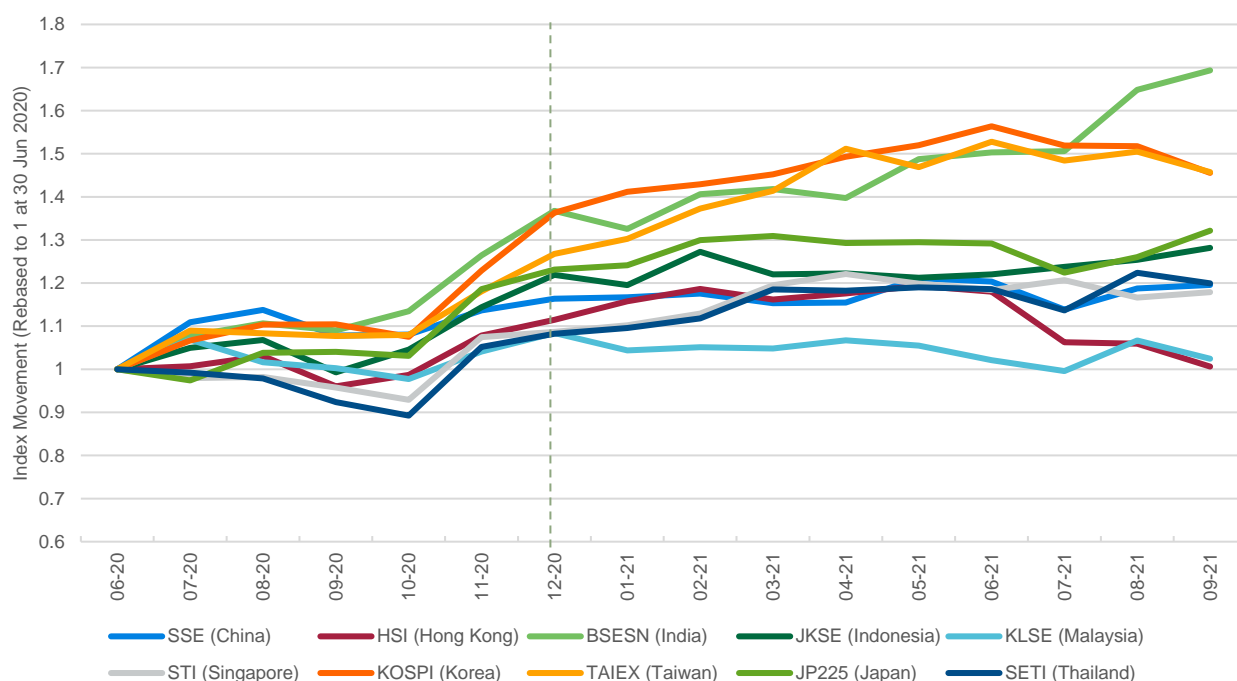
Paul Sinnott  
Michael Daly  
Richard Holloway  
Wing Wong  
Chihong An  
Wen Yee Lee  
Stephen Conwill  
Philip Jackson  
Heerak Basu  
Shamit Gupta

## Introduction and background

With another surge of the COVID-19 pandemic in 2021, Asian equity markets experienced some volatility over the past year. Most equity indices showed steady growth, recording positive returns until first half of 2021, followed by volatility experienced in the last quarter (see Figure 1). India led the equity market gains across Asia<sup>1</sup>, with the BSE Sensex touching its highest level since inception. The other markets in Asia experienced small to moderate growth in their respective equity indices over the period.

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

**FIGURE 1: RECENT EQUITY MARKET PERFORMANCE: GROWTH OF MAJOR EQUITY INDICES<sup>2,3</sup> FROM 30 JUNE 2020 TO 30 SEPTEMBER 2021**



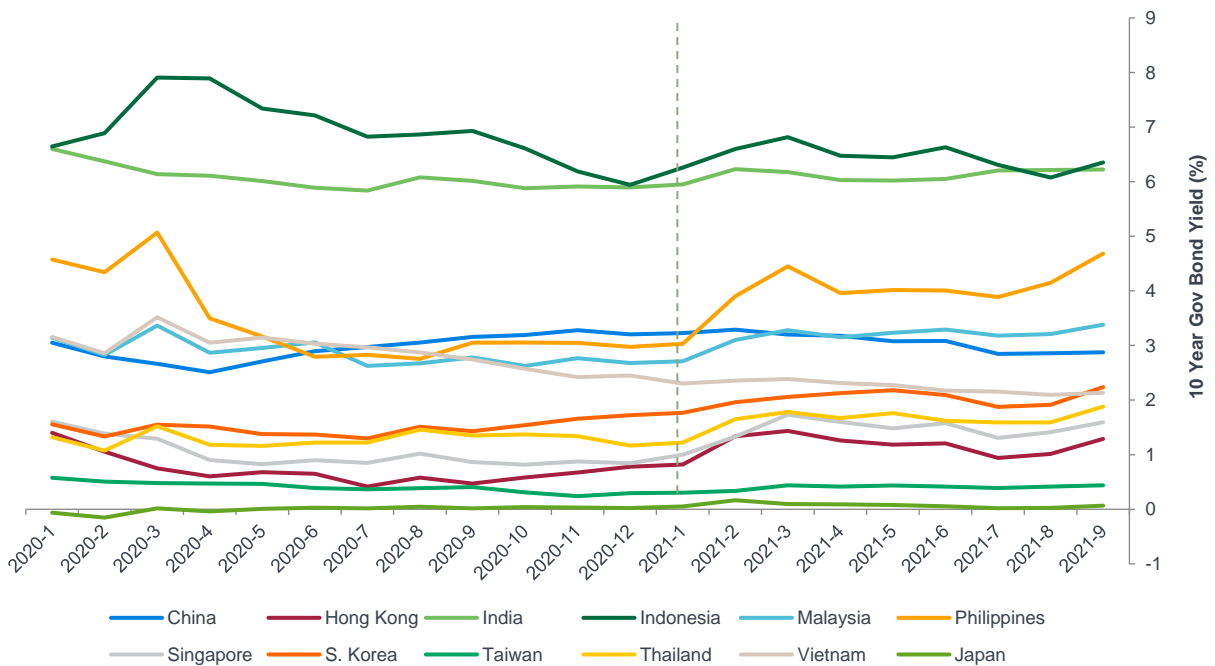
<sup>1</sup> Asian markets which are considered for this report are China, Hong Kong, India, Indonesia, Japan, Malaysia, Singapore, South Korea, Thailand and Taiwan.

<sup>2</sup> The following stock indices have been used for each market: China: Shanghai Stock Exchange Composite Index; Hong Kong: Hang Seng Index; India: Bombay Stock Exchange 30; Indonesia: Jakarta Composite; Japan: Nikkei 225, Malaysia: Kuala Lumpur Stock Exchange Composite Index; Singapore: Straits Times Index; South Korea: Korea Composite Index; Taiwan: Taiwan Weighted Index, Thailand: SET Index.

<sup>3</sup> Source: Investing.com.

Since January 2021, while interest rates generally increased in Asia despite another surge of the COVID-19 pandemic in the year, interest rates in China and Vietnam decreased<sup>4</sup> (refer to 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 the Indian EV (IEV) framework, 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 the 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 with guarantees (due to lower investment margins). Under a traditional EV (TEV) framework, the impact of changing interest rates also depends upon whether a company alters 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 assumptions, it may lead to counterintuitive results, such as declining interest rates resulting in a higher EV.

FIGURE 2: 10-YEAR SOVEREIGN BOND YIELDS<sup>4</sup> 2020-2021

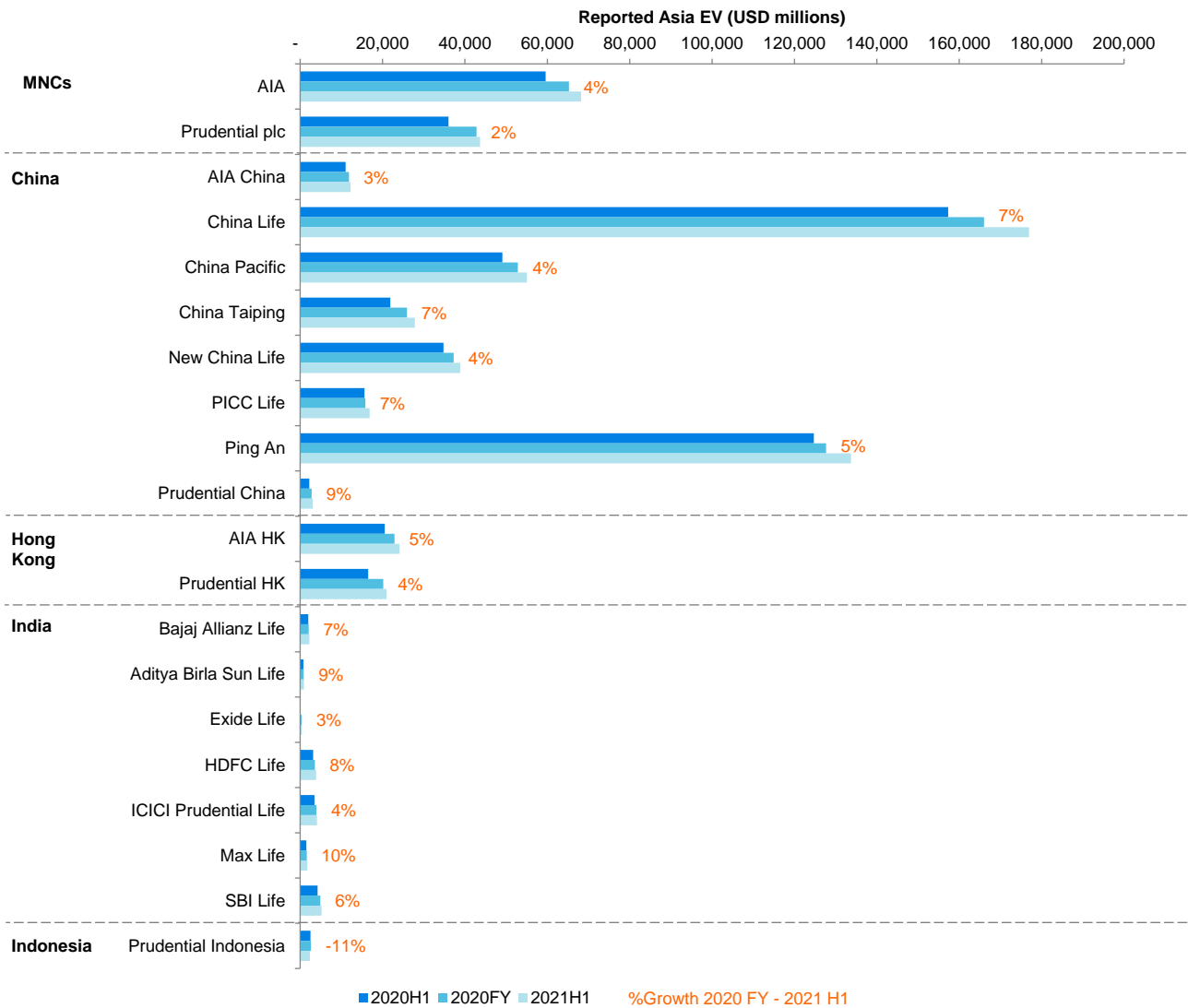


<sup>4</sup> The graph compares gross redemption yields, sourced from Investing.com.

## Embedded value results

The chart in Figure 3 compares the EV results by company within the different Asian markets over the period 2020 H1 to 2021 H1. It only includes those companies that have reported their mid-year EV results before the cut-off date of this report, i.e., 30 November 2021. Figure 3 also includes the full year results for all Indian and Japanese companies, as the financial year for these two markets runs from April to March and the results for some companies were not published in time for our year-end EV report '2020 Embedded Value Results: Asia.'

**FIGURE 3: ASIAN LIFE INSURANCE COVERED BUSINESS EV BY COMPANY<sup>5,6,7</sup> 2020 H1 TO 2021 H1**

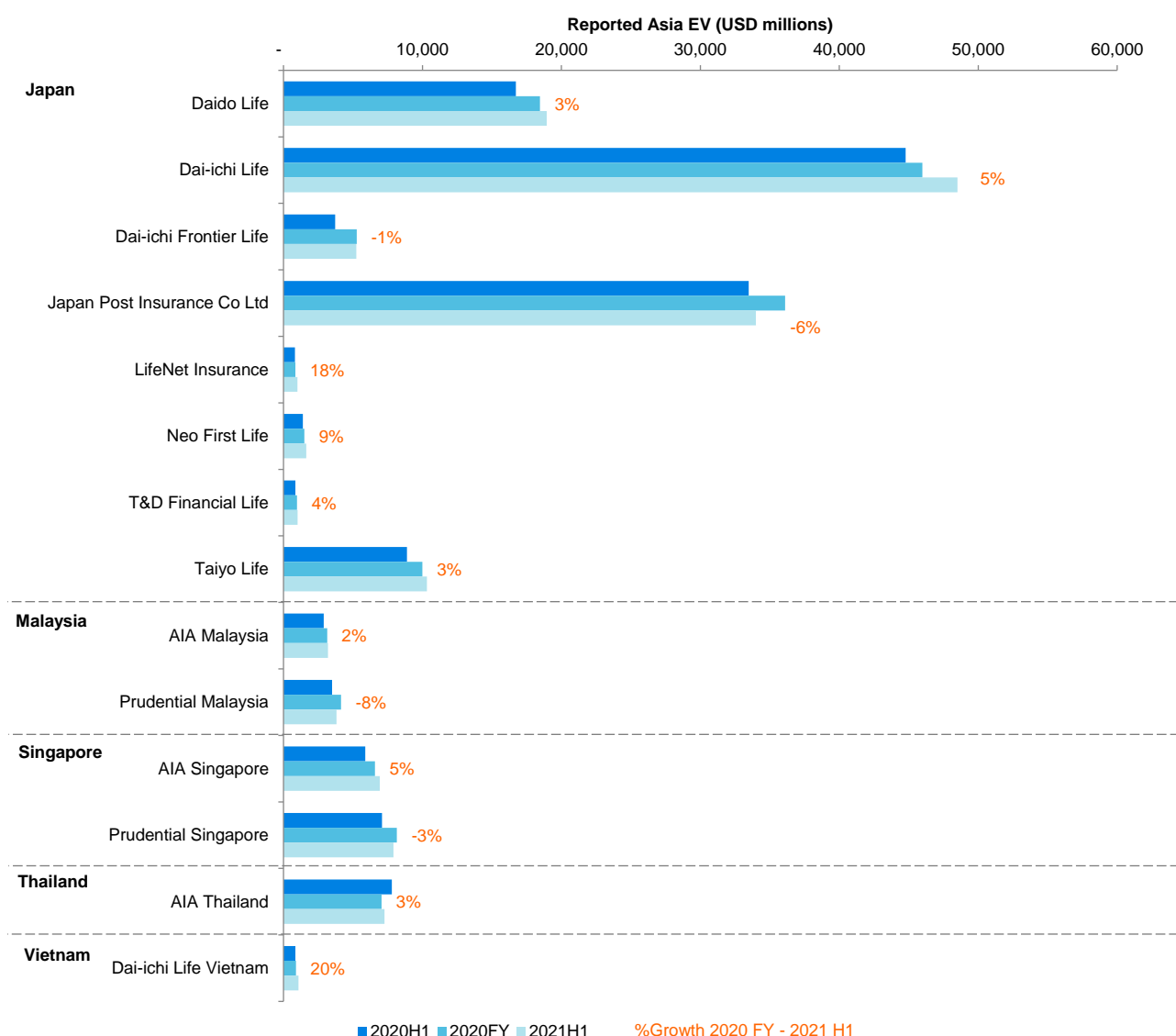


<sup>5</sup> The EV results for each company have been converted to USD at the foreign exchange (FX) rates prevailing as at their 2021 H1 reporting dates to remove most of the effect of currency fluctuations.

<sup>6</sup> In this report, 2020 FY for Indian and Japanese insurers represent the financial year ending 31 March 2021; 2020 H1 and 2021 H1 represent the mid-year ending 30 September 2020 and 30 September 2021, respectively.

<sup>7</sup> We have excluded those companies that have not reported 2020 H1 and 2021 H1 EV.

FIGURE 3: ASIAN LIFE INSURANCE COVERED BUSINESS EV BY COMPANY<sup>8,9,10</sup> 2020 H1 TO 2021 H1 (CONTINUED)



Besides Dai-ichi Frontier Life, Japan Post Insurance Co Ltd and the Indonesian, Malaysian and Singaporean subsidiaries of Prudential plc, all other companies reported positive increases in EV during 2021 H1. Dai-ichi Life Vietnam recorded the highest growth of 20%, followed by LifeNet Insurance, which recorded a growth of 18% during 2021 H1.

AIA recorded positive growth in EV across all of its Asian operations. The company attributed the growth in EV operating profit to strong VNB growth and positive operating variance from the continued proactive management of its in-force portfolio.

<sup>8</sup> The EV results for each company have been converted to USD at the foreign exchange (FX) rates prevailing as at their 2021 H1 reporting dates to remove most of the effect of currency fluctuations.

<sup>9</sup> In this report, 2020FY for Indian and Japanese insurers represent the financial year ending 31 March 2021; 2020 H1 and 2021 H1 represent the mid-year ending 30 September 2020 and 30 September 2021, respectively.

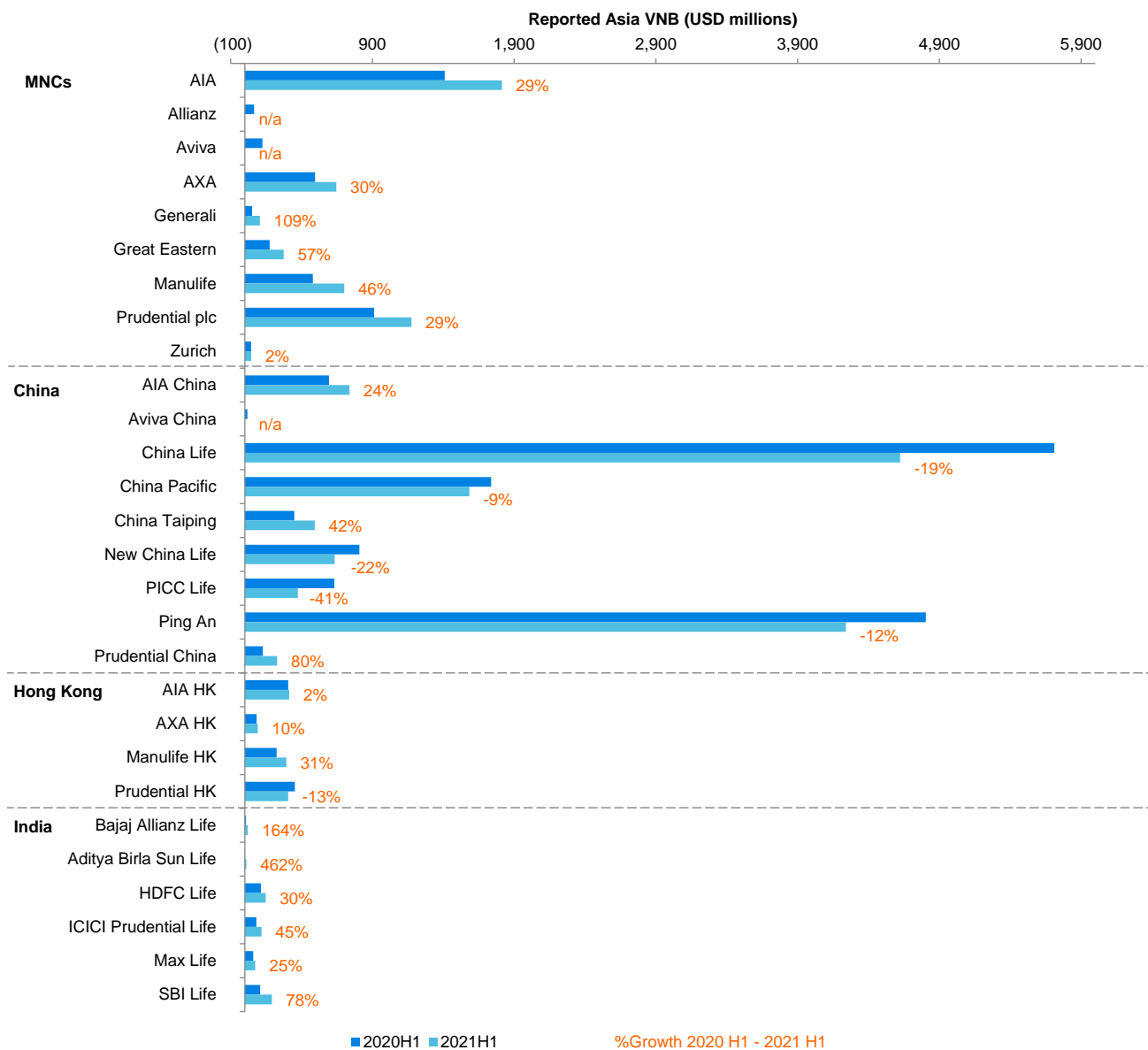
<sup>10</sup> We have excluded those companies that have not reported 2020 H1 and 2021 H1 EV.



## Value of new business results

The chart in Figure 4 compares the 2020 H1 and 2021 H1 VNB results by company within the different Asian markets.<sup>11,12</sup>

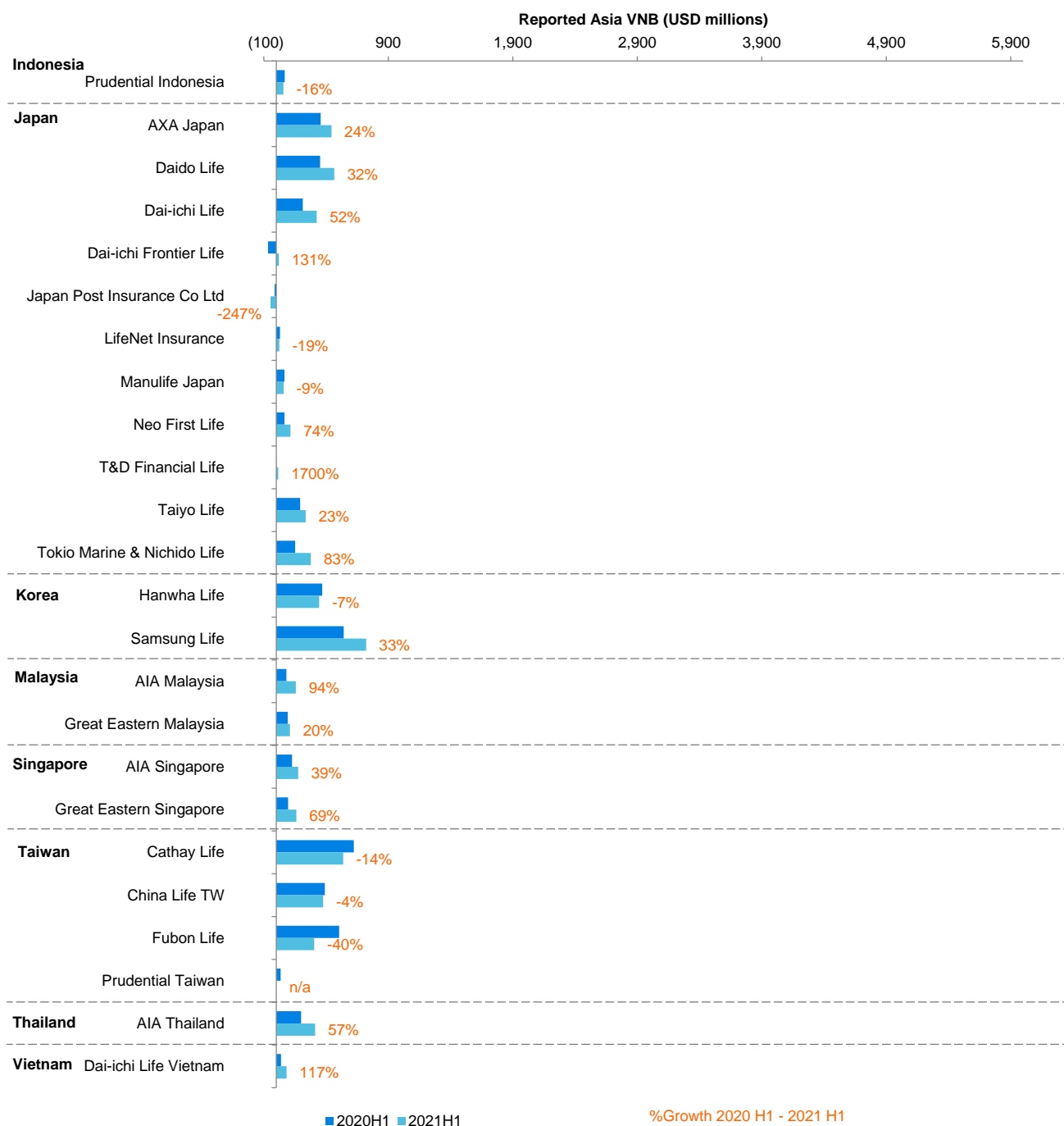
FIGURE 4: ASIAN VNB BY COMPANY 2020 H1 AND 2021 H1



<sup>11</sup> For Indian and Japanese 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.

<sup>12</sup> We have excluded those companies that have not reported 2020 H1 and 2021 H1 VNB.

FIGURE 4: ASIAN VNB BY COMPANY 2020 H1 AND 2021 H1 (CONTINUED)



Among the multinational corporations (MNCs), Generali reported the strongest VNB growth of 109% during 2021 H1, mainly due to increased sales of health and protection products. Great Eastern reported a VNB growth of 57% mainly driven by increased new business sales. The growth of 46% in VNB shown by Manulife can be attributed to increased new business sales across Asia excluding Hong Kong and Japan, together with a shift in focus away from low margin corporate-owned life insurance (COLI) products in Japan.

In China, the VNB in 2021 H1 declined for all insurers except AIA China, China Taiping and Prudential China. PICC Life recorded the highest fall of 41%, followed by New China Life, which reported a decline of 22% in VNB. China Pacific attributed the decline of 9% in its VNB to changes in business mix. AIA's China subsidiary was the group's largest contributor to VNB, with a growth of 24% in 2021 H1 on a like-for-like basis<sup>13</sup>.

All life insurers in Hong Kong included in this report recorded an increase in VNB, except for Prudential Hong Kong, where VNB declined due to a fall in sales, attributed to the ongoing border closure between Mainland China and Hong Kong due to COVID-19, which outweighed the impact of increasing new business margins. Manulife Hong Kong recorded the largest growth of 31%, attributing this to an increase in new business sales, favourable interest rates and product management actions.

In contrast to 2020 H1, insurers in India reported significant increases in VNB. Aditya Birla Sun Life recorded the highest growth of 462% (a growth of INR 600 million in absolute terms), albeit from a very small base, mainly driven by efficient expense management and strong Gross VNB as per the company. Bajaj Allianz Life attributed its VNB growth of 164% to a balanced product mix and diversified distribution mix. HDFC Life and Max Life reported VNB growth of 30% and 25%, respectively, mainly driven by a balanced product mix and higher sales volumes.

Prudential Indonesia reported a decline of 16% in VNB in 2021 H1, citing lower new business sales (due to continued COVID-19 disruptions) and less diversification of products as the main reasons.

In Japan, besides Japan Post Insurance Co Ltd, LifeNet Insurance and Manulife, all other insurers reported significant growth in VNB in 2021 H1. T&D Financial Life recorded the highest growth in VNB in absolute terms of JPY 1.7 billion, albeit from a very small base. AXA Japan recorded a growth of 41% in VNB, attributing the growth to strong annualised premium equivalent (APE) from sales of protection, unit-linked, and less capital intensive single premium whole life products. Dai-ichi Life, Dai-ichi Frontier Life and Neo First Life reported VNB growth of 52%, 131% and 74%, respectively, attributing the growth to new medical insurance products at Dai-ichi Life, foreign currency-denominated saving products at Dai-ichi Frontier Life and revision of medical insurance products at Neo First Life.

AIA Malaysia reported the highest VNB growth of 94% during 2021 H1 amongst all its operations in Asia, attributing the growth to strong performance by both agency and partnership channels. VNB for Great Eastern Malaysia increased by 20% due to higher new business sales.

In Singapore, both AIA and Great Eastern reported increases in VNB of 39% and 69%, respectively, driven by growth in sales through a successful adoption of digital technology by the agency channel.

In South Korea, Samsung Life's VNB growth of 33% was driven by strong health product sales.

All insurers in Taiwan included in the analysis recorded declines in VNB during 2021 H1. Fubon Life's VNB reduced by 40% due to higher sales of lower margin single premium policies, mainly consisting of investment-linked products and interest-sensitive annuities. Cathay Life's VNB decline of 14% was blamed on lower sales due to COVID-19 restrictions.

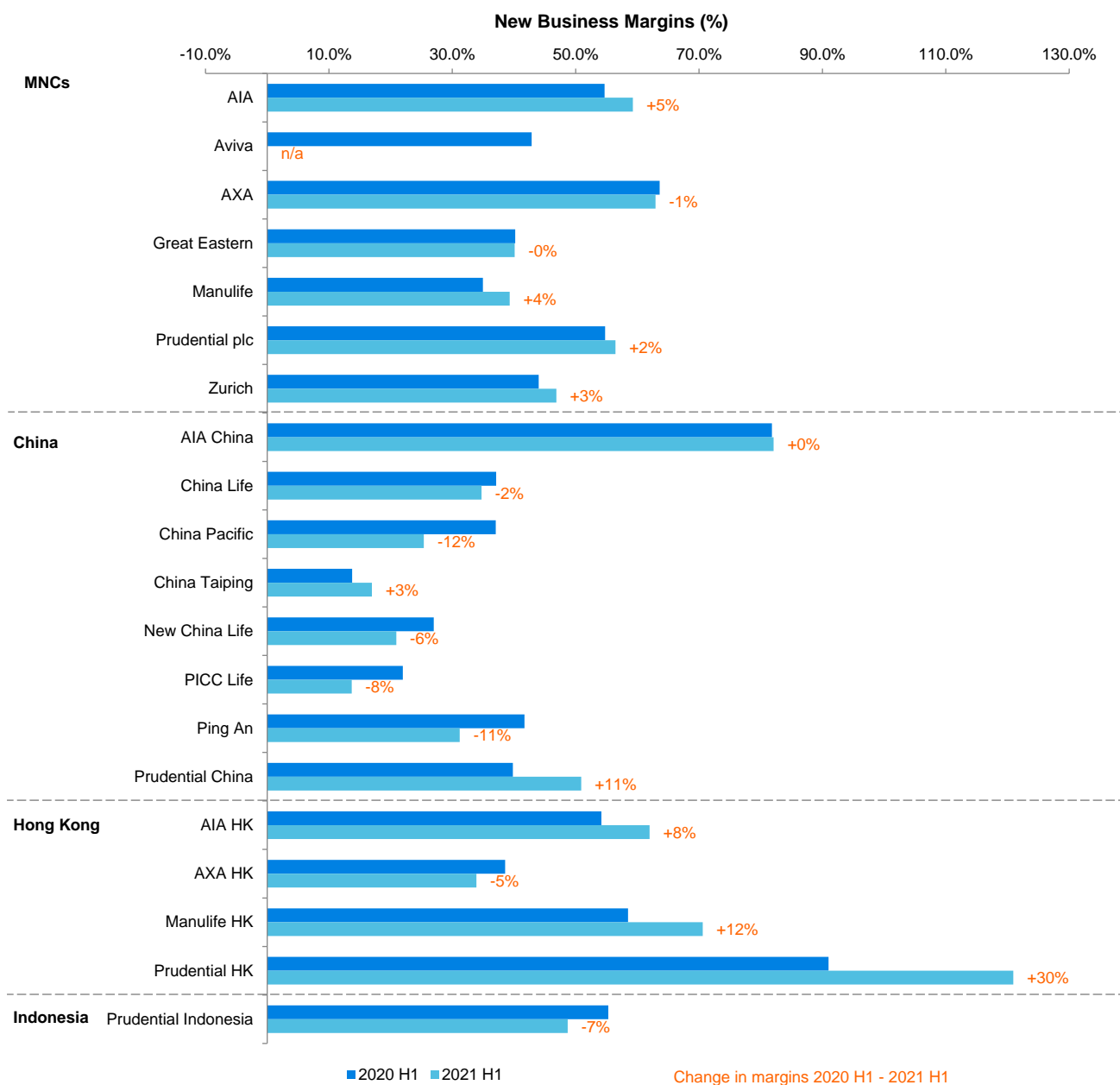
AIA Thailand reported VNB growth of 57% during 2021 H1, mainly driven by a significant shift in product mix towards traditional protection and regular premium unit-linked products.

---

<sup>13</sup> The like-for-like basis compares the results for AIA China gross of 5 per cent withholding tax which has been applied since July 2020 following subsidiarisation. (Source – Page 4 of AIA Interim Report 2021)

## New business margin results

FIGURE 5: IMPLIED NEW BUSINESS MARGINS BY COMPANY,<sup>14,15,16,17</sup> FOR 2020 H1 AND 2021 H1



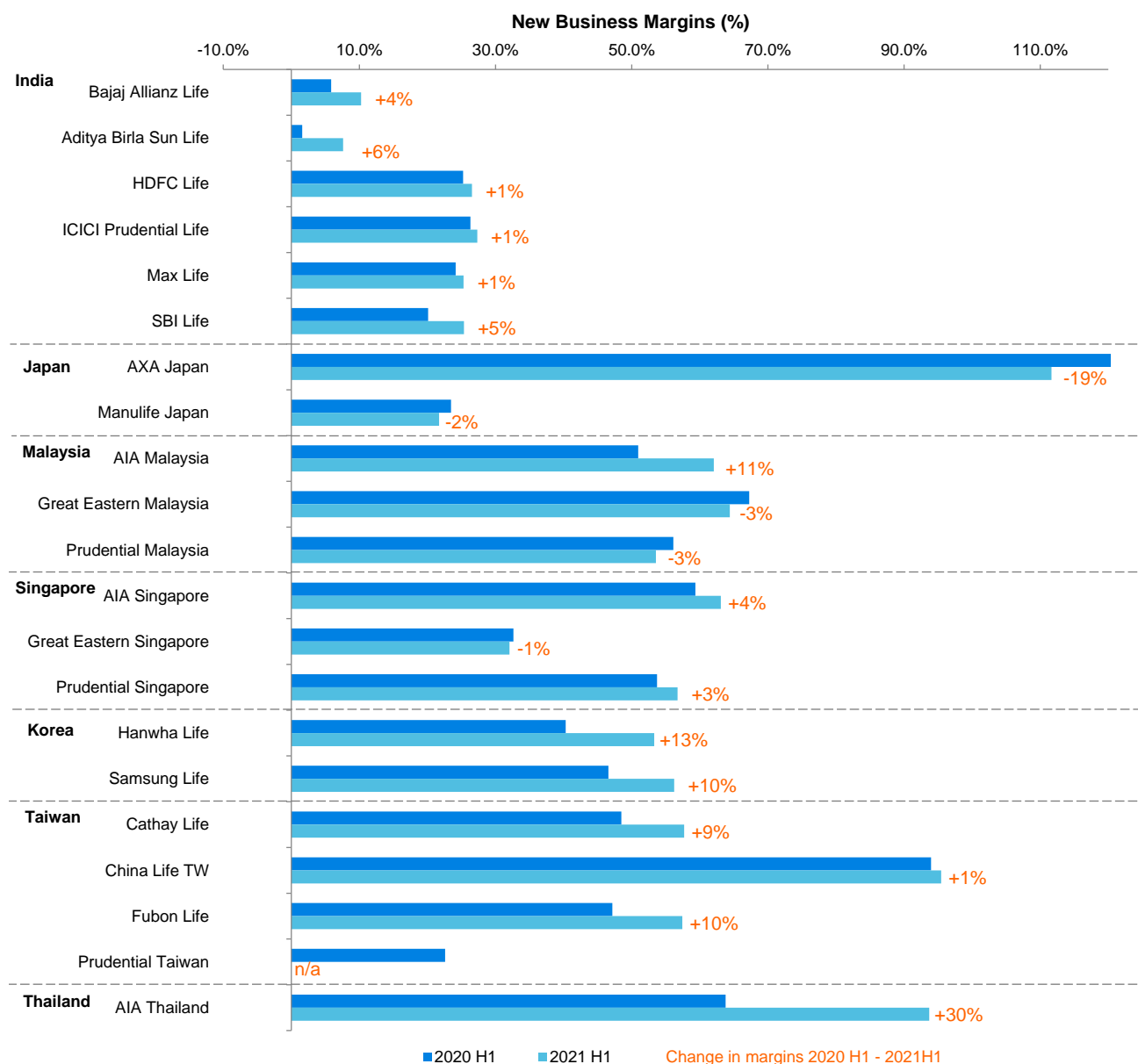
<sup>14</sup> For the MNCs, please note that these are the margins relating to their Asian business.

<sup>15</sup> New business margin is defined as VNB divided by APE. We have excluded Japan and Vietnam insurers from this analysis as they report new business margins as the ratio of VNB to the present value of new business premiums.

<sup>16</sup> We have excluded those companies that have not reported 2020 H1 and 2021 H1 new business margins.

<sup>17</sup> APE figures for China insurers include short-term insurance premiums as life insurers write both short-term and long-term business for both life and health insurance.

FIGURE 5: IMPLIED NEW BUSINESS MARGINS BY COMPANY FOR 2020 H1 AND 2021 H1 (CONTINUED)



In comparison to the first half of 2020, changes in new business margins were varied in the first half of 2021. Most insurers across Asia reported an increase in new business margins, although a few reported decreases.

The highest growth in new business margins (in relative term) came from the following companies:

- Prudential Hong Kong, from 91.0% to 120.9%
- AIA Thailand, from 63.8% to 93.7%
- Hanwha Life, from 40.3% to 53.3%
- Manulife Hong Kong, from 58.5% to 70.6%
- AIA Malaysia, from 50.5% to 61.7%

AIA Thailand attributed the increase in new business margin to a shift in product mix towards traditional protection and regular premium unit-linked products. In contrast, the decline in new business margin of AXA Hong Kong was mainly driven by changes in product mix, whereas AXA Japan attributed its new business margin decline to the repricing applied to protection and unit-linked products at the end of 2020. Most of the insurers in China reported a decline in new business margin, with China Pacific reporting the highest decline from 37.0% to 25.4%.

## 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.

**FIGURE 7: RISK DISCOUNT RATE AND INVESTMENT RETURN ASSUMPTIONS OF MNCS<sup>18</sup>**

TYPE	COMPANY	EV PRINCIPLE	RDR	INVESTMENT RETURNS
MNC	AIA	TEV	China: 9.73% Hong Kong: 7.00% Indonesia: 12.99% Korea: 8.10% Malaysia: 8.55% Philippines (Philam Life): 11.80% Singapore: 6.60% Sri Lanka: 15.70% Taiwan: 7.25% Thailand: 7.75% Vietnam: 9.71%	China: Equities 9.30%, 10Y Gov't Bonds 3.70% Hong Kong: Equities 7.00%, 10Y Gov't Bonds 2.20% Indonesia: Equities 12.00%, 10Y Gov't Bonds 7.50% Korea: Equities 6.50%, 10Y Gov't Bonds 2.20% Malaysia: Equities 8.60%, 10Y Gov't Bonds 4.00% Philippines (Philam Life): Equities 10.50%, 10Y Gov't Bonds 5.30% Singapore: Equities 6.70%, 10Y Gov't Bonds 2.20% Sri Lanka: Equities 12.00%, 10Y Gov't Bonds 10.00% Taiwan: Equities 5.60%, 10Y Gov't Bonds 1.00% Thailand: Equities 7.70%, 10Y Gov't Bonds 2.70% Vietnam: Equities 9.30%, 10Y Gov't Bonds 4.00%
	Allianz	MCEV / SII	Risk-free interest rate curves, allowing for volatility adjustment.	Risk-free interest rate curves, allowing for volatility adjustment and correlation assumptions based on historic data.
	Aviva	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.
	AXA	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.
	Great Eastern	TEV	Singapore: 6.00% Malaysia: 7.75% Indonesia: 12.5%	Not disclosed.
	Manulife	TEV	Hong Kong: 8.00% Japan: 5.75%	Hong Kong: Equity 9.50%, 10Y Gov't Bonds (immediate to ultimate reinvestment rate): 0.74% to 4.10% Japan: Equity 6.00%, 10Y Gov't Bonds (immediate to ultimate reinvestment rate): 0.02% to 3.44%
	Prudential plc	EEV	China: 7.6% (NB), 7.6% (IF) Hong Kong: 2.4% (NB), 2.7% (IF) Indonesia: 9.2% (NB), 10.6% (IF) Malaysia: 5.4% (NB), 5.8% (IF) Philippines: 11.2% (NB), 11.2% (IF) Singapore: 3.2% (NB), 3.7% (IF) Taiwan: 3.5% (NB), 2.6% (IF) Thailand: 9.1% (NB), 9.1% (IF) Vietnam: 3.9% (NB), 4.1% (IF)	China: 10Y Gov't Bonds 3.1% Hong Kong: 10Y Gov't Bonds 1.5% Indonesia: 10Y Gov't Bonds 7.1% Malaysia: 10Y Gov't Bonds 3.4% Philippines: 10Y Gov't Bonds 3.9% Singapore: 10Y Gov't Bonds 1.6% Taiwan: 10Y Gov't Bonds 0.5% Thailand: 10Y Gov't Bonds 1.8% Vietnam: 10Y Gov't Bonds 2.2%
	Zurich	MCEV	Risk-free interest rate curves, allowing for volatility adjustment.	Risk-free interest rate curves, allowing for volatility adjustment.

Note: Blue-shaded entries indicate that the 2021 H1 EV assumptions for the company have not yet been disclosed, thus the stated assumptions have been based on FY 2020 disclosures instead.

<sup>18</sup> NB: new business; IF: in-force business.

FIGURE 8: RISK DISCOUNT RATE AND INVESTMENT ASSUMPTIONS OF INSURERS BY MARKET<sup>19,20,21</sup>

MARKET	COMPANY	EV PRINCIPLE	RDR	INVESTMENT RETURNS
<b>China</b>	<b>Chinese 10-year government bond yield at 30 June 2021: 3.083%</b>			
	AIA	TEV	9.73%	China: Equities 9.30%, 10Y Gov't Bonds 3.70%
	China Life	TEV	10.00%	Assumed to be 5%.
	China Pacific	TEV	11.00%	Long-term business: 5.00%. Short-term business: based on the latest one-year bank deposit base rate.
	China Taiping	TEV	Not disclosed	Not disclosed
	New China Life	TEV	11.00%	Year 1: 4.50% (non-linked), 6.00% (linked) Year 2: 4.60% (non-linked), 4.70% (universal life), 6.00% (linked) Year 3: 4.80% (non-linked), 5.00% (universal life), 6.00% (linked) Year 4+: 5.00% (non-linked), 5.10% (universal life), 6.00% (linked)
	PICC Life	TEV	10.00%	5.00%
	Ping An	TEV	11.00%	Non-investment-linked: 4.75% in Year 1 and 5.00% thereafter Investment-linked: slightly higher than non-investment-linked
	Prudential	EEV	7.6% (NB), 7.6% (IF)	10Y Gov't Bonds 3.1% & Equity 7.1%
<b>Hong Kong</b>	<b>Hong Kong 10-year government bond yield at 30 June 2021: 1.207%</b>			
	AIA	TEV	7.00%	Equities 7.0%, 10Y Gov't Bonds 2.2%
	AXA	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.
	Manulife	TEV	Hong Kong: 8.00%	Hong Kong: Equity 9.50%, 10Y Gov't Bonds (immediate to ultimate reinvestment rate): 0.74% to 4.10%
	Prudential	EEV	2.4% (NB), 2.7% (IF)	10Y Gov't Bonds 1.5%
<b>India</b>	<b>Indian 10-year government bond yield at 30 September 2021: 6.223%</b>			
	Bajaj Allianz	MCEV	Risk-free yield curve.	Risk-free yield curve.
	Aditya Birla Sun Life	IEV	Not disclosed (although expected to be risk-free yield curve given the valuation methodology).	Not disclosed (although expected to be risk-free yield curve given the valuation methodology).
	Exide Life	MCEV	Not disclosed (although expected to be risk-free yield curve given the valuation methodology).	Not disclosed (although expected to be risk-free yield curve given the valuation methodology).
	HDFC Life	IEV	Risk-free yield curve.	Risk-free yield curve.
	ICICI Prudential	IEV	Risk-free yield curve.	Risk-free yield curve.
	Kotak Life	IEV	Not disclosed (although expected to be risk-free yield curve given the valuation methodology).	Not disclosed (although expected to be risk-free yield curve given the valuation methodology).
	Max Life	MCEV	Risk-free yield curve.	Risk-free yield curve.
	PNB MetLife	IEV	Risk-free yield curve.	Risk-free yield curve.
	SBI Life	IEV	Risk-free yield curve.	Risk-free yield curve.

<sup>19</sup> NB: new business; IF: in-force business.

<sup>20</sup> Source for 10-year government bond yields: Investing.com.

<sup>21</sup> For Indian and Japanese companies, the financial year runs from April to March. Therefore, the 10-year government bond yields are shown as at 30 September 2021 (i.e., at the mid-year valuation date for these companies).

MARKET	COMPANY	EV PRINCIPLE	RDR	INVESTMENT RETURNS
Japan	Japanese 10-year government bond yield at 30 September 2021: 0.065%			
	AXA	MCEEV	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.
	Manulife	TEV	Japan: 5.75%	Japan: Equity 6.00%, 10Y Gov't Bonds (immediate to ultimate reinvestment rate): 0.02% to 3.44%
	Daido Life	MCEV	Risk-free rate (Based on Japanese, U.S. and Australian Government Bond and Ultimate forward rates).	Risk-free interest rate curves.
	Dai-ichi Life	MC-EEV	Risk-free rate (JPY): Based on JGB and UFRs.  Risk-free rate (Foreign currencies): Based on swap rates extrapolated by assuming forward rates in the 31st year and beyond were equal to those in the 30th year.	Risk-free interest rate curves.
	Dai-ichi Frontier Life	MC-EEV	Risk-free rate (JPY): Based on JGB and UFRs.  Risk-free rate (Foreign currencies): Based on swap rates extrapolated by assuming forward rates in the 31st year and beyond were equal to those in the 30th year.	Risk-free interest rate curves.
	Japan Post Insurance Co Ltd	MC-EEV	Risk-free rate (based on JGB and UFRs).	Risk-free interest rate curves.
	LifeNet Insurance	MC-EEV	Risk-free rate (based on swap rates and UFRs).	Risk-free interest rate curves.
	Medicare Life	MC-EEV	Risk-free rate (Based on Japanese, U.S. and Australian Government Bond and Ultimate forward rates).	Risk-free interest rate curves.
	Meiji Yasuda Life	MC-EEV	Risk-free rate (Based on JGB).	Risk-free interest rate curves.
	MS&AD Aioi Life	MC-EEV	JPY swap rates extrapolated by assuming forward rates in the 41st year and beyond were equal to those in the 40th year.  USD and AUD swap rates allow for illiquidity premium.	Risk-free interest rate curves.
	MS&AD Primary Life	MC-EEV	JPY swap rates extrapolated by assuming forward rates in the 41st year and beyond were equal to those in the 40th year.  USD and AUD swap rates allow for illiquidity premium.	Risk-free interest rate curves.
	Neo First Life	MC-EEV	Risk-free rate (JPY): Based on JGB and UFRs.  Risk-free rate (Foreign currencies): Based on swap rates extrapolated by assuming that forward rates in the 31st year and beyond were equal to those in the 30th year.	Risk-free interest rate curves.
	Sompo Japan Nipponkoa Himawari Life	MCEV	Risk-free rate (Based on Japanese Government Bond and Ultimate forward rates).	Risk-free interest rate curves.
	Sony Life	MCEV	Risk-free rate (Based on Japanese and U.S. Government Bond and Ultimate forward rates).	Risk-free interest rate curves.
	Sumitomo Life	MC-EEV	Risk-free rate (Based on Japanese, U.S. and Australian Government Bond and UFRs).	Risk-free interest rate curves.
	T&D Financial Life	MCEV	Risk-free rate (Based on Japanese, U.S. and Australian Government Bond and Ultimate forward rates).	Risk-free interest rate curves.
	Taiyo Life	MCEV	Risk-free rate (Based on Japanese, U.S. and Australian Government Bond and Ultimate forward rates).	Risk-free interest rate curves.



MARKET	COMPANY	EV PRINCIPLE	RDR	INVESTMENT RETURNS
	Tokio Marine & Nichido Life	MCEV	Risk-free rate (JPY): Based on JGB and 41st year and thereafter are set to the 40-year spot rate adjusted based on historical interest rate movements.  Risk-free rate (Foreign currencies): Based on swap rates extrapolated by assuming that forward rates in the 31st year and beyond were equal to those in the 30th year.	Risk-free interest rate curves.
<b>Indonesia</b>	<b>Indonesian 10-year government bond yield at 30 June 2021: 6.630%</b>			
	AIA	TEV	12.99%	Equities 12.00%, 10Y Gov't Bonds 7.50%
	Prudential	EEV	9.2% (NB), 10.6% (IF)	10Y Gov't Bonds 7.1%
<b>Malaysia</b>	<b>Malaysian 10-year government bond yield at 30 June 2021: 3.291%</b>			
	AIA	TEV	8.55%	Equities 8.60%, 10Y Gov't Bonds 4.00%
	Great Eastern	TEV	Malaysia: 7.75%	Not disclosed.
	Hong Leong Assurance	TEV	Not disclosed.	Not disclosed.
	Prudential	EEV	5.4% (NB), 5.8% (IF)	10Y Gov't Bonds 3.4%
<b>Philippines</b>	<b>Philippines 10-year government bond yield at 30 June 2021: 4.007%</b>			
	AIA	TEV	11.8%	Equities 10.50%, 10Y Gov't Bonds 5.30%
	Prudential	EEV	11.2% (NB), 11.2% (IF)	10Y Gov't Bonds 3.9%
<b>Singapore</b>	<b>Singaporean 10-year government bond yield at 30 June 2021: 1.576%</b>			
	AIA	TEV	6.60%	Equities 6.70%, 10Y Gov't Bonds 2.20%
	Aviva	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.
	Great Eastern	TEV	Singapore: 6.00%	Not disclosed.
	Prudential	EEV	3.2% (NB), 3.7% (IF)	10Y Gov't Bonds 1.6%
<b>South Korea</b>	<b>Korean 10-year government bond yield at 30 June 2021: 2.092%</b>			
	AIA	TEV	8.10%	Equities 6.50%, 10Y Gov't Bonds 2.20%
	Hanwha Life	TEV	7.5%	3%
	Samsung Life	TEV	7.50%	3.49%
<b>Taiwan</b>	<b>Taiwan 10-year government bond yield at 30 June 2021: 0.410%</b>			
	AIA	TEV	7.25%	Equities 5.60%, 10Y Gov't Bonds 1.00%
	Cathay Life	TEV	9.50%	VNB TWD Products: 2.55% ~ 4.52% (2040+) USD Products: 3.95% ~ 5.23% (2040+) VIF TWD Products: 3.67% ~ 4.70% (2040+) USD Products: 4.26% ~ 5.31% (2040+)
	China Life TW	TEV	9.50%	TWD Policies: Year 1 ~ Year 19: 3.50% ~ 4.88% Year 20+: 4.88% USD Policies: Year 1 ~ Year 19: 4.30% ~ 5.20% Year 20+: 5.20%
	Fubon Life	TEV	10%	VNB NTD Traditional Policies: Year 2020 to Year 2046 at 3.43% ~ 4.83% (2047+) USD Policies: Year 2020 to Year 2041 at 3.79% ~ 5.27% (2042+) VIF

MARKET	COMPANY	EV PRINCIPLE	RDR	INVESTMENT RETURNS
				NTD Traditional Policies: Year 2021 to Year 2046 at 3.68% ~ 4.84% (2047+) USD Policies: Year 2021 to Year 2043 at 4.08% ~ 5.29% (2044+)
	Mercuries Life	TEV	Not disclosed.	Not disclosed.
	Prudential	EEV	3.5% (NB), 2.6% (IF)	10Y Gov't Bonds 0.5%
	Shin Kong Life	TEV	Not disclosed.	Not disclosed.
	Taiwan Life	TEV	10%	TWD Policies: Year 2021 to Year 2040 at 3.57% ~ 4.03% (2041+) USD Policies: Year 2021 to Year 2040 at 4.32% ~ 5.04% (2041+)
<b>Thailand</b>	<b>Thailand 10-year government bond yield at 30 June 2021: 1.620%</b>			
	AIA	TEV	7.75%	Equities 7.70%, 10Y Gov't Bonds 2.70%
	Bangkok Life	TEV	Not disclosed.	Not disclosed.
	Prudential	EEV	9.1% (NB), 9.1% (IF)	10Y Gov't Bonds 1.8%
<b>Vietnam</b>	<b>Vietnamese 10-year government bond yield at 30 June 2021: 2.174%</b>			
	AIA	TEV	9.71%	Equities 9.30%, 10Y Gov't Bonds 4.0%
	Dai-ichi Life Vietnam	TEV	9%	Not disclosed.
	Prudential	EEV	3.9% (NB), 4.1% (IF)	Equities (geometric) 6.50%, 10Y Gov't Bonds 2.2%

Note: Blue-shaded entries indicate that the 2021 H1 EV assumptions for the company have not yet been disclosed, thus the stated assumptions have been based on FY 2020 disclosures instead.

## Appendix A: Disclosed Asian EV by company and by market

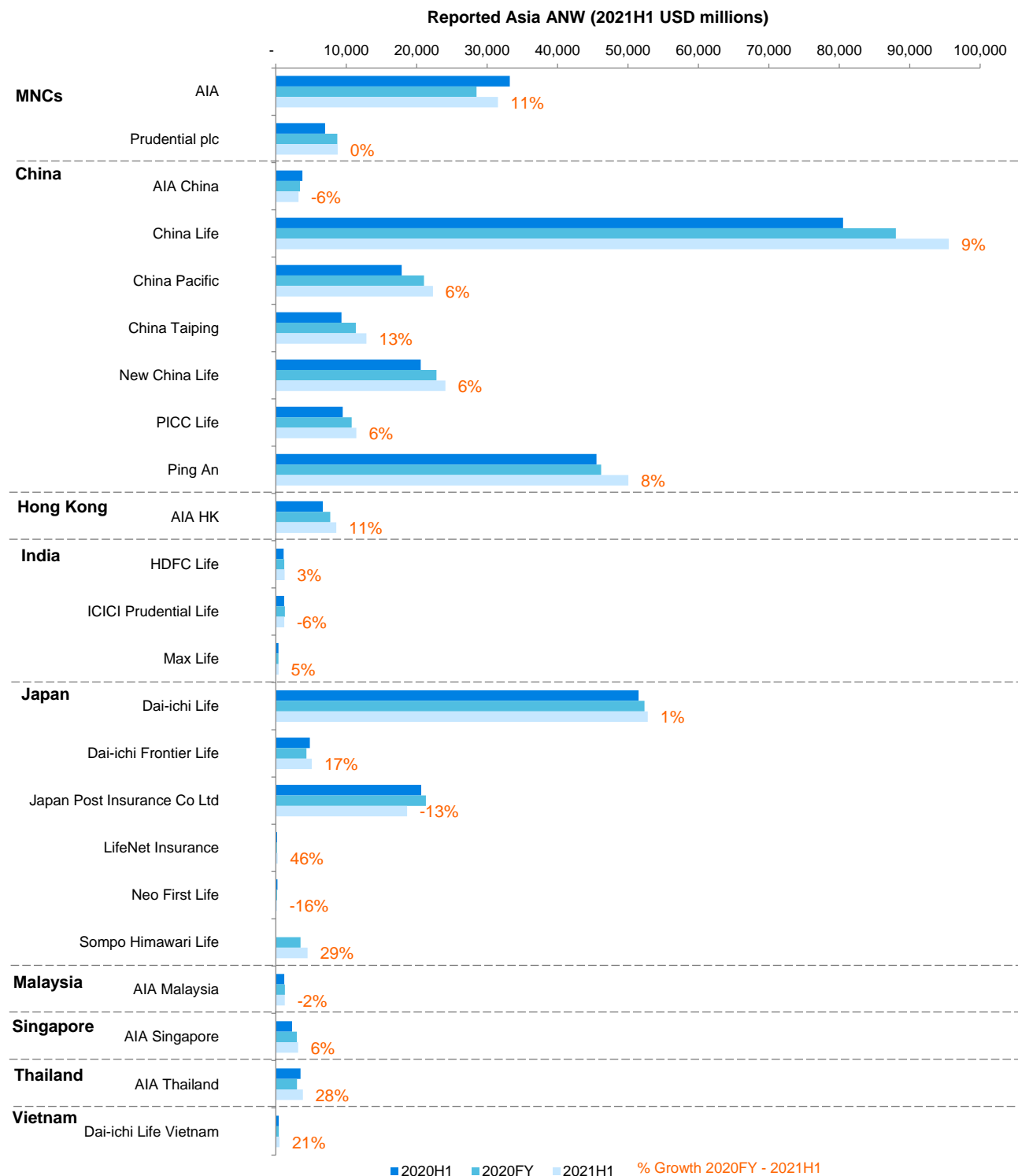
DISCLOSED ASIAN EV BY COMPANY AS AT 2021 H1 REPORTING YEAR (USD MILLIONS<sup>22</sup>)

Type	Company	Financial Year End	EV Principle	China	Hong Kong	India	Japan	South Korea	Malaysia	Singapore	Taiwan	Thailand	Indonesia	Philippines	Vietnam	Other Asia/ Unallocated
MNCs	AIA	30-Jun-21	TEV	12,215	24,111	-	-	-	3,197	6,926	-	7,269	-	-	-	14,461
	Prudential plc	30-Jun-21	EEV	3,049	20,951	-	-	-	3,814	7,917	-	-	2,350	-	-	5,601
China	China Life	30-Jun-21	TEV	176,945	-	-	-	-	-	-	-	-	-	-	-	-
	China Pacific	30-Jun-21	TEV	55,029	-	-	-	-	-	-	-	-	-	-	-	-
	China Taiping	30-Jun-21	TEV	27,848	-	-	-	-	-	-	-	-	-	-	-	-
	New China Life	30-Jun-21	TEV	38,827	-	-	-	-	-	-	-	-	-	-	-	-
	PICC Life	30-Jun-21	TEV	16,889	-	-	-	-	-	-	-	-	-	-	-	-
	Ping An	30-Jun-21	TEV	133,712	-	-	-	-	-	-	-	-	-	-	-	-
India	Bajaj Allianz Life	30-Sep-21	MCEV	-	-	2,240	-	-	-	-	-	-	-	-	-	-
	Aditya Birla Sun Life	30-Sep-21	MCEV	-	-	945	-	-	-	-	-	-	-	-	-	-
	Exide Life	30-Sep-21	IEV	-	-	375	-	-	-	-	-	-	-	-	-	-
	HDFC Life	30-Sep-21	IEV	-	-	3,869	-	-	-	-	-	-	-	-	-	-
	ICICI Prudential Life	30-Sep-21	IEV	-	-	4,071	-	-	-	-	-	-	-	-	-	-
	Max Life	30-Sep-21	MCEV	-	-	1,751	-	-	-	-	-	-	-	-	-	-
	SBI Life	30-Sep-21	IEV	-	-	5,188	-	-	-	-	-	-	-	-	-	-
Japan	Daido Life	30-Sep-21	MCEV	-	-	-	18,947	-	-	-	-	-	-	-	-	-
	Dai-ichi Life	30-Sep-21	MC-EEV	-	-	-	48,508	-	-	-	-	-	-	-	-	-
	Dai-ichi Frontier Life	30-Sep-21	MC-EEV	-	-	-	5,240	-	-	-	-	-	-	-	-	-
	Japan Post Insurance Co Ltd	30-Sep-21	MC-EEV	-	-	-	33,999	-	-	-	-	-	-	-	-	-
	LifeNet Insurance	30-Sep-21	MC-EEV	-	-	-	1,005	-	-	-	-	-	-	-	-	-
	Neo First Life	30-Sep-21	MC-EEV	-	-	-	1,637	-	-	-	-	-	-	-	-	-
	T&D Financial Life	30-Sep-21	MCEV	-	-	-	1,012	-	-	-	-	-	-	-	-	-
	Taiyo Life	30-Sep-21	MCEV	-	-	-	10,326	-	-	-	-	-	-	-	-	-
Vietnam	Dai-ichi Life Vietnam	30-Jun-21	TEV	-	-	-	-	-	-	-	-	-	-	1,075	-	

<sup>22</sup> EV results have been converted at the prevailing USD mid-FX rate as at the reporting date.

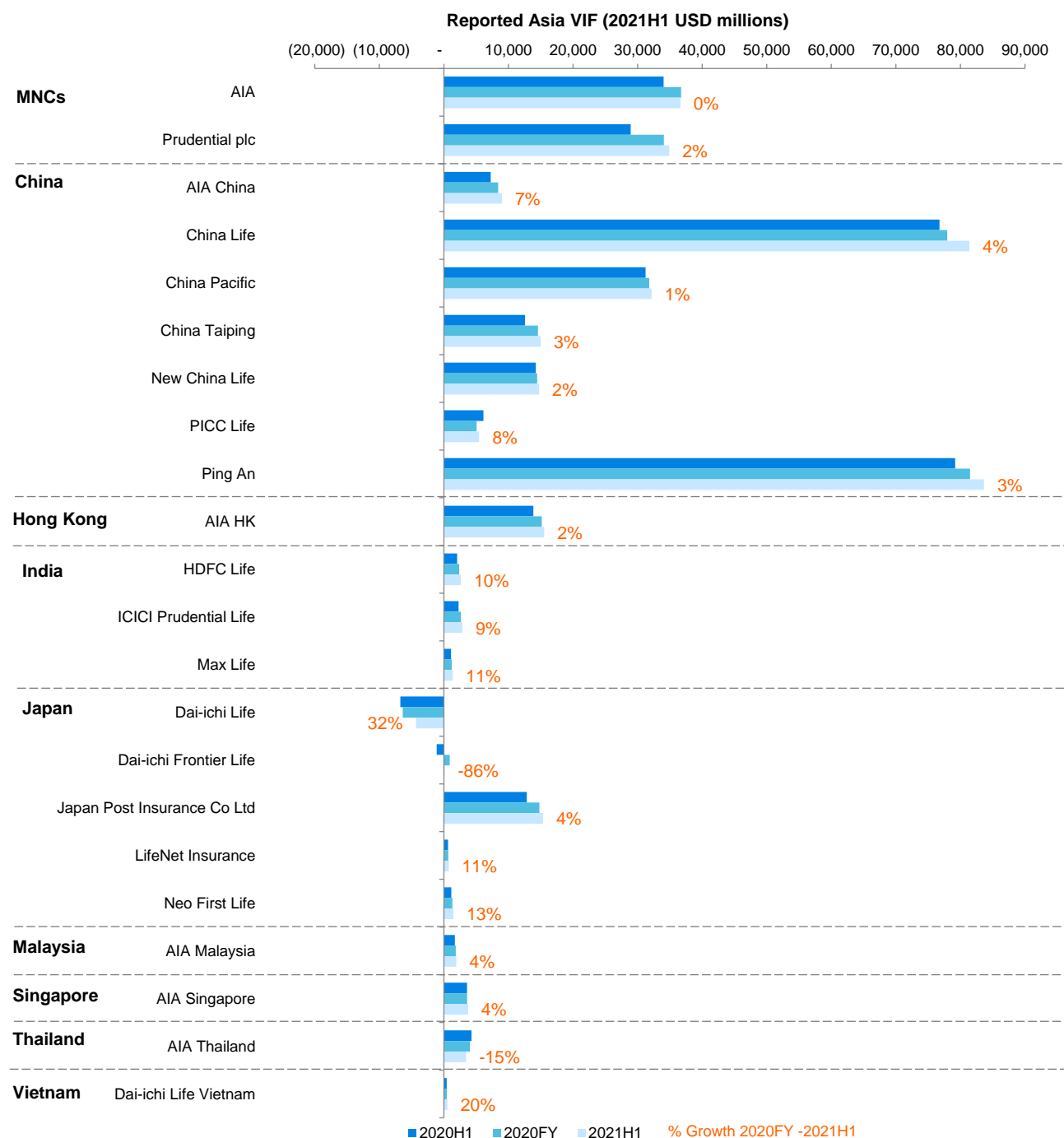
## Appendix B: Disclosed Asian ANW and VIF by company and by market

### REPORTED ASIA ANW (2021 H1 USD MILLIONS)<sup>23</sup>



<sup>23</sup> We have excluded those companies that have not reported 2020 H1 and 2021 H1 ANW.

REPORTED ASIA VIF (2021 H1 USD MILLIONS)<sup>24</sup>



<sup>24</sup> We have excluded those companies that have not reported 2020 H1 and 2021 H1 VIF.



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](https://www.milliman.com)

#### **CONTACT**

**Paul Sinnott**  
[paul.sinnott@milliman.com](mailto:paul.sinnott@milliman.com)

**Michael Daly**  
[michael.daly@milliman.com](mailto:michael.daly@milliman.com)

**Richard Holloway**  
[richard.holloway@milliman.com](mailto:richard.holloway@milliman.com)

**Wing Wong**  
[wing.wong@milliman.com](mailto:wing.wong@milliman.com)

**Chihong An**  
[chihong.an@milliman.com](mailto:chihong.an@milliman.com)

**Wen Yee Lee**  
[wenyee.lee@milliman.com](mailto:wenyee.lee@milliman.com)

**Stephen Conwill**  
[stephen.conwill@milliman.com](mailto:stephen.conwill@milliman.com)

**Philip Jackson**  
[philip.jackson@milliman.com](mailto:philip.jackson@milliman.com)

**Heerak Basu**  
[heerak.basu@milliman.com](mailto:heerak.basu@milliman.com)

**Shamit Gupta**  
[shamit.gupta@milliman.com](mailto:shamit.gupta@milliman.com)