#### MILLIMAN REPORT

# 2020 mid-year embedded value results: Asia

December 2020

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#### Opening remarks

We are pleased to present our Asian embedded value mid-year 2020 update. This report supplements the '2019 Embedded Value Results: Asia' report, which was released in August 2020, and provides a summary of the mid-year 2020 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 mixed across the Asian markets, with new business sales in some markets severely affected by government restrictions in response to the COVID-19 pandemic. For the insurers in Hong Kong, continuing social unrest, restrictions on travel from mainland China to Hong Kong, the impact of the virus outbreak, and the lower interest rates have contributed to the significant decline in VNB in the first half of the year. Insurers in the Japanese market reported mixed VNB growth in 2020 H1, reflecting the impact of the COVID-19 pandemic.

Best regards,

Paul Sinnott Michael Daly Richard Holloway Wing Wong Chihong An Wen Yee Lee Stephen Conwill Sanket Kawatkar Shamit Gupta

#### Introduction and background

With the backdrop of the COVID-19 pandemic, Asian equity markets experienced significant volatility over the past year, with all the indices recording a decline in the first quarter of 2020, prior to recovering thereafter (see Figure 1). Taiwan saw the strongest equity market gains across Asia, most likely as a result of the country's virus management being up with the best in the world. While China, Korea, Taiwan and Japan experienced an increase in equity indices, all other markets experienced small to moderate declines between 30 June 2019 and 30 September 2020.

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 2.3 FROM 30 JUNE 2019 TO 30 SEPTEMBER 2020

For the year up to 30 September 2020, while interest rates have generally declined as a fall out of the COVID-19 pandemic, interest rates in China, Indonesia and Thailand have increased slightly<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) and 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.

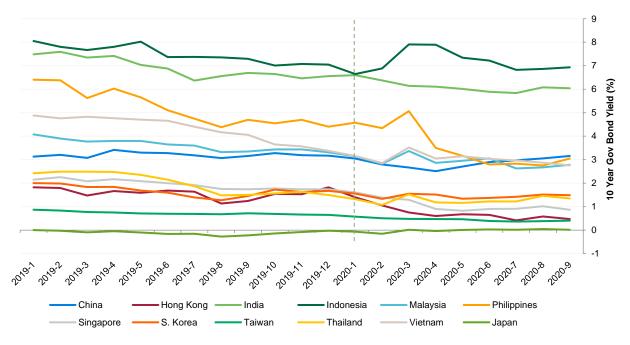
<sup>&</sup>lt;sup>1</sup> Asian markets which are considered for this report are China, Hong Kong SAR, India, Indonesia, Japan, Malaysia, Singapore, South Korea, Thailand and Taiwan.

<sup>&</sup>lt;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>&</sup>lt;sup>3</sup> Source: Investing.com.

<sup>&</sup>lt;sup>4</sup> Based on 10-year sovereign yields observed from January 2019 to September 2020.

FIGURE 2: 10-YEAR SOVEREIGN BOND YIELDS<sup>5</sup> 2019-2020



## Recent regulatory changes

In an effort to combat the COVID-19 outbreak this year, temporary measures were introduced in some markets by the regulatory authorities. Figure 3 provides a summary of these responses.

FIGURE 3: SUMMARY OF RECENT MEASURES RELATED TO COVID-19 BY JURISDICTION

| JURISDICTION | DESCRIPTION  |
|--------------|--|
| China        | China Banking and Insurance Regulatory Commission (CBIRC) encouraged insurers to speed up settlement for the claims due to COVID-19 and extend insurance coverage to include COVID-19.   |
| Hong Kong    | The Insurance Authority (IA) has announced the extension of the temporary facilitative measures (TFM) for non-face-to-face distribution of specific protective insurance products to 31 March 2021 in view of the latest developments of the pandemic.   |
| India        | Insurance Regulatory and Development Authority of India (IRDAI) has allowed exemptions from certain provisions of the regulations governing the issuance of e-insurance policies, in order to facilitate adoption of digital means of doing business amid the pandemic. The exemptions shall be valid for all policies issued during FY 2020-21.   |
|              | IRDAI has also permitted life insurers to make certain modifications in the Group Credit Life master policies issued, so as to align the cover available under such schemes with the revised loan repayment schedule in respect of members who have availed the facility of moratorium on re-payment of loan as announced by the reserve bank of India (RBI) in the wake of the COVID-19 pandemic. |
| Indonesia    | The Financial Services Authority (OJK) has eased rules related to the marketing of investment-related insurance products (PAYDI) by allowing the online sales of such products through the pandemic.   |
| Singapore    | The Life Insurance Association, Singapore (LIA Singapore) announced an extension to the six-month Deferred Premium Payment (DPP) scheme earlier announced in April 2020. It applies to policyholders in financial difficulties as a result of COVID-19 with premium due date or policy renewal date between 1 October 2020 and 31 March 2021 inclusive.  |

 $<sup>^{\</sup>rm 5}$  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 2019 H1 to 2020 H1. It only includes those companies that have reported their mid-year EV results before the cutoff date of this report, i.e., 22 November 2020.

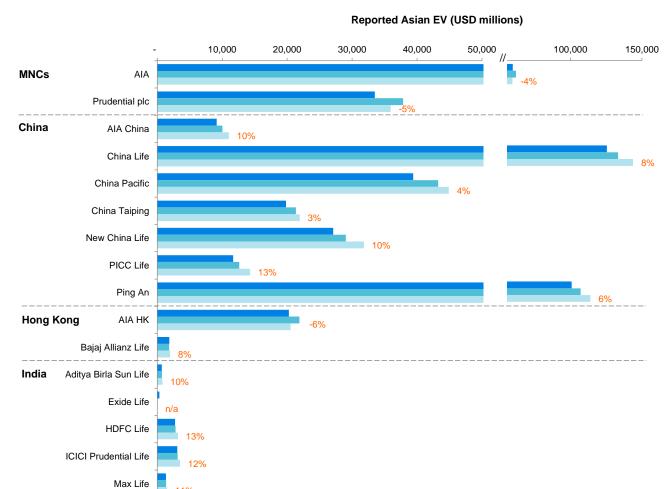


FIGURE 3: ASIAN LIFE INSURANCE COVERED BUSINESS EV BY COMPANY<sup>6,7,8</sup> 2019 H1 TO 2020 H1

Note: "n/a" implies that the company has not disclosed its 2020 H1 EV results at the time of writing this report.

■ 2019H1

2019FY

2020H1

% Growth 2019FY - 2020H1

SBI Life

<sup>&</sup>lt;sup>6</sup> The EV results for each company have been converted to USD at the foreign exchange (FX) rates prevailing as at their 2020 H1 reporting dates to remove most of the effect of currency fluctuations.

<sup>&</sup>lt;sup>7</sup> In this report, 2019 FY for Indian and Japanese insurers represents the financial year ending 31 March 2020; 2019 H1 and 2020 H1 represent the mid-year ending 30 September 2019 and 30 September 2020, respectively.

 $<sup>^{\</sup>rm 8}$  We have excluded those companies that have not reported 2019 H1 and 2020 H1 EV.

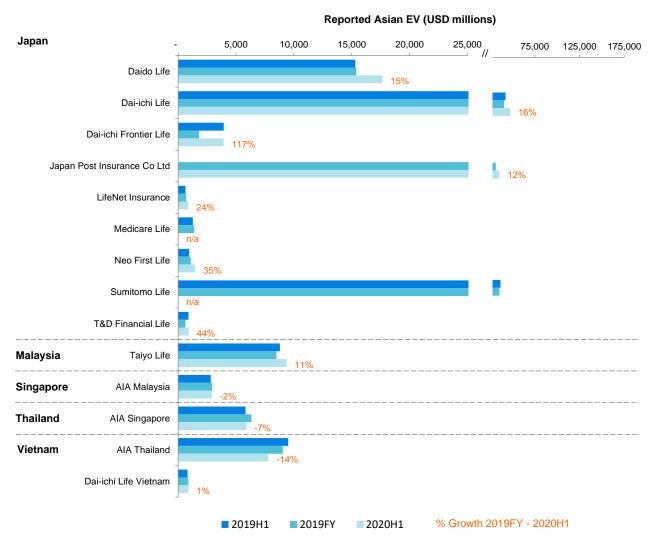


FIGURE 3: ASIAN LIFE INSURANCE COVERED BUSINESS EV BY COMPANY9,10,11 2019 H1 TO 2020 H1 (CONTINUED)

Note: "n/a" implies that the company has not disclosed its 2020H1 EV results at the time of writing this report.

Besides Prudential plc and subsidiaries of AIA in Hong Kong, Malaysia, Singapore and Thailand, all other companies reported positive increases in EV during 2020H1. AIA Group recorded a decline in EV of 4% during first half of 2020, mainly driven by the negative investment return variances and the impact from reductions in long-term economic assumptions. Prudential plc reported a fall in EV of 5%, as the positive impact of operating assumption and experience variances was offset by the impact of lower interest rates.

Japanese companies' EV increased primarily due to economic variances. The half-year rise in equity prices, in spite of COVID-19, contributed to an increase in Adjusted New Worth (ANW), while the slight increase in ultra-long-term interest rates improved Value of In-force business (VIF).

<sup>&</sup>lt;sup>9</sup> The EV results for each company have been converted to USD at the foreign exchange (FX) rates prevailing as at their 2020H1 reporting dates to remove most of the effect of currency fluctuations.

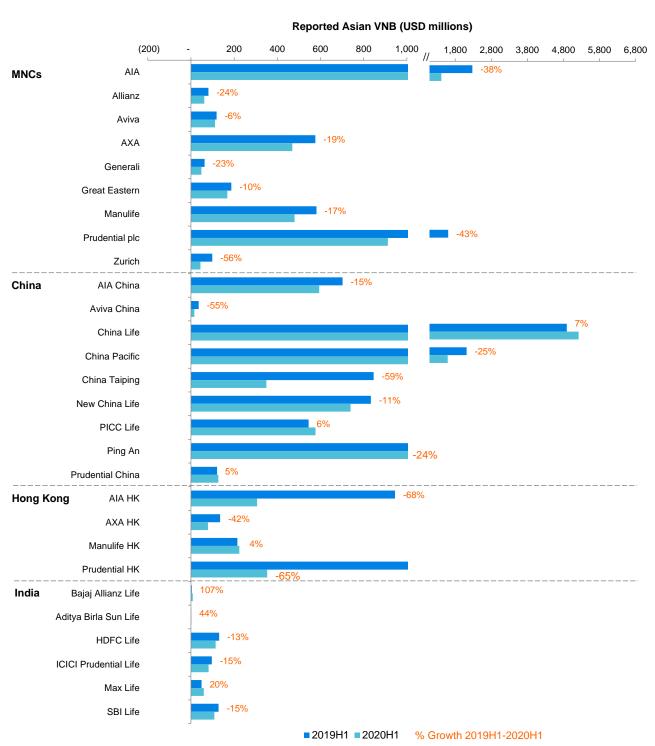
<sup>&</sup>lt;sup>10</sup> In this report, 2019FY for Indian and Japanese insurers represents the financial year ending 31 March 2020; 2019H1 and 2020H1 represent the mid-year ending 30 September 2019 and 30 September 2020, respectively.

<sup>&</sup>lt;sup>11</sup> We have excluded those companies that have not reported 2019H1 and 2020H1 EV.

#### Value of new business results

The chart in Figure 4 compares the 2019 H1 and 2020 H1 VNB results by company within the different Asian markets. 12,13

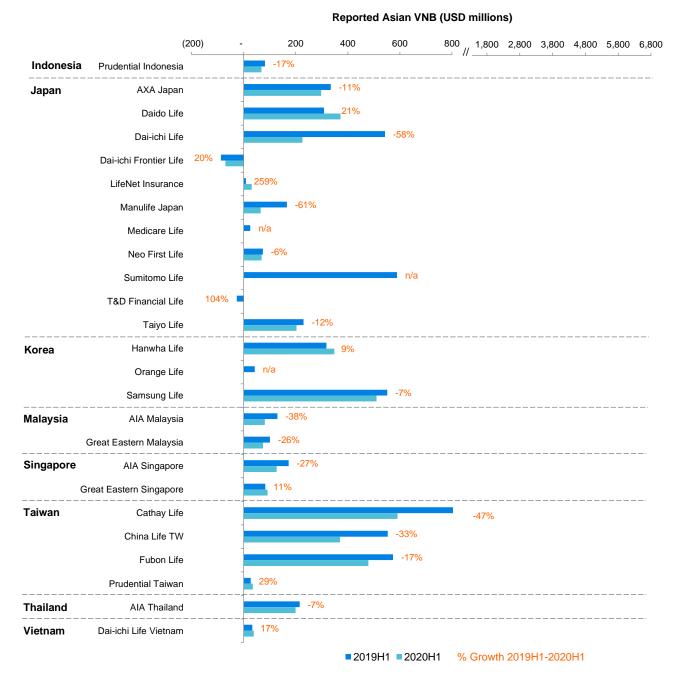
FIGURE 4: ASIAN VNB BY COMPANY 2019 H1 AND 2020 H1



<sup>&</sup>lt;sup>12</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.

 $<sup>^{\</sup>rm 13}\,\rm We$  have excluded those companies that have not reported 2019 H1 and 2020 H1 VNB.

FIGURE 4: ASIAN VNB BY COMPANY 2019 H1 AND 2020 H1 (CONTINUED)



Most of the insurers in Asia reported declines in the VNB during the first half of 2020 as compared to the first half of 2019. The declines in VNB generally reflect the COVID-19-related reductions in sales due to government-imposed lockdowns across the region. All the multinational corporations (MNCs) disclosing results reported a decline in VNB, with Zurich reporting the highest VNB decline of 56%. The company attributed the fall in VNB to lower new business sales, unfavorable economic changes mainly due to the reduction in yields, and changes to operating assumptions in key markets in the region. AlA reported a decline of 38% in VNB primarily driven by reduced sales (due to COVID-19 lockdowns) in its main markets of Hong Kong and China. The sharp slowdown in growth can also be linked to the anti-government protests earlier in the year and the associated economic downturn.

In China, which entered and exited lockdown earlier than other Asian markets, the VNB in 2020 H1 declined for all insurers except China Life, PICC Life and Prudential. China Taiping recorded the highest fall of 59%, followed by China Pacific, with a decline of 25% in VNB. Both companies cited lower new business sales due to COVID-19 as the reason for the decline. On the contrary, Prudential China recorded a VNB growth of 5% in 2020 H1, attributing the growth to its geographical expansion in the market, balanced distribution channel and product strategies. Both China Life and PICC Life focused on product innovations and accelerated digital transformation, which helped increase the new business sales during the pandemic.

All life insurers in Hong Kong included in the report recorded significant declines in VNB, except Manulife where VNB rose. AlA Hong Kong recorded the largest decline of 68% in VNB, mainly driven by the mandatory quarantine requirements for all arrivals from Mainland China since early February. Prudential Hong Kong's VNB decline of 65% was also primarily driven by continued restrictions on travel from Mainland China, with additional impact coming from lower interest rates. Manulife's APE had increased 21% year-on-year in first quarter of 2020, mainly driven by the continued success of Voluntary Health Insurance Scheme and Qualifying Deferred Annuity products and its agency channel performance. However, as a result of COVID-19 travel restrictions, APE decreased by 8% in the second quarter of 2020 due to lower sales to mainland Chinese visitors, partially offset by an increase in demand from local customers. Overall, there was a VNB growth of 4% in Manulife Hong Kong's business during 2020 H1, despite lower APE sales and lower interest rates during the second quarter.

In India, Bajaj Allianz Life, Aditya Birla Sun Life and Max Life recorded positive VNB growth during 2020 H1, while the other insurers reported declines in VNB. Bajaj Allianz Life reported VNB growth of 107% (a growth of INR 316 million in absolute terms), albeit from a very small base, mainly driven by diversified distribution mix, and higher volumes through scaling up of digital channels and partnerships. Aditya Birla Sun Life and Max Life also leveraged technology for new business sales and policy renewals. On the other hand, HDFC Life and SBI Life reported a decline in VNB of 13% and 15% respectively. SBI Life's decline in VNB was mainly driven by lower business volumes and change in economic assumptions, while HDFC Life cited lower APE sales, changes in assumptions and fixed costs absorption as the main reasons for the decline in VNB.

In Japan, mainly due to COVID-19, new sales significantly decreased for most of the insurers, even from the reduced level due to the large decrease in COLI business and foreign currency denominated savings products in the last year. Lifenet, a pioneer of online distribution, was an exception, recording very strong growth of 259%, though its market share remains small. Many Japanese companies are now accelerating their digital transformation efforts to try to adapt to the new normal.

AIA Malaysia reported a 38% reduction in VNB resulting from the decline in new business sales during the peak of the COVID-19 movement restrictions in April, which was partly offset by strong double-digit month-on-month growth across all distribution channels in May and June. VNB for Great Eastern Malaysia also declined by 26% in 2020 H1 due to lower sales due to COVID-19 restrictions.

In Singapore, while AIA reported a decline in VNB of 27%, Great Eastern reported an increase in VNB of 11%. AIA's decline in VNB was largely a result of containment measures that were implemented in the second quarter of 2020. Great Eastern attributed its increase in VNB to its growth in sales through a successful adoption of digital technology by its agency channel, which was enabled by major digital and infrastructure-related initiatives taken during the preceding two years.

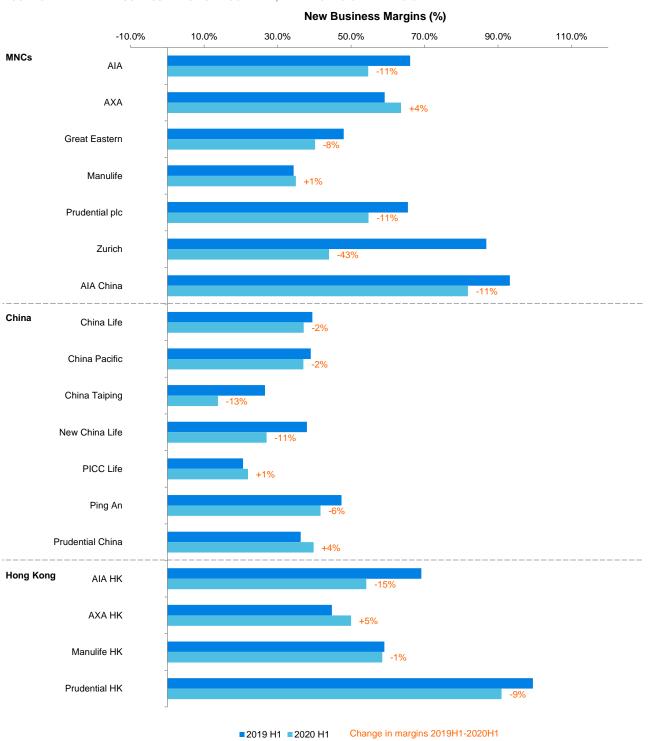
In South Korea, Samsung Life's VNB declined by 7% due to the decreased volumes, product mix change and unfavourable economic assumption adjustments.

Except Prudential Taiwan, all other insurers recorded a decline in VNB in Taiwan. Prudential attributed its VNB growth of 29% to increased sales in the second quarter, as a result of the easing of COVID-19 restrictions. On the other hand, Cathay Life's VNB declined by 47% due to lower sales volume and product mix change impacted by COVID-19 pandemic and lower reserving interest rates for new policies.

AIA Thailand reported a VNB fall of 7%, impacted by the spread of COVID-19; however, as government restrictions eased in June, the increased sales momentum offset some of the negative impact in the first half.

## New business margin results

FIGURE 5: IMPLIED NEW BUSINESS MARGINS BY COMPANY,14,15,16,17 FOR 2019 H1 AND 2020 H1

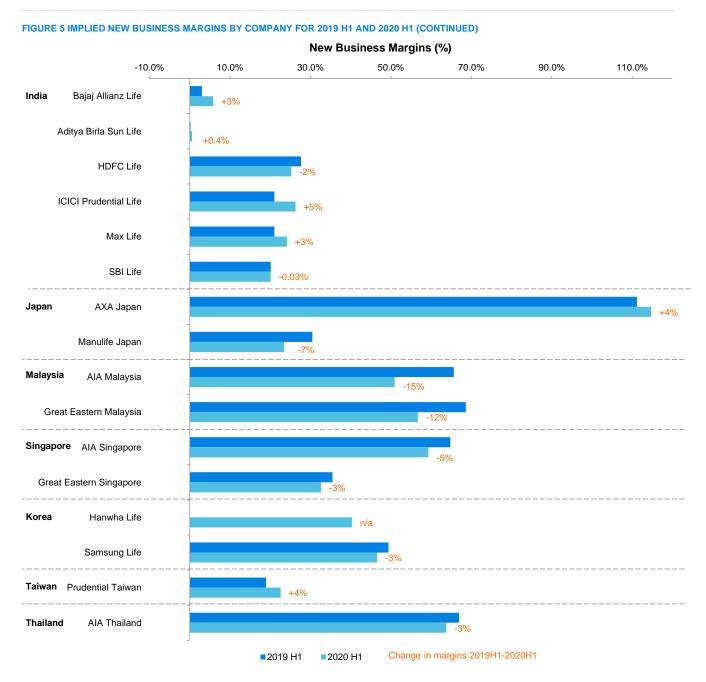


 $<sup>^{\</sup>rm 14}$  For the MNCs, please note that these are the margins relating to their Asian business.

<sup>&</sup>lt;sup>15</sup> New business margin is defined as VNB divided by APE. We have excluded Japan 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 2019 H1 and 2020 H1 new business margins.

<sup>&</sup>lt;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.



In comparison to the first half of 2019, in the first half of 2020, changes in new business margins were varied. Most insurers across Asia reported a decrease in new business margins, although a few reported increases.

The following companies had a significant drop in new business margins (in relative terms):

- Zurich, from 87% to 44%
- AIA Hong Kong, from 69% to 54%
- AIA Malaysia, from 65% to 51%

AIA Group attributed the fall in its new business margin of 11 percentage points (pps) to combination of a shift to lower margin deferred annuities in Hong Kong, and participating products in mainland China. In Singapore, AIA's new business margins decreased by 5 pps, mainly from acquisition expense overruns and a higher proportion of single premium unit-linked business. Similarly, AIA Malaysia's new business margin declined by 15 pps due to a higher mix of group insurance business and acquisition expense overruns.

In contrast, AXA Hong Kong and ICICI Prudential Life recorded the highest growth in new business margin of 5 pps.

## 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 MNCS18

| TYPE | COMPANY        | EV<br>PRINCIPLE | RDR  | INVESTMENT RETURNS   |
|------|----------------|-----------------|--|--|
| MNC  | AIA            | TEV             | China: 9.75% Hong Kong: 7.00% Indonesia: 13.00% Korea: 8.10% Malaysia: 8.55% Philippines (Philam Life): 11.80% Singapore: 6.60% Sri Lanka: 15.70% Taiwan: 7.55% Thailand: 7.90 % Vietnam: 9.80%  | 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 5.90%, 10Y Gov't Bonds Current 0.45%, Long Term 1.30% 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.  |
|      | Aviva          | SII             | Risk-free interest rate curves,<br>allowing for credit risk adjustment,<br>volatility adjustment and matching<br>adjustment.   | Risk-free interest rate curves, allowing for credit risk adjustment, volatility adjustment and matching adjustment.  |
|      | AXA            | EEV             | Risk-free interest rate curves,<br>allowing for credit risk adjustment<br>and volatility adjustment.   | Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment.   |
|      | Great Eastern  | TEV             | Singapore: 7.00%<br>Malaysia: 8.75%<br>Indonesia: 13.5%  | Not disclosed.   |
|      | Manulife       | TEV             | Hong Kong: 9.00%<br>Japan: 5.75%   | Hong Kong: Equity 9.50%, 10Y Gov't Bonds (immediate to ultimate reinvestment rate): 1.78% to 4.10% Japan: Equity 6.00%, 10Y Gov't Bonds (immediate to ultimate reinvestment rate): -0.03% to 3.44%   |
|      | Prudential plc | EEV             | China: 7.9% (NB), 7.9% (IF)<br>Hong Kong: 1.8% (NB), 2.7% (IF)<br>Indonesia: 10.6% (NB), 10.6% (IF)<br>Malaysia: 5.5% (NB), 5.6% (IF)<br>Philippines: 10.7% (NB), 10.7% (IF)<br>Singapore: 2.5% (NB), 3.0% (IF)<br>Taiwan: 2.8% (NB), 2.4% (IF)<br>Thailand: 9.1% (NB), 9.1% (IF)<br>Vietnam: 4.7% (NB), 5.0% (IF) | China: 10Y Gov't Bonds 2.9% Hong Kong: 10Y Gov't Bonds 0.7% Indonesia: 10Y Gov't Bonds 7.8% Malaysia: 10Y Gov't Bonds 3.0% Philippines: 10Y Gov't Bonds 2.9% Singapore: 10Y Gov't Bonds 1.0% Taiwan: 10Y Gov't Bonds 0.5% Thailand: 10Y Gov't Bonds 1.4% Vietnam: 10Y Gov't Bonds 3.0%   |
|      | Zurich         | MCEV            | Swap rates, allowing for volatility adjustment.  | Swap rates, allowing for volatility adjustment.  |

Note: Blue-shaded entries indicate that the 2020 H1 EV assumptions for the company have not yet been disclosed, thus the stated assumptions have been based on FY 2019 disclosures instead.

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

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

| MARKET    | COMPANY   | EV<br>PRINCIPLE  | INVESTMENT RETURNS   |  |  |  |  |  |  |  |  |
|-----------|---|------------------|--|--|--|--|--|--|--|--|--|
| China     | Chinese 10-year gove  | rnment bond yiel | d at 30 June 2020: 2.895%  |  |  |  |  |  |  |  |  |
|           | AIA   | TEV              | 9.75%  | 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%.<br>Short-term business: based on the latest 1-year bank<br>deposit base rate.   |  |  |  |  |  |  |  |
|           | China Taiping   | TEV              | 11.00%   | Assumed to be 4.80% with an increase of 0.05% annually up to 5.00% and thereafter remain unchange  |  |  |  |  |  |  |  |
|           | New China Life  | TEV              | 11.00%   | Year 1: 4.50% (non-linked), 7.60% (linked) Year 2: 4.60% (non-linked), 4.7% (universal life), 7.60 (linked) Year 3: 4.80% (non-linked), 5.00% (universal life), 7.80% (linked) Year 4+: 5.00% (non-linked), 5.10% (universal life), 7.90% (linked) |  |  |  |  |  |  |  |
|           | PICC Life   | TEV              | 10.00%   | 5.25%  |  |  |  |  |  |  |  |
|           | Ping An TEV   |                  | 11.00%   | Non-investment-linked: 4.75% in Year 1 and 5.00 thereafter. Investment-linked: slightly higher than non-invest linked.   |  |  |  |  |  |  |  |
|           | Prudential  | EEV              | 7.9% (NB), 7.9% (IF)   | 10Y Gov't Bonds 2.9%   |  |  |  |  |  |  |  |
| Hong Kong | Hong Kong 10-year government bond yield at 30 June 2020: 0.651%   |                  |  |  |  |  |  |  |  |  |  |
|           | 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: 9.00%   | Hong Kong: Equity 9.50%, 10Y Gov't Bonds (immediato ultimate reinvestment rate): 1.78% to 4.10%  |  |  |  |  |  |  |  |
|           | Prudential  | EEV              | 1.8% (NB), 2.7% (IF)   | 10Y Gov't Bonds 0.7%   |  |  |  |  |  |  |  |
| ndia      | Indian 10-year government bond yield at 30 September 2020: 6.051% |                  |  |  |  |  |  |  |  |  |  |
|           | Bajaj Allianz   | MCEV             | Risk-free yield curve.   | Risk-free yield curve.   |  |  |  |  |  |  |  |
|           | Aditya Birla Sun Life   | MCEV             | Not disclosed (although expected to be risk-free yield curve given the valuation methodology). | Not disclosed (although expected to be risk-free y 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              | 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).   |  |  |  |  |  |  |  |
|           | SBI Life  | IEV              | Risk-free yield curve.   | Risk-free yield curve.   |  |  |  |  |  |  |  |

 $<sup>^{\</sup>rm 19}$  NB: new business; IF: in-force business.

 $<sup>^{\</sup>rm 20}$  Source for 10-year government bond yields: Investing.com.

<sup>&</sup>lt;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 2020 (i.e., at the mid-year valuation date for these companies).

| MARKET | COMPANY                                   | EV<br>PRINCIPLE | RDR  | INVESTMENT RETURNS  |
|--------|---|-----------------|--|---|
| Japan  | Japanese 10-year gover                    | nment bond yie  | eld at 30 September 2020: 0.016%   |   |
|        | AXA                                       | MCEEV           | Risk-free interest rate curves,<br>allowing for credit risk adjustment<br>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): -0.03% to 3.44% |
|        | Daido Life                                | MCEV            | Risk-free rate: Based on JGB and UFRs.   | Risk-free interest rate curves.   |
|        |   |                 | Risk-free rate (Foreign currencies): Based on swap rates extrapolated by assuming that forward rates in after the latest market data point available are flat.                               |   |
|        | Dai-ichi Life                             | MCEEV           | 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                     | Risk-free interest rate curves.   |
|        |   |                 | were equal to those in the 30th year.  |   |
|        | Dai-ichi Frontier Life                    | MCEEV           | Risk-free rate (JPY): Based on JGB and UFRs.   | Risk-free interest rate curves.   |
|        |   |                 | 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.                            |   |
|        | Japan Post Insurance<br>Co Ltd            | MCEEV           | Risk-free rate (based on JGB and UFRs).  | Risk-free interest rate curves.   |
|        | LifeNet Insurance                         | MCEEV           | Risk-free rate (based on swap rates and UFRs).   | Risk-free interest rate curves.   |
|        | Medicare Life                             | MCEEV           | Risk-free rate (Based on Japanese, U.S. and Australian Government Bond and UFRs).  | Risk-free interest rate curves.   |
|        | Meiji Yasuda Life                         | MCEEV           | Risk-free rate (based on JGB).   | Risk-free interest rate curves.   |
|        | MS&AD Aioi Life                           | MCEEV           | Risk-free rate: Based on JGB and extrapolated by assuming forward rates in the 41st year and beyond were equal to those in the 40th year.  | Risk-free interest rate curves.   |
|        | MS&AD Primary Life                        | MCEEV           | JPY swap rates extrapolated by<br>assuming forward rates in the<br>41st year and beyond were equal<br>to those in the 40th year. USD<br>and AUD swap rates allow for<br>illiquidity premium. | Risk-free interest rate curves.   |
|        | Neo First Life                            | MCEEV           | Risk-free rate (JPY): Based on JGB and UFRs.   | Risk-free interest rate curves.   |
|        |   |                 | 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.                       |   |
|        | Sompo Japan<br>Nipponkoa Himawari<br>Life | MCEV            | Risk-free rate (based on<br>Japanese Government Bond and<br>ultimate forward rates).   | Risk-free interest rate curves.   |
|        | Sony Life                                 | MCEV            | Risk-free rate (based on JGB and US. Treasury yields and ultimate forward rates).  | Risk-free interest rate curves.   |
|        |   |                 |  |   |

| MARKET      | COMPANY   | EV<br>PRINCIPLE | RDR  | INVESTMENT RETURNS  |  |  |  |  |  |  |
|-------------|---|-----------------|--|---|--|--|--|--|--|--|
|             | Sumitomo Life   | MCEEV           | Risk-free rate (based on<br>Japanese, US. and Australian<br>Government Bond and ultimate<br>forward rates).  | Risk-free interest rate curves.   |  |  |  |  |  |  |
|             | T&D Financial Life  | MCEV            | Risk-free rate (JPY): Based on JGB and UFRs.   | Risk-free interest rate curves.   |  |  |  |  |  |  |
|             |   |                 | Risk-free rate (Foreign currencies): Based on swap rates extrapolated by assuming that forward rates in after the latest market data point available are flat.   |   |  |  |  |  |  |  |
|             | Taiyo Life  | MCEV            | Risk-free rate (JPY): Based on JGB and UFRs. Risk-free rate (Foreign currencies): Based on swap rates extrapolated by assuming that forward rates after the latest market data point available are flat.   | Risk-free interest rate curves.   |  |  |  |  |  |  |
|             | Tokio Marine & Nichido<br>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.   |  |  |  |  |  |  |
| Indonesia   | Indonesian 10-year government bond yield at 30 June 2020: 7.215%  |                 |  |   |  |  |  |  |  |  |
|             | AIA   | TEV             | 13.00%   | Equities 12.0%, 10Y Gov't Bonds 7.50%   |  |  |  |  |  |  |
|             | Prudential  | EEV             | 10.6% (NB), 10.6% (IF)   | 10Y Gov't Bonds 7.8%  |  |  |  |  |  |  |
| Malaysia    | Malaysian 10-year government bond yield at 30 June 2020: 3.057%   |                 |  |   |  |  |  |  |  |  |
|             | AIA   | TEV             | 8.55%  | Equities 8.60%, 10Y Gov't Bonds 4.00%   |  |  |  |  |  |  |
|             | Great Eastern   | TEV             | Malaysia: 8.75%  | Not disclosed.  |  |  |  |  |  |  |
|             | Prudential  | EEV             | 5.5% (NB), 5.6% (IF)   | 10Y Gov't Bonds 3.0%  |  |  |  |  |  |  |
| Philippines | Philippines 10-year government bond yield at 30 June 2020: 2.794% |                 |  |   |  |  |  |  |  |  |
|             | AIA   | TEV             | 11.8%  | Equities 10.50%, 10Y Gov't Bonds 5.30%  |  |  |  |  |  |  |
|             | Prudential  | EEV             | 10.7% (NB), 10.7% (IF)   | 10Y Gov't Bonds 2.9%  |  |  |  |  |  |  |
| Singapore   | Singaporean 10-year go  | vernment bond   | l yield at 30 June 2020: 0.899%  |   |  |  |  |  |  |  |
|             | 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: 7.00%   | Not disclosed.  |  |  |  |  |  |  |
|             | Prudential  | EEV             | 2.5% (NB), 3.0% (IF)   | 10Y Gov't Bonds 1.0%  |  |  |  |  |  |  |
| South Korea | Korean 10-year governn  | nent bond yield | at 30 June 2020: 1.369%  |   |  |  |  |  |  |  |
|             | AIA   | TEV             | 8.10%  | Equities 6.50%, 10Y Gov't Bonds 2.20%   |  |  |  |  |  |  |
|             | Hanwha Life   | TEV             | Not disclosed.   | Not disclosed.  |  |  |  |  |  |  |
|             | Orange Life   | TEV             | Not disclosed.   | Not disclosed.  |  |  |  |  |  |  |
|             | Samsung Life  | TEV             | 7.50%  | 2.90%   |  |  |  |  |  |  |
|             | Samsung Fire & Marine   | TEV             | 8.50%  | 3.30%   |  |  |  |  |  |  |
|             |   |                 |  |   |  |  |  |  |  |  |

| MARKET   | COMPANY   | EV<br>PRINCIPLE             | RDR                           | INVESTMENT RETURNS   |  |  |  |  |  |  |  |
|----------|---|-----------------------------|-------------------------------|--|--|--|--|--|--|--|--|
| Taiwan   | Taiwanese 10-year government bond yield at 30 June 2020: 0.395% |                             |                               |  |  |  |  |  |  |  |  |
|          | AIA   | TEV                         | 7.55%                         | Equities 5.90%, 10Y Gov't Bonds Current 0.45%, Long Term 1.30%   |  |  |  |  |  |  |  |
|          | Cathay Life   | TEV                         | 9.50%                         | VNB TWD Products: 2.41% ~ 4.35% (2039+) USD Products: 3.86% ~ 5.15% (2039+) VIF TWD Products: 3.57% ~ 4.61% (2039+) USD Products: 4.36% ~ 5.24% (2039+)  |  |  |  |  |  |  |  |
|          | China Life TW   | China Life TW TEV 9.50%     |                               | TWD Policies: Year 1 ~ Year 19: 3.50% ~ 4.88% Year 20+: 4.88% Non-TWD Policies: Year 1 ~ Year 19: 4.30% ~ 5.20% Year 20+: 5.20%  |  |  |  |  |  |  |  |
|          | Fubon Life TEV VNB: 10.5% VIF: 11.0%                            |                             | VNB: 10.5% VIF: 11.0%         | VNB  NTD Traditional Policies: Year 2019 to Year 2048 at 2.91% ~ 4.91% (2049+)  USD Policies: Year 2019 to Year 2042 at 3.51% ~ 5.50% (2043+)  VIF  NTD Traditional Policies: Year 2020 to Year 2044 at 3.47% ~ 5.00% (2045+)  USD Policies: Year 2020 to Year 2042 at 4.32% ~ 5.52% (2043+) |  |  |  |  |  |  |  |
|          | Mercuries Life  | Mercuries Life TEV          |                               | Not disclosed.   |  |  |  |  |  |  |  |
|          | Prudential  | EEV                         | 2.8% (NB), 2.4% (IF)          | 10Y Gov't Bonds 0.5%   |  |  |  |  |  |  |  |
|          | Shin Kong Life  | ong Life TEV Not disclosed. |                               | Not disclosed.   |  |  |  |  |  |  |  |
|          | Taiwan Life   | TEV                         | Not disclosed.                | Not disclosed.   |  |  |  |  |  |  |  |
| Thailand | Thai 10-year governme   | ent bond yield a            | t 30 June 2020: 1.220%        |  |  |  |  |  |  |  |  |
|          | AIA   | TEV                         | 7.90%                         | Equities 7.70%, 10Y Gov't Bonds 2.70%  |  |  |  |  |  |  |  |
|          | Bangkok Life  | TEV                         | 8.30%                         | 3.50%  |  |  |  |  |  |  |  |
|          | Prudential  | EEV                         | 9.1% (NB), 9.1% (IF)          | 10Y Gov't Bonds 1.4%   |  |  |  |  |  |  |  |
| Vietnam  | Vietnamese 10-year go   | overnment bond              | yield at 30 June 2020: 3.033% |  |  |  |  |  |  |  |  |
|          | AIA   | TEV                         | 9.80%                         | Equities 9.30%, 10Y Gov't Bonds 4.0%   |  |  |  |  |  |  |  |
|          | Dai-ichi Life Vietnam   | TEV                         | Not disclosed.                | Not disclosed.   |  |  |  |  |  |  |  |
|          | Prudential  | EEV                         | 4.7% (NB), 5.0% (IF)          | 10Y Gov't Bonds 3%   |  |  |  |  |  |  |  |
|          |   |                             |                               |  |  |  |  |  |  |  |  |

Note: Blue-shaded entries indicate that the 2020 H1 EV assumptions for the company have not yet been disclosed, thus the stated assumptions have been based on FY 2019 disclosures instead.

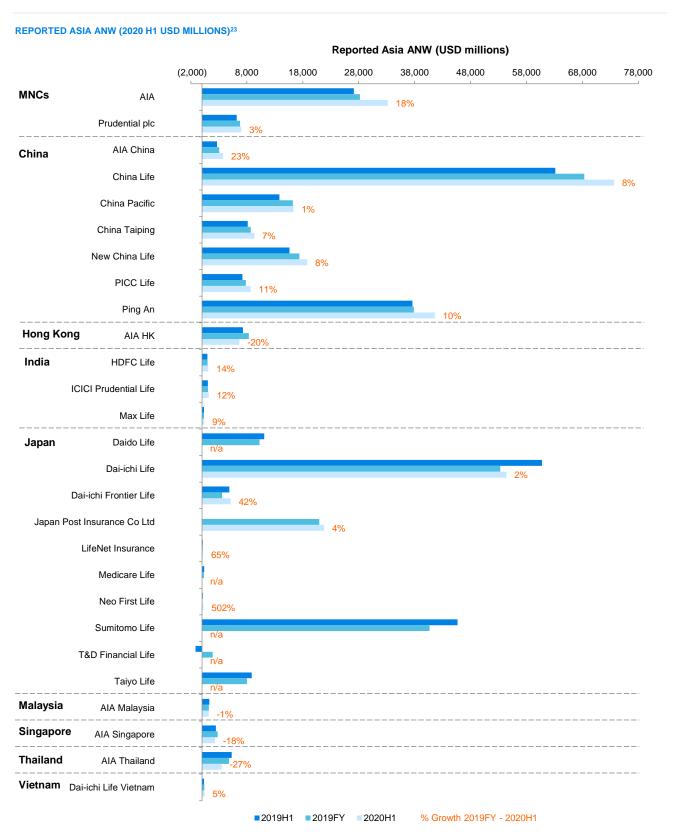
## Appendix A: Disclosed Asian EV by company and by market

#### DISCLOSED ASIAN EV BY COMPANY AS AT 2020 H1 REPORTING YEAR (USD MILLIONS<sup>22</sup>)

| Туре    | Company                              | Financial<br>Year End | EV Principle | China   | Hong Kong | India | Japan  | South Korea | Malaysia | Singapore | Taiwan | Thailand | Indonesia | Philippines | Vietnam | Other Asia/<br>Unallocated |
|---------|--------------------------------------|-----------------------|--------------|---------|-----------|-------|--------|-------------|----------|-----------|--------|----------|-----------|-------------|---------|----------------------------|
| MNCs    | AIA                                  | 30-Jun-20             | TEV          | 11,021  | 20,535    | -     | -      | -           | 2,896    | 5,884     | -      | 7,793    | -         | -           | -       | 11,445                     |
|         | Prudential plc                       | 30-Jun-20             | EEV          | -       | -         | -     | -      | -           | -        | -         | -      | -        | -         | -           | -       | 35,940                     |
|         | China Life                           | 30-Jun-20             | TEV          | 143,786 | -         | -     | -      | -           | -        | -         | -      | -        | -         | -           | -       | -                          |
|         | China<br>Pacific                     | 30-Jun-20             | TEV          | 44,889  | -         | -     | -      | -           | -        | -         | -      | -        | -         | -           | -       | -                          |
| China   | China<br>Taiping                     | 30-Jun-20             | TEV          | 21,932  | -         | -     | -      | -           | -        | -         | -      | -        | -         | -           | -       | -                          |
| Cilila  | New<br>China Life                    | 30-Jun-20             | TEV          | 31,812  | -         | -     | -      | -           | -        | -         | -      | -        | -         | -           | -       | -                          |
|         | PICC Life                            | 30-Jun-20             | TEV          | 14,291  | -         | -     | -      | -           | -        | -         | -      | -        | -         | -           | -       | -                          |
|         | Ping An                              | 30-Jun-20             | TEV          | 113,994 | -         | -     | -      | -           | -        | -         | -      | -        | -         | -           | -       | -                          |
|         | Bajaj<br>Allianz<br>Life             | 30-Sep-20             | MCEV         | -       | -         | 1,975 | -      | -           | -        | -         | -      | -        | -         | -           | -       | -                          |
|         | Aditya<br>Birla Sun<br>Life          | 30-Sep-20             | MCEV         | -       | -         | 779   | -      | -           | -        | -         | -      | -        | -         | -           | -       | -                          |
| India   | HDFC<br>Life                         | 30-Sep-20             | IEV          | -       | -         | 3,172 | -      | -           | -        | -         | -      | -        | -         | -           | -       | -                          |
|         | ICICI<br>Prudential<br>Life          | 30-Sep-20             | IEV          | -       | -         | 3,495 | -      | -           | -        | -         | -      | -        | -         | -           | -       | -                          |
|         | Max Life                             | 30-Sep-20             | MCEV         | -       | -         | 1,502 | -      | -           | -        | -         | -      | -        | -         | -           | -       | -                          |
|         | SBI Life                             | 30-Sep-20             | IEV          | -       | -         | 4,251 | -      | -           | -        | -         | -      | -        | -         | -           | -       | -                          |
|         | Daido Life                           | 30-Sep-20             | MCEV         | -       | -         | -     | 17,660 | -           | -        | -         | -      | -        | -         | -           | -       | -                          |
|         | Dai-ichi<br>Life                     | 30-Sep-20             | MC-EEV       | -       | -         | -     | 47,286 | -           | -        | -         | -      | -        | -         | -           | -       | -                          |
|         | Dai-ichi<br>Frontier<br>Life         | 30-Sep-20             | MC-EEV       | -       | -         | -     | 3,926  | -           | -        | -         | -      | -        | -         | -           | -       | -                          |
| Japan   | Japan<br>Post<br>Insurance<br>Co Ltd | 30-Sep-20             | MC-EEV       | -       | -         | -     | 35,365 | -           | -        | -         | -      | -        | -         | -           | -       | -                          |
|         | LifeNet<br>Insurance                 | 30-Sep-20             | MC-EEV       | -       | -         | -     | 864    | -           | -        | -         | -      | -        | -         | -           | -       | -                          |
|         | Neo First<br>Life                    | 30-Sep-20             | MC-EEV       | -       | -         | -     | 1,471  | -           | -        | -         | -      | -        | -         | -           | -       | -                          |
|         | T&D<br>Financial<br>Life             | 30-Sep-20             | MCEV         | -       | -         | -     | 906    | -           | -        | -         | -      | -        | -         | -           | -       | -                          |
|         | Taiyo Life                           | 30-Sep-20             | MCEV         | -       | -         | -     | 9,379  | -           | -        | -         | -      | -        | -         | -           | -       | -                          |
| Vietnam | Dai-ichi<br>Life<br>Vietnam          | 30-Jun-20             | TEV          | -       | -         | -     | -      | -           | -        | -         | -      | -        | -         | -           | 886     | -                          |

 $<sup>^{\</sup>rm 22}$  EV results have been converted at the prevailing USD mid-FX rate as at the reporting date.

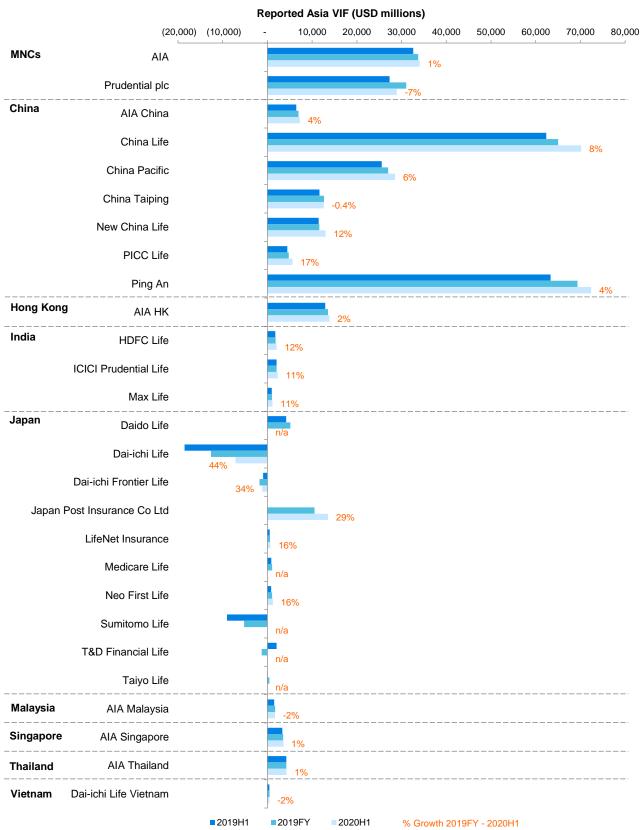
## Appendix B: Disclosed Asian ANW and VIF by company and by market



Note: "n/a" implies that the company has not disclosed its 2020 H1 ANW results at the time of writing this report.

<sup>&</sup>lt;sup>23</sup> We have excluded those companies that have not reported 2019 H1 and 2020 H1 ANW.

#### REPORTED ASIA VIF (2020 H1 USD MILLIONS)<sup>24</sup>



Note: "n/a" implies that the company has not disclosed its 2020H1 VIF results at the time of writing this report.

<sup>&</sup>lt;sup>24</sup> We have excluded those companies that have not reported 2019 H1 and 2020 H1 VIF.

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