

MILLIMAN REPORT

# 2020 embedded value results: Asia

Declining new business sales amidst COVID-19

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## Opening remarks

Thank you for taking the time to read the latest edition of Milliman's Asian embedded value (EV) report.

Despite declining economic activity across Asia in 2020 as a result of the COVID-19 pandemic, several of the region's emerging markets reported positive percentage rises in EV results for the year. Most of the Asian insurers disclosing value of new business (VNB) results reported reduced VNB results for 2020, primarily reflecting the adverse impact on sales from government-imposed lockdowns across the region. The Asian equity markets were volatile during 2020 but recovered from initial falls in the early months of 2020 caused by the onset of the pandemic.

Our report compares and contrasts the various approaches taken to EV reporting across Asian markets and insurers. A subsequent report containing commentary on the reported mid-year 2021 EV results, as well as any 2020 year-end reporting not disclosed in time for this report, will be produced later in the year. A report on shareholder value reporting in Europe will be available in November 2021.

Once again, we would appreciate any feedback you have on our report content and format.

Best regards,

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## Executive summary

### BACKGROUND

Economic activity in Asia reduced during 2020, with regional gross domestic product (GDP)<sup>1</sup> declining by 1.0%, although performance was better than the global GDP decline of 3.3%. Taiwan, Vietnam, and China posted the highest 2020 GDP growth rates of 3.1%, 2.9%, and 2.3%, respectively.

Total life insurance gross written premium (GWP)<sup>2</sup> for the markets covered in our report decreased slightly by 0.4% in 2020. Vietnam reported the largest increase in GWP (an increase of USD 1 billion in absolute terms), while Taiwan recorded the largest fall in GWP.

VNB results for most of Asian life insurers declined in 2020 due to COVID-19-related lockdowns which restricted sales activity across the region. In Hong Kong, continued restrictions on Mainland Chinese Visitors (MCV) travel also contributed to significant falls in new business. During the second half of the year, new business sales for some insurers across Asia recovered, mainly due to less stringent lockdowns, digital acceleration, and product innovations.

On a comparable basis<sup>3</sup>, the overall new business annual premium equivalent (APE) declined in the region by 14% in 2020. Hong Kong was the worst hit, where COVID-19 related restrictions led to a 48% decline in new business APE.

Despite the pandemic, EV increased during the year in all markets except Thailand. While India and Japan recorded the highest EV growth in the region, largely due to positive economic variances, some insurers in other markets reported negative operating and economic variances, offsetting the increases from unwinding discount rates and VNB.

Japan and South Korea recorded significant growth in value of in-force (VIF) results during 2020. Increases in the Japanese Yen (JPY) and United States Dollar (USD) yield curves were the main causes of the rise in VIF in Japan, while insurers in South Korea attributed the growth in VIF to new business and changes in actuarial assumptions.

The EV methodologies used in the region remain varied, including Traditional Embedded Value (TEV), European Embedded Value (EEV), Market-Consistent Embedded Value (MCEV)<sup>4</sup> and Indian Embedded Value (IEV). As mentioned in last year's report, the number of European multinational corporations (MNCs) reporting EV has reduced since 2016, as their parent companies have switched to using Solvency II (SII) as their primary shareholder value reporting metric. Insurers in China, South Korea and Taiwan continue to report on a TEV basis, although South Korean insurers use stochastic methods to determine the time value cost of options and guarantees, for certain lines of variable business. In contrast, all insurers in Japan adopt MCEV or a Market-Consistent EEV (MC-EEV) approach. In India, almost all companies<sup>5</sup> that report EV now do so on an IEV or MCEV basis. Reliance Nippon Life, which last disclosed its EV results as at 31 March 2020, is the only company that still reports on a TEV basis.

<sup>1</sup> Real GDP. Sourced from the International Monetary Fund (IMF).

<sup>2</sup> Milliman has estimated market growth rates because not all Asian economies have reported their 2020 total GWPs as at the date of publication of this report. A more precise update will be presented in our report '2021 Mid-Year Embedded Value Results – Asia.' The GWP figures are estimated in USD terms.

<sup>3</sup> 'Comparable basis' refers to comparing only companies that have reported 2018, 2019, and 2020 EV results for Asia.

<sup>4</sup> The MCEV principles are a copyright of the Stichting CFO Forum Foundation 2008.

<sup>5</sup> Companies covered under this report only.

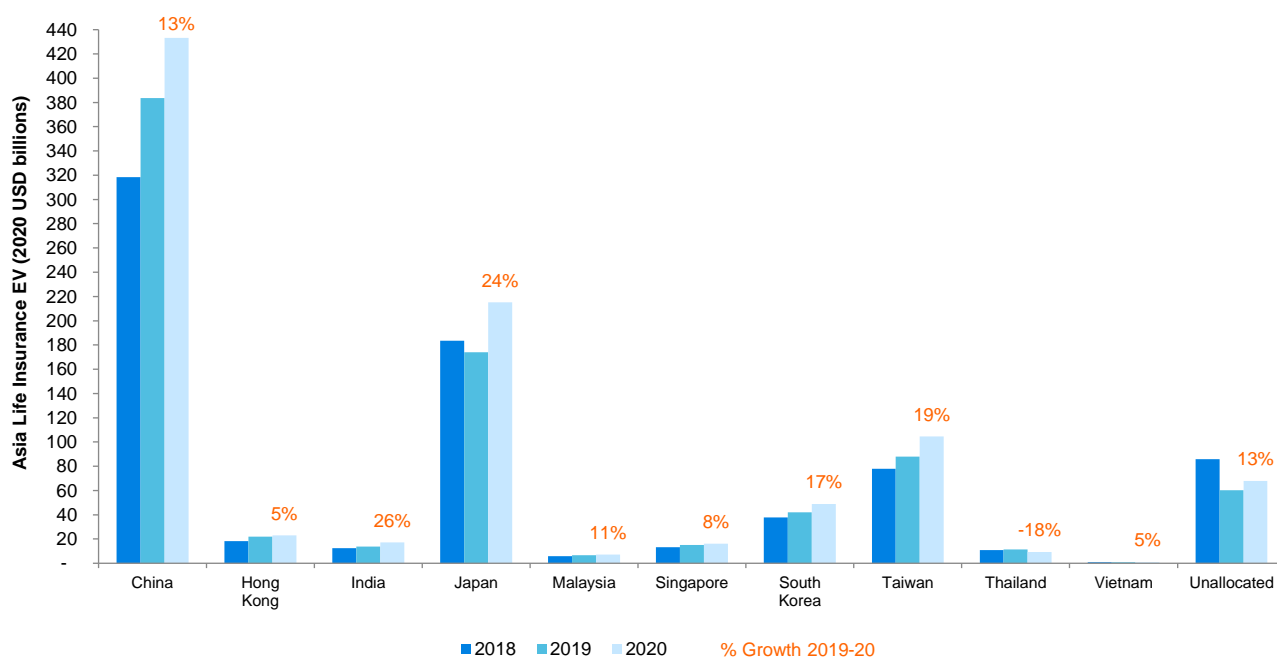
## EV RESULTS

This report examines the EV results published by MNCs and domestic life insurers within Asia.<sup>6</sup>

The scope of this report is limited to EV results directly related solely, or predominantly, to Asian operations. Insurers with a presence in Asia that do not provide separate results for the region are not included in this report. All figures in this section of the report are based on a comparable basis, i.e. comparing only companies that have reported 2018, 2019, and 2020 EV results for Asia.

In 2020, total reported Asian EV grew by 13.2% on a comparable basis<sup>7</sup> to USD 964 billion, up from USD 851 billion in 2019. The companies reporting the largest Asian EV at the 2020 year-end continue to be China Life, Ping An Life and AIA, at USD 164 billion, USD 126 billion, and USD 65 billion, respectively.

**FIGURE 1: COMPARABLE ASIAN LIFE INSURANCE COVERED EV BY MARKET,<sup>8,9</sup> 2018 TO 2020**



Despite the ongoing COVID-19 pandemic, all markets except Thailand posted positive EV growth in 2020. Double-digit EV growth was achieved in many markets, although growth was lower than 2019. The EV growth in 2020 is largely due to the unwinding of opening EV, addition of new business (albeit lower than 2019), and positive investment variance (due to positive equity returns and capital gains from lower yield curves).

India reported the highest comparable EV growth in 2020 of 26%, followed by Japan at 24%. Most Indian and Japanese insurers attributed the growth in EV to increases in economic variances. In India, this was mainly due to a significant improvement in equity returns giving rise to an uplift in VIF for investment linked and participating products. Thailand reported a decline of 18% in comparable EV in 2020, reflecting the impact of higher statutory reserves amid the prolonged low interest rate environment and falls in equity prices during 2020.

<sup>6</sup> For the avoidance of doubt, Asia does not include Australia or New Zealand.

<sup>7</sup> 'Comparable basis' refers to comparing only companies that have reported 2018, 2019, and 2020 EV results for Asia.

<sup>8</sup> Results for all years have been converted to USD using the prevailing foreign exchange (FX) rate as at the 2020 reporting date to provide comparability and eliminate FX effects.

<sup>9</sup> Unallocated indicates EV figures that are reported by insurers to relate to their Asian operations but have not been allocated to specific markets.

FIGURE 2: COMPARABLE<sup>10</sup> ASIAN LIFE INSURANCE COVERED ADJUSTED NET WORTH (ANW), 2018 TO 2020

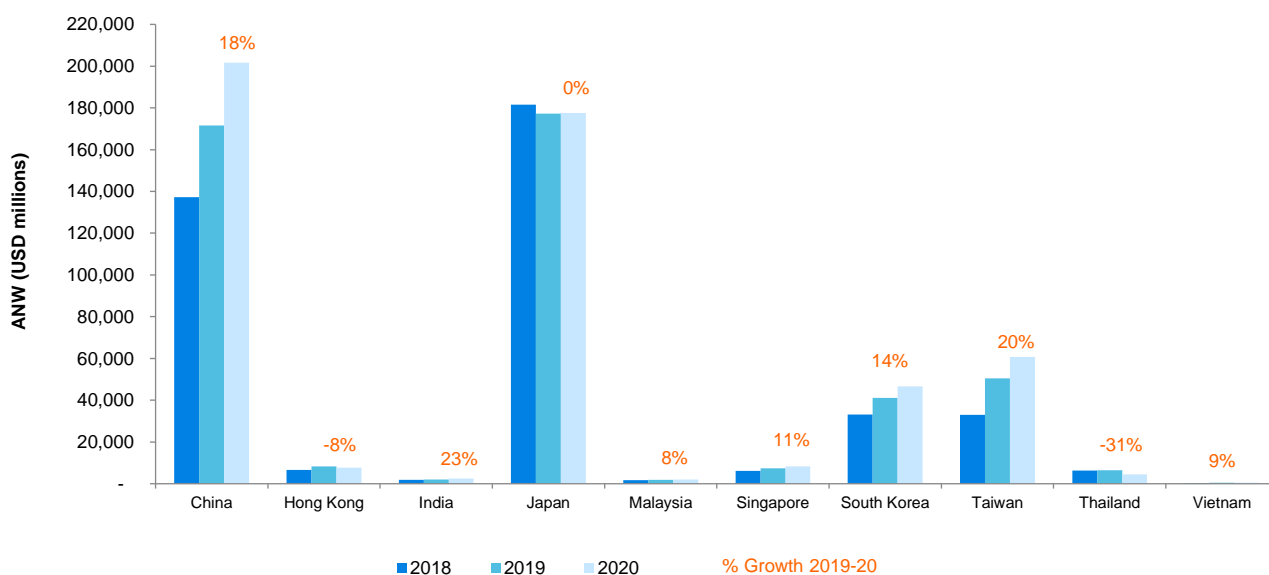
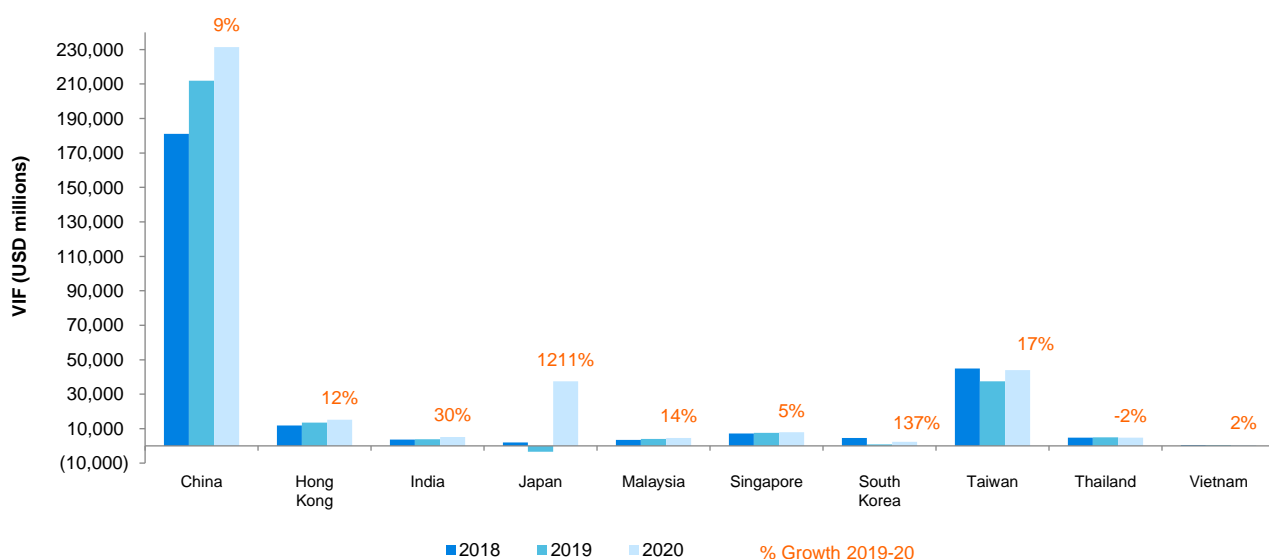


FIGURE 3: COMPARABLE<sup>11</sup> ASIAN LIFE INSURANCE COVERED VALUE OF IN-FORCE (VIF), 2018 TO 2020



Growth in ANW in 2020 was positive for all markets except Hong Kong and Thailand. India posted the largest percentage growth in ANW of 23% in 2020. India was followed by Taiwan at 20%, while Thailand reported the highest fall of 31% in ANW in 2020. In Thailand, the decline in ANW was attributed mainly to higher statutory reserves and falls in equities during 2020.

VIF growth was positive for all markets except Thailand. Japan posted the highest comparable growth, where overall market VIF turned positive in 2020. The growth in VIF for Japan was driven by increases in both the JPY and USD market yield curves. In South Korea, companies attributed the growth in VIF to new business and changes in actuarial assumptions.

<sup>10</sup> 'Comparable basis' refers to comparing only companies that have reported 2018, 2019, and 2020 EV results for Asia. Insurers that have not yet published their 2020 results as at the data cutoff date include Max Life, PNB MetLife, Reliance Nippon Life, and Meiji Yasuda Life.

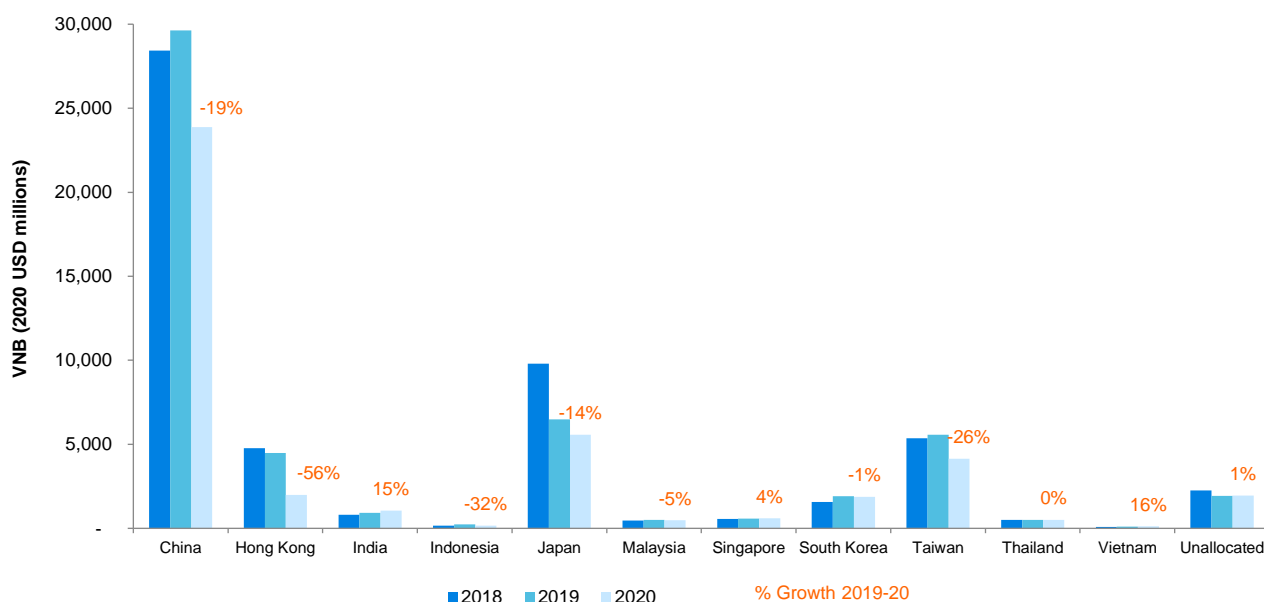
<sup>11</sup> Ibid.

A certain amount of caution must be exercised when evaluating Japanese company embedded values and their ANW/VIF components, especially when comparisons are made across Asia. Japanese companies typically report on a market-consistent basis, either MCEV or MC-EEV. In addition, many companies manage large blocks of legacy policies with relatively high investment guarantees (in some cases, in excess of 5% p.a.). As a result of these two factors, many companies have a very small (or even negative) VIF compared to the size of their in-force block. On a percentage basis, the VIF is extremely sensitive to changes in the interest rate environment. However, due to the use of a market-consistent approach and asset liability management, changes in VIF are usually substantially offset by changes in ANW. As a result, overall EV, though sensitive to changing market yields, is far less sensitive than the individual VIF and ANW components. In 2020, VIF increased significantly for Japanese insurers due to the increases in JPY and USD market yields, while overall ANW for the market was more or less unchanged. ANW varied significantly across companies, depending upon the returns on equities and bonds in their respective asset portfolios, offset by changes in reserves.

## NEW BUSINESS RESULTS

Total reported VNB for Asia stood at USD 42.3 billion in 2020, compared to USD 53.0 billion in 2019, representing a fall of 19.2%.<sup>12</sup>

FIGURE 4: COMPARABLE ASIAN LIFE INSURANCE COVERED VNB BY MARKET, 2018 TO 2020



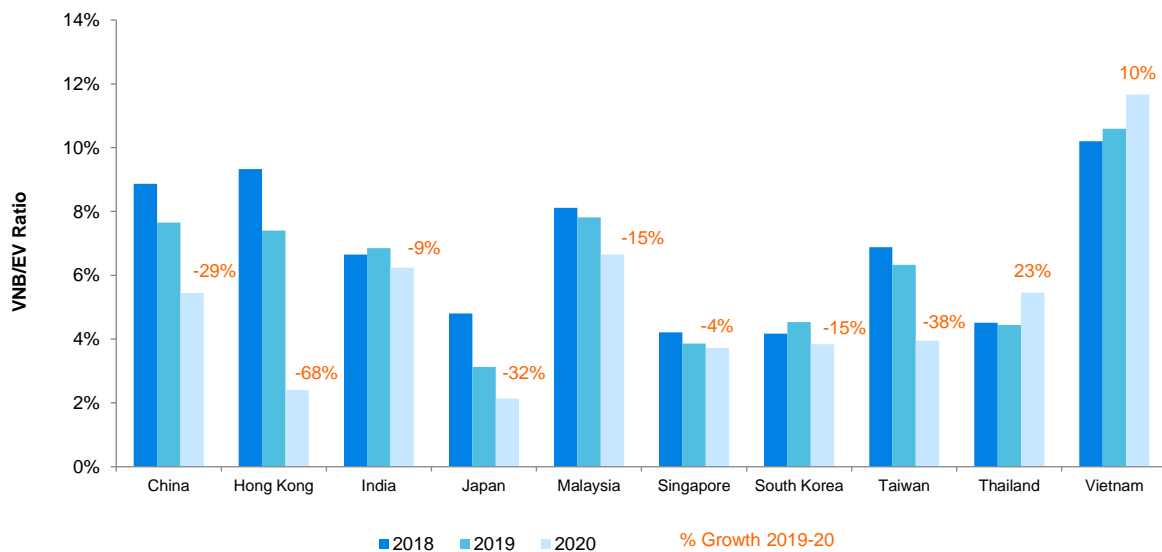
Most of the insurers in Asia disclosing VNB results reported declines in 2020, reflecting the impact on sales of government-imposed lockdowns across the region. Hong Kong reported the highest fall in VNB of 56%, followed by Indonesia, where VNB dropped by 32%. Many insurers in Hong Kong, including AIA and Prudential plc, saw significant falls in sales to MCV in 2020 because of continued travel restrictions in place. In Indonesia, Prudential plc, the only insurer to disclose VNB results in 2020, cited stringent COVID-19 restrictions as the reason for the decline in new business APE sales and VNB. Vietnam, India and Singapore recorded positive growth in VNB in 2020 of 16%, 15%, and 4%, respectively, while Thailand's VNB growth was broadly flat in 2020. It is important to note that the VNB for Vietnam was only based on one data point, Dai-chi Life Vietnam, whose VNB growth was primarily driven by increased sales. In India, continued focus on a balanced, profitable product mix helped drive VNB growth for many insurers.

For further details on each market, please refer to the 'Detailed Market Analysis' section of this report below.

<sup>12</sup> On a comparable basis.



FIGURE 5: VNB/EV RATIO,<sup>13</sup> 2018 TO 2020

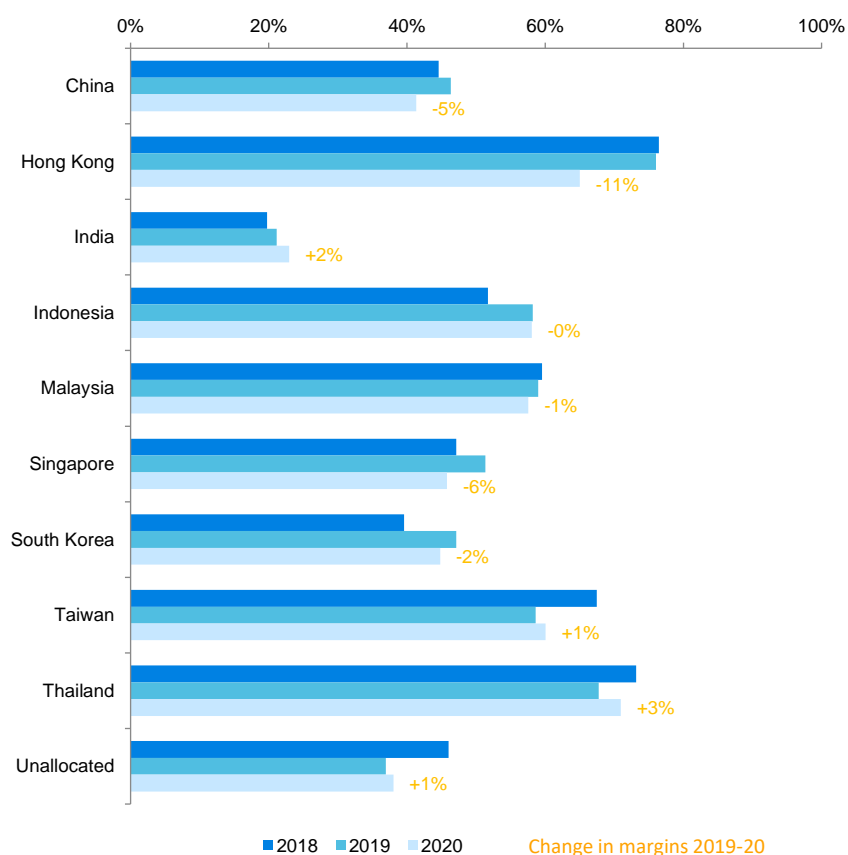


Except for Thailand and Vietnam, all markets saw a fall in the VNB/EV ratio in 2020. While the increase in the VNB/EV ratio for Thailand was primarily driven by a reduction in EV, the increase for Vietnam was due to higher growth in VNB compared to EV. Hong Kong witnessed the highest decline in VNB/EV ratio in 2020. However, it should be noted that the VNB/EV ratio for Hong Kong is based on one data point, AIA Hong Kong, and the fall in this ratio was driven by a significant drop in VNB in 2020.

<sup>13</sup> This ratio has been calculated on a constant currency basis, using the EV and VNB figures of insurers that have reported both EV and VNB during those periods. Companies that only report EV or VNB have been excluded from this analysis.

NEW BUSINESS MARGINS

FIGURE 6: IMPLIED NEW BUSINESS MARGINS<sup>14 15</sup> BY MARKET, 2018 TO 2020



The chart in Figure 27 compares the total disclosed new business margins for each market. The reliability of this analysis is inherently linked to the number of disclosures available. All markets, except India, Taiwan, and Thailand, recorded falls in new business margins in 2020. Thailand posted an increase of 3% in new business margins, driven by a shift in product mix towards higher margin participating products.

<sup>14</sup> This chart has been developed by taking the sum of all disclosed VNB in each market, divided by the commensurate APE figure sold by these companies in the market. As such, the reliability of this chart will increase depending on the actual number of companies (and their collective market share) disclosing information by geography. This means that for markets with very few disclosures, such as Indonesia, Malaysia, Singapore, and Thailand, this analysis may not reflect profitability across the whole market. The VNB results will also be a combination of different TEV, EEV and MCEV reported figures in several markets. The following is the breakdown of the companies included by market: China (AIA, Prudential plc, China Life, China Taiping, China Pacific, New China Life, PICC Life, and Ping An); Hong Kong (AIA, AXA, Manulife and Prudential Life); India (Aditya Birla Sun Life, ICICI Prudential Life, HDFC Life, Bajaj Allianz Life, Kotak Life, and SBI Life); South Korea (Hanwha Life and Samsung Life); Malaysia (AIA, Great Eastern, Prudential plc, and Hong Leong Assurance); Singapore (AIA, Great Eastern and Prudential plc); Taiwan (Prudential plc, Cathay Life, China Life TW, Mercuries Life, Shin Kong Life, Taiwan Life and Fubon Life); Thailand (AIA, Bangkok Life); Indonesia (Prudential plc).

<sup>15</sup> Japan and Vietnam are excluded from this analysis as Japanese insurers and Dai-ichi Life Vietnam do not disclose new business APE numbers. Instead, they disclose Present Value of New Business Premiums (PVNBP). For a comparison of new business margins calculated using PVNBP numbers for these markets, refer to the Japan and Vietnam section of the 'Detailed Market Analysis' section of this report below.

## EV METHODOLOGY HOT TOPICS

Most aspects of EV calculations in Asia are based on established industry practice or published guidelines. However, some critical areas remain open for interpretation. Figure 7 summarises the key areas where insurers' methodologies have diverged significantly in the region. It is important to be aware of these key differences when comparing the EV results of insurers across Asia or within specific markets.

**FIGURE 7: SUMMARY OF EV METHODOLOGY HOT TOPICS**

HOT TOPIC	COMMENT
<b>Risk discount rate (RDR)</b>	Aside from IEV, MCEV and MC-EEV reporting insurers, TEV and some EEV reporting firms typically use a risk-free rate plus risk margins to derive their discount rates. A key area of judgement involves the setting of the risk margin. Most companies operating within markets typically have a tight range of assumed risk margins, but exceptions do exist. Taiwan and Hong Kong are outlier markets, where the differences between the lowest and highest risk margins are 751 bps and 612 bps, respectively.
<b>Investment return assumptions</b>	<p>Future investment return is a key assumption for calculating VIF and VNB for TEV and EEV reporting companies. Where insurers disclose investment return assumptions by asset classes, the range of assumptions is generally quite narrow. Where portfolio-level assumptions are disclosed, a wide range can be seen in some markets. Insurers reporting on Solvency II basis disclose information on matching adjustments and illiquidity premiums.</p> <p>There is also some divergence among insurers on the implied link between current market yields and future investment return assumptions. Some insurers derive future investment return assumptions from spot bond yields (with risk margins for other asset categories), while others position their investment returns as long-term return assumptions, with increasing divergence from spot bond yields as interest rates have fallen in recent years. The latter approach can potentially introduce some disparity in EV calculations, as insurers take credit in their ANW results for market value uplifts from falling interest rates, but only partially reduce their VIF results as investment return assumptions are not reduced to the same extent as spot yields (or not reduced at all).</p>
<b>Cost of guarantees</b>	Only firms reporting EEV, IEV and MCEV are obligated to calculate the time value of options and guarantees (TVOG). Firms reporting TEV typically only include the intrinsic value of such options and guarantees using their deterministic investment return assumptions but make implicit allowance for TVOG in their choices of RDR.
<b>Expense overruns</b>	The disclosure of expense overruns is critical to communicate the current and expected future situation of the company concerned. However, the disclosure practices of some insurers could be improved to provide greater clarity on the extent and expected trajectory of the overrun, as well as the main reasons for it.
<b>Cost of capital</b>	<p>Insurers need to make assumptions on the future level of required solvency margin (SM) when projecting distributable earnings. This is typically based on what insurers perceive to be the minimum level that will prompt regulatory intervention. For most markets, there is broad agreement on this level as a result of clear communication from the regulator or industry precedent. Notable exceptions include Singapore and Malaysia, where different companies will have agreed with the regulator to different minimum levels of regulatory capital. For example, in Singapore, Manulife assumes a minimum level of 120% of risk-based capital (RBC), whereas AIA Singapore uses 135%.</p> <p>In most markets, the SM is assumed to be above the minimum regulatory level, but most Chinese companies use 100% of the minimum regulatory level for EV purposes, which is in accordance with the China Association of Actuaries (CAA) EV standard of November 2016.<sup>16</sup></p>

<sup>16</sup> On 22 November 2016, the CAA issued new guidance for embedded value calculations. The new guidance was applied to the EV calculations for AIA China with effect from 30 November 2016. Consistent with prior reporting periods, VNB is calculated as at the point of sale and, therefore, the new guidance is reflected in the VNB for AIA China with effect from 1 December 2016. The additional Hong Kong reserving and capital requirements continue to apply and, therefore, there is no material impact of this change to the group's overall results.

## RECENT AND UPCOMING REGULATORY CHANGES

EV results by their nature are typically impacted by changes in insurance regulations. Figure 8 provides a summary of some of the major recent or upcoming regulatory changes in the region.

**FIGURE 8: SUMMARY OF RECENT AND UPCOMING MAJOR REGULATIONS BY JURISDICTION**

JURISDICTION	REGULATION	DESCRIPTION
China	Solvency framework	The China Banking and Insurance Regulatory Commission (CBIRC) revised solvency regulations for insurance companies. Effective from 1 March 2021, the new regulations are based on a three-pillar framework for solvency supervision, focusing on strengthening the control of insurers' solvency and protecting consumers.
Hong Kong	Group-wide supervision	The Insurance Authority (IA) issued a guideline on group-wide supervision (GWS), which became effective on 29 March 2021 and is applicable to designated insurance holding companies that are subject to IA's group supervision. It sets out the principles and standards for these designated insurance holding companies in a number of areas related to risk and capital management.
	RBC framework	As part of the first Own Risk and Solvency Assessment (ORSA), insurers were required to perform stress testing as at 31 December 2020 and submit a report to the IA considering the enhancements of certain detailed areas of the technical specification.
India	Foreign Direct Investment (FDI)	In March 2021, the Insurance Act was amended to increase the FDI limit for the insurance sector from 49% to 74%.
Indonesia	Risk management framework	In September 2020, the Indonesian Financial Services Authority (OJK) issued regulation requiring non-bank institutions to implement a risk management framework at a company and holding company level. Insurers must form a risk management committee and risk management task force or unit and the latter should prepare a quarterly report describing the company's risk exposure.
	Syariah companies <sup>17</sup>	As part of the process for conventional insurers to spin off their Syariah business unit, or 'window', each company was required to prepare separation work plans giving details of how the business unit will be divested and submit these work plans to the OJK by October 2020.
Japan	RBC regime	The Financial Services Agency (FSA) is working on the introduction of an economic value-based solvency regime. The FSA has recently published a summary paper that describes their analysis so far on field test results and potential directions for various issues. The industry CAR for life insurance companies increased from 178% as at March 2019 (2019 FSA Field Test) to 187% as at March 2020 (2020 FSA Field Test). The FSA targets to develop an initial draft of the basic design in 2022.
Malaysia	Product guidelines	In July 2020, the limits on commission and agency-related expenses for investment-linked Takaful products were removed. In January 2021, the Balanced Score Card (BSC) Framework was implemented for the bancassurance channel, together with increased commission limits for bancassurance partners.
	RBC framework	The regulator, Bank Negara Malaysia (BNM), proposed enhancements to improve the risk capture and overall consistency of the RBC framework. Effective March 2020, the BNM implemented revisions to the stress testing parameters used for the computation of the interest rate risk capital charge under the RBC Framework, reducing the stress factor caps from 40% to 30%.
Singapore	Participating product guidelines	The Monetary Authority of Singapore (MAS) revised requirements relating to the allocation of charges and expenses to the participating fund and included a list of non-chargeable expenses. Life insurers must ensure that any charges or expenses allocated to the participating fund are fair and reasonable. The revisions came into effect from 1 January 2021.
	Enterprise Risk Management (ERM)	In February 2021, the MAS proposed revisions to ERM, Investment and Public Disclosure requirements for insurers. These revisions aim to strengthen insurers' risk management practices and mitigate the systemic risk in the insurance sector.
	Investment returns for policy illustrations	Effective July 2021, the life insurance industry lowered the caps of illustrative investment returns used in policy illustrations for Singapore-dollar denominated participating policies. The upper illustration rate cap was lowered from the current rate of 4.75% p.a. to 4.25% p.a. while the lower illustration rate was capped at 3.00% p.a., from current 3.25% p.a.

<sup>17</sup> Syariah insurance is also known as Takaful business. It is a form of insurance based on Syariah principles, whereby a group of participants mutually provides a joint-guarantee and protection for each other for the losses arising from specified risks, through a pooled fund.

JURISDICTION	REGULATION	DESCRIPTION
South Korea	Revisions to Insurance Business Act	The Financial Services Commission (FSC) proposed revisions to the Enforcement Decree of the Insurance Business Act, setting requirements for the establishing insurance companies specialising in small premium, short-term policies and introduced measures to improve the soundness of the insurance industry.
	RBC framework	The Financial Supervisory Service (FSS) has announced that from July 2021 liability duration would be reinforced on long-term products which would effectively increase the interest rate risk amount leading to higher required capital.
Taiwan	Interest rates for liability reserve	In view of the declining market rates, the Financial Supervisory Commission (FSC), announced reductions in reserving interest rates on all policies denominated in NTD and USD by 25 bps and 50 bps respectively effective from the second half of 2020.
	Microinsurance business	The FSC amended 'Directions for Insurance Companies to Engage in Microinsurance Business' to expand the eligibility criteria to include mid- or low-income senior citizens receiving a living allowance.
	Regulations governing foreign investments	The FSC announced amendments to 'Regulations Governing Foreign Investments by Insurance Companies' to allow insurance companies to better manage their asset portfolio related to foreign-currency denominated insurance policies. For more information, please refer to the Taiwan section in the 'Detailed Market Analysis' section of this report below.
	Regulations governing Insurance Brokers and Agents	The FSC amended regulations to strengthen supervision of insurance brokers and agencies, better protect the interests of customers using digital insurance policies, strengthen reinsurance-related supervision and market discipline.
Thailand	Revisions to the RBC regime	The Office of Insurance Commissioner (OIC) announced revisions to RBC calculations in September 2020 in an attempt to improve the industry's declining CAR. The revisions include decreasing the diversification correlation factor between assets and insurance and reducing the equity risk charge where there is equity investment hedging.
	Widening investment opportunities	The OIC introduced three measures in February 2021: i) a new risk charge calculation method for foreign equity funds; ii) permitting insurers to make reference to credit ratings from local agencies when investing in bonds issued in foreign countries by Thai issuers; and iii) allowing insurance companies to invest in non-investment grade bonds and mutual bond funds.

In some markets, the regulatory authorities have taken temporary measures in light of the COVID-19 outbreak. Figure 9 provides a summary of such recent measures related to the pandemic.

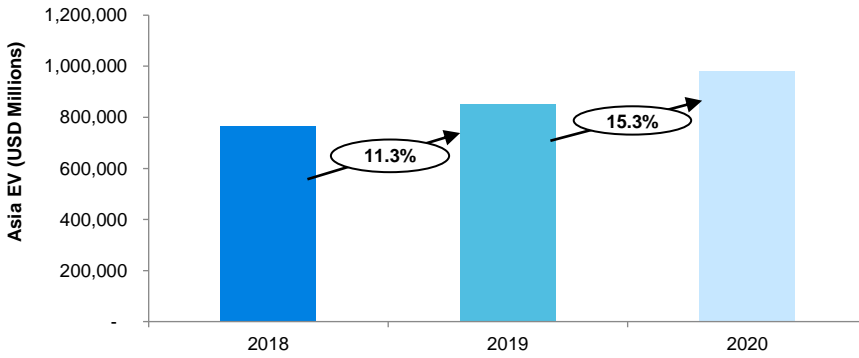
**FIGURE 9: SUMMARY OF RECENT MEASURES RELATED TO COVID-19 BY JURISDICTION**

JURISDICTION	DESCRIPTION
Hong Kong	The IA announced an extension of the temporary facilitative measures introduced last year for non-face-to-face distribution of specific protection insurance products until 30 September 2021 in view of COVID-19 pandemic developments.
Indonesia	The OJK extended the countercyclical policies against the impact of COVID-19 for non-banking financial services (such as valuing investment assets at amortised value for solvency purposes, etc.) until 17 April 2022.

## Introduction and background

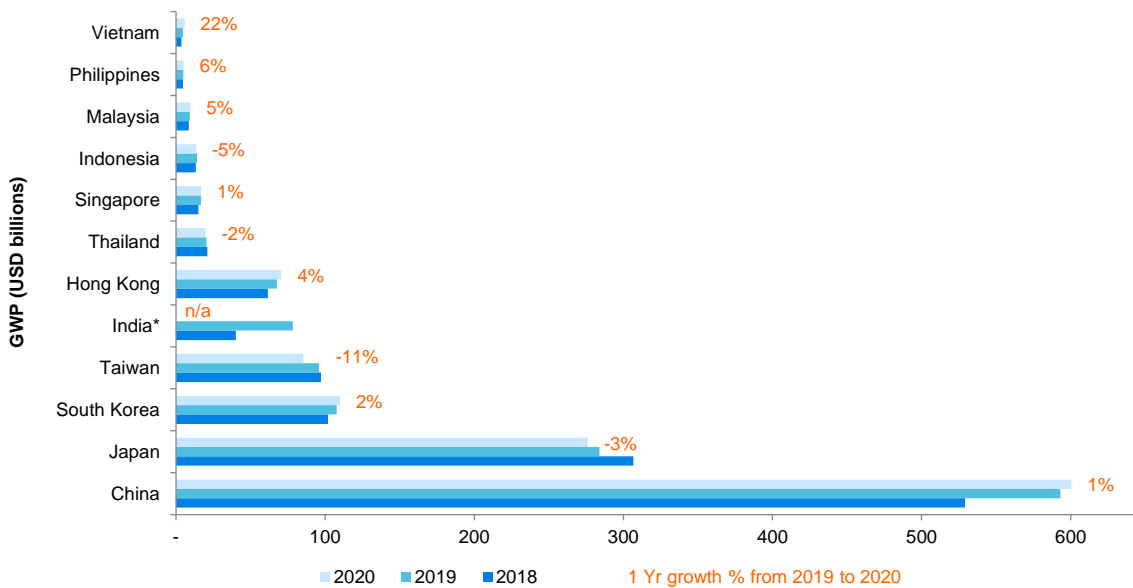
Comparing only insurers that have reported 2018 to 2020 EV figures<sup>18</sup>, Asian life insurance EV<sup>19</sup> grew by 15.3% in 2020; somewhat surprisingly at a higher rate than the 11.3% recorded in 2019.

FIGURE 10: REPORTED COMPARABLE ASIA LIFE INSURANCE COVERED EV, 2018 TO 2020



Overall GWP decreased slightly on a USD basis (see Figure 11), with new business APE and new business margins declining in most markets (see individual market sections below), reflecting the difficult sales conditions caused by COVID-19 lockdowns and other restrictions associated with the pandemic. There was an increase in insurance penetration (see Figure 12) of about 10 basis points (bps) in 2020. While insurance penetration increased for most markets, it decreased for Taiwan, Japan and Indonesia. Household income growth in USD terms was mixed across the region (see Figure 13).

FIGURE 11: LIFE INSURANCE GROSS WRITTEN PREMIUMS IN ASIA<sup>20 21</sup>



\* FY2020 GWP for India was unavailable during the production of this report

<sup>18</sup> Companies that have not yet disclosed their 2020 EV results have also been excluded in order to provide an appropriate year-to-year comparison. To provide comparability, the EV figures for this chart have been calculated on a constant currency basis, using the FX rate as at each company's 2020 reporting date.

<sup>19</sup> Asian life insurance EV is defined as the EV of covered businesses attributed to Asia (i.e., excluding the net asset value portions of non-covered businesses such as general insurance portfolios, except for long-term insurance written by South Korean general insurance insurers, where EV reporting is available). While every effort has been made to strictly use figures relating solely to this definition, some companies report their Asian EV figures as part of a larger reporting unit. Where we have deemed the EV to be driven mostly by the Asian region, the total EV has been reported.

<sup>20</sup> Sources: Various life insurance associations and insurance regulators.

<sup>21</sup> 2020 GWP for Philippines is based on submitted unaudited quarterly statistics.

FIGURE 12: ASIAN LIFE INSURANCE PENETRATION<sup>22 23</sup> 2018 TO 20, % OF GDP<sup>24</sup>

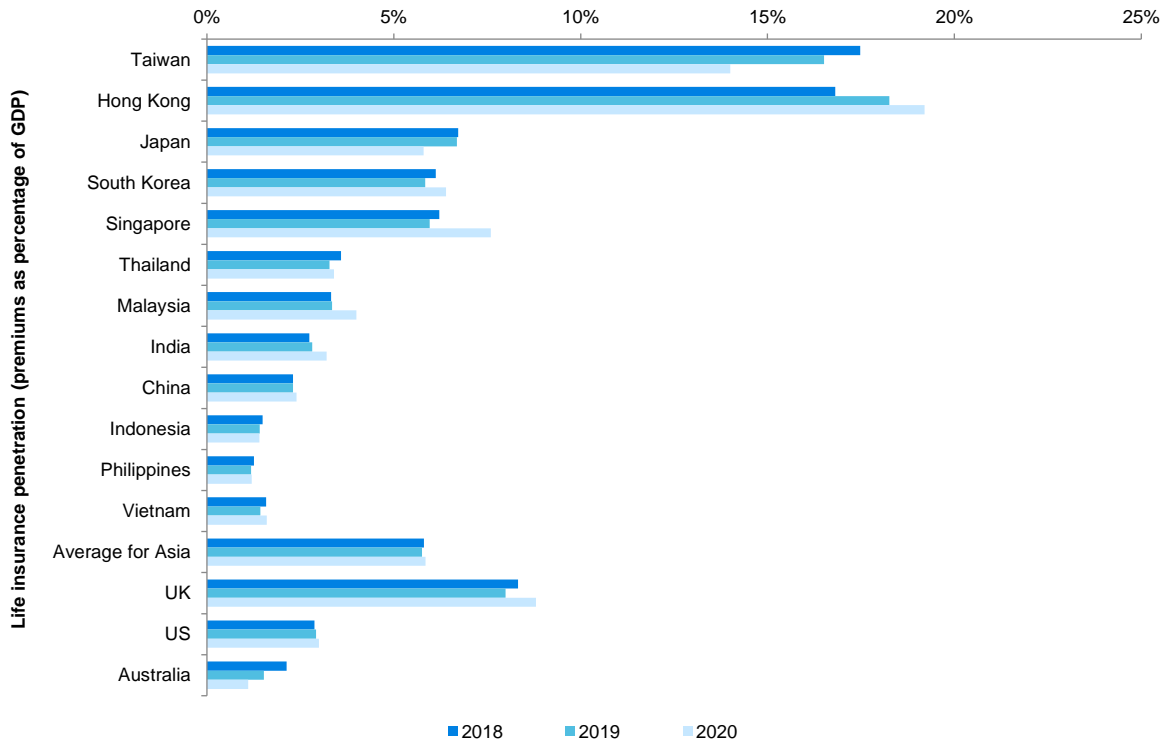
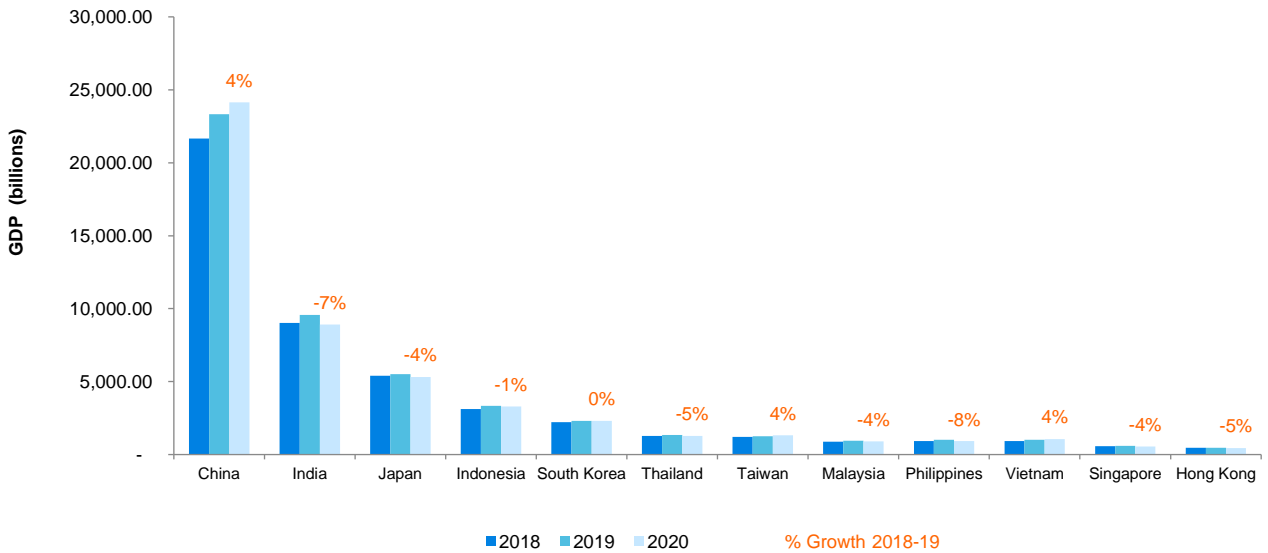


FIGURE 13: GDP (PURCHASING POWER PARITY)<sup>25</sup> OF IN-SCOPE ASIAN MARKETS, 2018 TO 2020



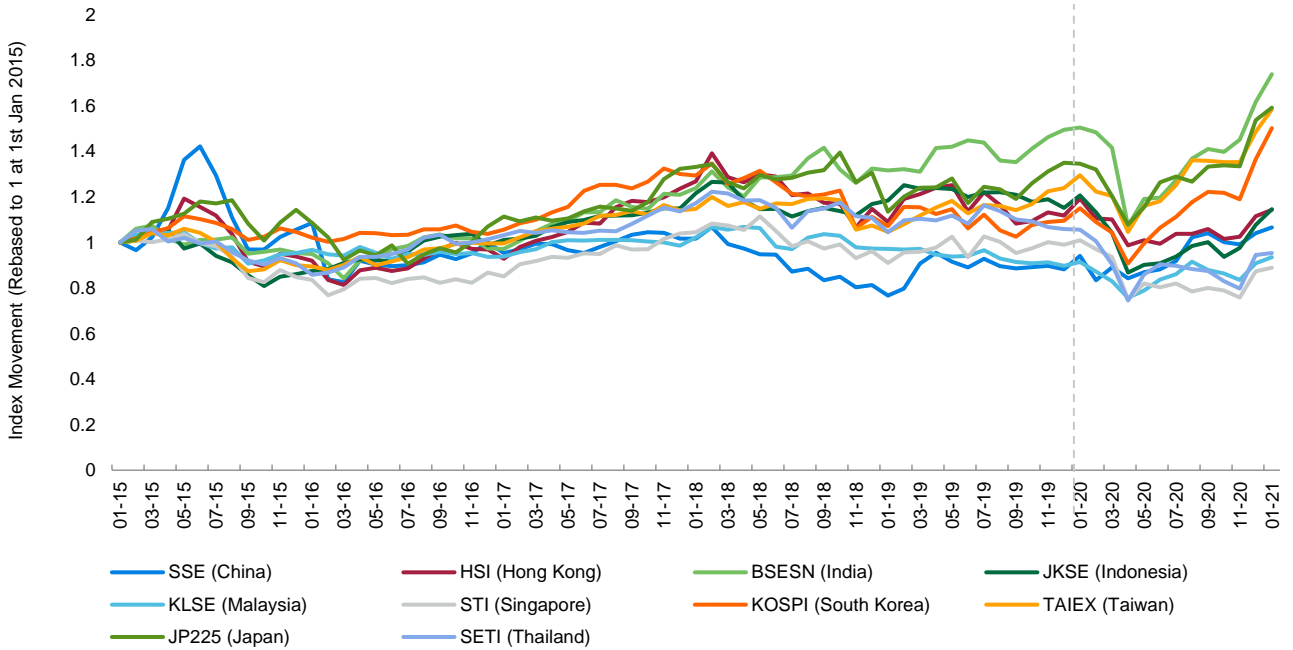
<sup>22</sup> It should be noted that Hong Kong life insurance penetration figures are likely to be distorted by large volumes of business being sold to Mainland Chinese visitors.

<sup>23</sup> Note that we have revised the 'Average for Asia' figures as the 2020 report does not provide a consolidated average figure for the Asian region. The report has segregated Asian markets into advanced and emerging markets. The revised figures are a calculated average of life insurance penetration in Asian markets covered under this report.

<sup>24</sup> Source: Swiss Re Sigma World Insurance Report 2020.

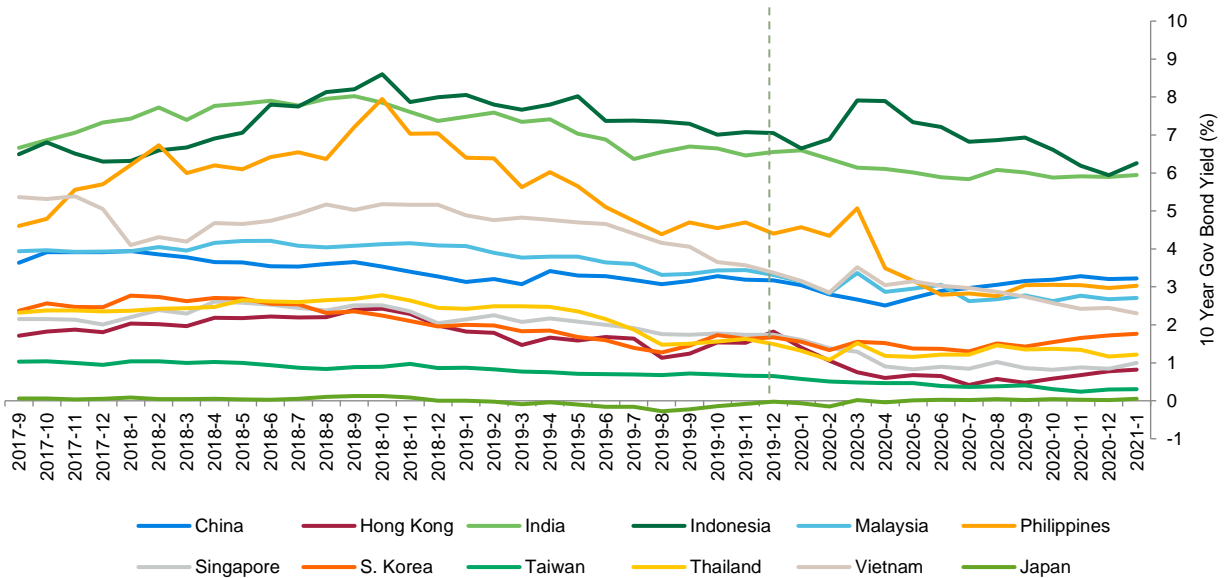
<sup>25</sup> Source: International Monetary Fund, World Economic Outlook Database, April 2021.

**FIGURE 14: RECENT EQUITY MARKET PERFORMANCE: GROWTH OF MAJOR EQUITY INDICES<sup>26 27</sup>**  
**FROM 1 JANUARY 2015 TO 31 DECEMBER 2020**



Many Asian equity markets experienced high volatility during 2020 (see Figure 14). Overall, in the past five years, the best-performing major equity index in the region has been India’s Bombay Stock Exchange Sensitive Index (BSE Sensex). Asian equity markets experienced significant volatility over the past year amidst the onset of COVID-19. South Korea’s Korea Composite Stock Price Index (KOSPI) saw the highest year-on-year increase of 27%, driven by strong buying from individual investors and expectations of a speedy recovery from the pandemic.

**FIGURE 15: 10-YEAR SOVEREIGN BOND YIELDS,<sup>28</sup> 2018 TO 2020**



<sup>26</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 Sensitive Index (BSE Sensex); Indonesia: Jakarta Composite; Japan: Nikkei 225; Malaysia: Kuala Lumpur Stock Exchange Composite Index; Singapore: Straits Times Index; South Korea: Korea Composite Stock Price Index; Taiwan: Taiwan Weighted Index.

<sup>27</sup> Source: Investing.com.

<sup>28</sup> Source: Investing.com.



The Asian sovereign bond market yields, which closely influence the selection of RDRs and investment return assumptions adopted by insurers for EV reporting, declined for most markets during 2020. The 10-year Thai government bond yield was very volatile in the first quarter of 2020, falling from 1.46% to below 1% at one point, prior to rebounding to 1.48% by the end of March 2020. For the rest of 2020, the 10-year Thai government bond yield remained at around the 1.3% level.

The COVID-19 pandemic has added considerable uncertainty to the economic outlook of the region with the impact of the pandemic ultimately depending on each market's ability to manage the spread of the virus and the effectiveness of the economic policy support provided. The nascent recovery of Asian economies in the third quarter of 2020 was interrupted by a resurgence of the pandemic causing the reinstatement of containment measures in several countries, such as India, Indonesia and Malaysia. The impact of these measures is expected to be less acute than in the March-April period of 2020, as recent efforts have focused more on local targeted restrictions than on full-scale lockdowns.<sup>29</sup> However, it should be noted that COVID-19 developments are fast-moving and uncertain.

EV continues to be widely used as a performance measurement tool and an external financial disclosure metric for insurers operating in Asia. EV is also commonly used as an internal financial performance metric and can be included as a component of management of long-term incentive plans. Broadly speaking, subsidiaries of MNCs, especially European insurers, utilise more advanced EEV and MCEV methodologies for their EV reporting, compared with local and regional insurers that almost entirely use TEV. In Japan and India, however, there has been a convergence towards market-consistent methodologies, with more companies adopting the IEV approach in India.

In this publication, we focus on EV results as at financial year-end 2020.<sup>30</sup> In addition to providing an overview of the methodology insurers used and commenting on any new developments, we have included the following current 'hot topics' that insurers may wish to consider when enhancing their EV approaches in the future:

- Determining the RDR
- Setting appropriate investment return assumptions
- Setting appropriate future solvency capital assumptions
- Evaluating the TVOG
- Disclosures in EV reporting
- Other measures of value (e.g., market capitalisation, financial reports based on IFRS or GAAP)

Before covering these topics in detail, we provide a high-level overview of the history of EV, the key components of EV calculations and the differences between the various types of EV methodologies.

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<sup>29</sup> Economic Outlook for Southeast Asia, China and India 2021 (OECD Development Centre).

<sup>30</sup> For India and Japan, the financial year-end 2020 is 31 March 2021.

## Overview of embedded value

The EV of an insurer is intended to be a measure of the value of the shareholders' interests in the business. Over time, various principles and guidance have been issued by industry bodies to achieve consistency among companies and reporting periods within their own governing territories. For example, guidance notes have been issued in the UK, Canada, and the US. The two main sets of guidance currently widely used by European companies and their subsidiaries around the world are the EEV principles and MCEV principles.<sup>31</sup>

Common to all the various EV principles are the following two major components:

1. VIF: The discounted future distributable earnings arising from policies in-force as at the valuation date.
2. ANW: The shareholders' net assets, including free surpluses and required capital, i.e., the amount returned to shareholders should all assets be sold and liabilities settled immediately.

The above two items relate purely to existing policies and do not consider new business potentially written in the future. When the value of future new business (akin to goodwill, representing the ability of the insurer to sell profitable future new business) is added to the two existing components, it results in an appraisal value, a common metric used to assess the overall economic value of insurance companies.

EV reporting is typically only applicable to long-term life, accident/health, and group risk insurance business, often referred to as 'covered business'. This is a critical factor to keep in mind, as there are currently no standards or guidance in applying EV to general insurance businesses. Hence, for composite insurers (i.e., those that write general insurance in addition to life insurance), the relationship between market capitalisation and life insurance EV may be weaker than for pure life insurers. In Asia, however, we do have the anomaly that South Korean general insurers are allowed to write long-term insurance business, which would, in most jurisdictions, be categorised as life insurance business. As listed South Korean general insurers produce EV results for their long-term insurance business, we have included them in this report.

In the following section, we present a brief history of EV reporting, its introduction into Asia and current practices.

### HISTORY OF EV REPORTING

EV reporting started in the UK in the 1980s as a way for life insurance companies to give better guidance to analysts and shareholders on their underlying economic values. At that time, accounting standards were not fully equipped to handle the unique nature of life insurance businesses, and it was very difficult to use the standard financial statements to assess a life insurer's economic value.

The methodology has since spread globally. Early EV methodologies, using deterministic approaches to value cash flows and implicitly allowing for the cost of policyholder options and guarantees, asset/liability mismatch risk, credit and other risks and the economic cost of capital through the use of a RDR, are often characterised as TEV.

Following some TEV-related criticism in the investment community, a group of leading European insurers, known as the European Insurance CFO Forum (CFO Forum), published more detailed agreements on principles for EV calculations and disclosures in 2004, which formed the basis for what is now referred to as EEV methodology. EEV provides more standardisation of definitions, required calculations and disclosures, providing greater comparability among insurers.

The latest evolution in EV reporting came in 2008, with the introduction of the MCEV principles by the same CFO Forum. These principles introduced mandatory market-consistent valuation of assets, liabilities and financial risks, while also introducing more specific disclosure requirements. The CFO Forum had originally intended introducing MCEV as the mandatory standard for its members from 2012 onwards, but this requirement was withdrawn in 2011 pending the development of Solvency II and IFRS.

<sup>31</sup> Formally known as the European Insurance CFO Forum Market Consistent Embedded Value Principles. The MCEV principles are a copyright of the Stichting CFO Forum Foundation 2008.

The prevalence of EV reporting continues to grow among insurers outside of Europe, including those in Canada and Asia. However, the future of EV reporting in Europe is in some doubt since the introduction of Solvency II and developments in IFRS financial reporting. Over the last few years, a number of companies have discontinued EV reporting, citing the new Solvency II regime's market-consistent framework which incorporates best estimate cash flows for assets and liabilities. Some companies have started using new shareholder value metrics, based on Solvency II Own Funds, adjusted for certain features (e.g., contract boundaries, cost of capital, ring-fenced funds restrictions, and matching adjustment application restrictions), which are considered by the companies producing these metrics as not being consistent with their economic views.

## EV IN ASIA

EV was initially introduced into Asia through the subsidiaries and joint ventures of European companies. Since then, many domestic insurers have introduced EV reporting, with major life insurers in the significant Asian insurance markets now calculating and disclosing EV in some form. There are currently different EV methodologies being used in Asia: domestic insurers outside of India and Asian MNCs tend to report on a TEV basis, while European MNCs and Japanese insurers favour MCEV, EEV<sup>32</sup> or MC-EEV<sup>33</sup>. A summary of EV methodologies adopted by life insurers across Asia is shown in Figure 16.

**FIGURE 16: EMBEDDED VALUE REPORTING STATISTICS BY DOMICILE OF INSURANCE GROUP**

GROUP DOMICILE	TEV	EEV	MCEV/IEV	MC-EEV	TOTAL
Asian MNC	2	-	-	-	2
European MNC	-	2	3	-	5
North American MNC	1	-	-	-	1
China	6	-	-	-	6
Hong Kong	-	-	-	-	-
India	1	-	9	-	10
Japan	-	-	6	10	16
Malaysia	1	-	-	-	1
South Korea	2	-	-	-	2
Taiwan	6	-	-	-	6
Thailand	1	-	-	-	1
Vietnam	1	-	-	-	1
<b>Total</b>	<b>21</b>	<b>2</b>	<b>18</b>	<b>10</b>	<b>51</b>

Apart from certain European MNCs, the only companies operating in Asia that are reporting IEV or MCEV are the Indian and Japanese insurers. Several insurers in India, including ICICI Prudential Life, SBI Life and HDFC Life, first adopted IEV during their respective initial public offerings (IPOs). These insurers continue to publish annual EV market disclosures based on the IEV methodology. Other insurers have also followed suit and started to publish their EVs either on an MCEV or an IEV basis.

A majority of insurers in the rest of the Asia still use a TEV methodology. The prevalence of so many different EV reporting methodologies across Asia brings major challenges in comparing EV results, making a good understanding of the differences between the methodologies critical. In the next section, we present a brief overview of the primary differences among the three main EV methodologies.

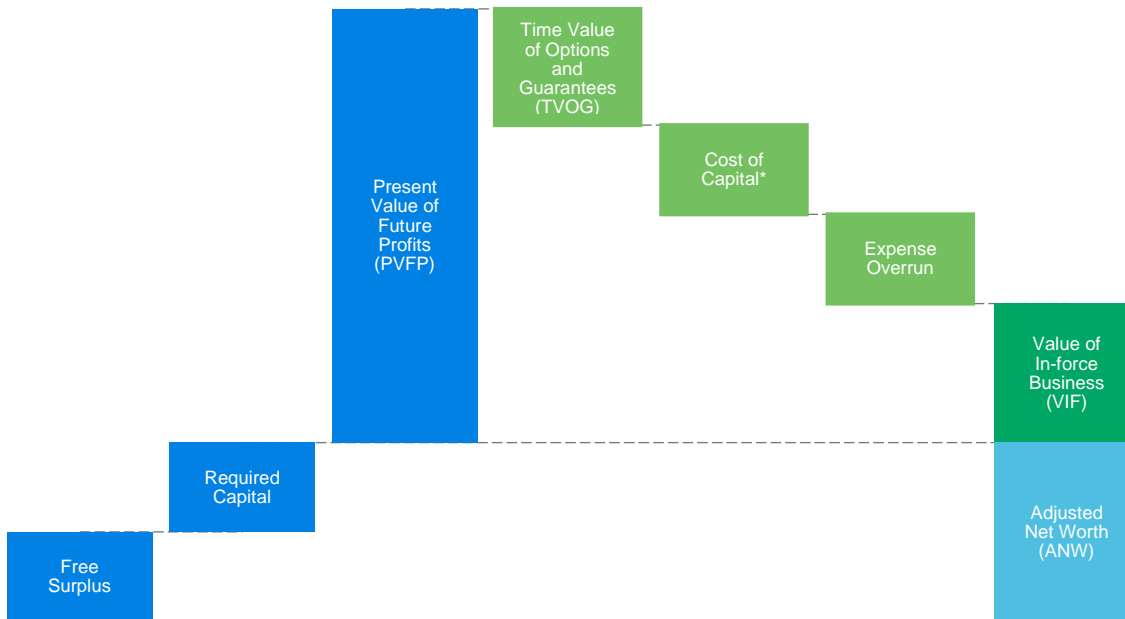
In Korea, the values of in-force and new business are presented on a TEV basis, including the cost of minimum benefit guarantees on non-hedged block of variable annuity and life business which cover a variety of guaranteed death and living benefits. Guaranteed Minimum Benefit (GMxB) costs on non-hedged blocks of variable products are usually developed based on a stochastic analysis under real world scenarios, typically 1,000 scenarios, and expressed as a percentage of GMxB fees.

<sup>32</sup> Including AXA and Prudential plc.

<sup>33</sup> Including Allianz, Aviva and Zurich.

## COMPONENTS OF EV

FIGURE 17: COMPONENTS OF EV



The VIF is calculated as the sum of:

- **Present value of future profits (PVFP):** The present value of net (of tax) distributable earnings from existing in-force business and the assets backing the associated liabilities.
- **TVOG:** A requirement for EEV, IEV and MCEV only. This represents the additional value (for policyholders) of financial options and guarantees above the intrinsic value already allowed for in the calculation of the PVFP.
- **Cost of capital (CoC):** Represents the additional cost (to the shareholders) from investing in assets backing the required capital via an insurer relative to the shareholders' required rate of return on these assets.

For MCEV, this component is further split into:

- *Frictional cost of capital (FCoC):* This reflects the tax and investment costs that arise on the assets backing the required capital.
- *Cost of residual non-hedgeable risks (CRNHR):* This is the expected cost of capital related to non-hedgeable risks that can have an asymmetric impact on shareholder value (to the extent that these risks have not already been reflected in the PVFP or TVOG). They can include both financial and non-financial risk, with operational risk being a typical inclusion.

An **expense overrun** is reported by some insurers, particularly for new operations or those in an expansion phase. The expense assumptions underlying EV are normally based on current 'fully allocated' expense levels, but this can cause insurers with fledgling operations that have yet to achieve scale to show seemingly unprofitable businesses. As a consequence, some EV results are presented as 'pre-overrun,' where the EV figures will be calculated based on long-term target expense levels, and as 'post-overrun,' which reflect the current actual expense position. At a company level, the difference between the actual current expense level and the targeted long-term level is commonly referred to as the expense overrun.

**ANW** is typically calculated as the sum of:

- **Required capital:** Defined as the market value of the undistributable assets attributed to the business over and above that required to back the liabilities for the business. The level of required capital may be set by reference to regulatory capital requirements, levels of capital requirements that achieve a target credit rating, internal model capital requirements, or a combination of these factors.
- **Free surplus:** The market value of any assets allocated to, but not required to support, the in-force business as at the effective date of the EV calculation.

Figure 18 summarises the main differences between TEV, EEV and MCEV for each of the above components.

**FIGURE 18: COMPARISON OF TEV, EEV AND MCEV**

ITEM	TEV	EEV	MCEV
<b>PVFP</b>	Projection of future profits using real-world investment return assumptions, discounted using subjective RDR.	Projection of future profits using real-world investment return assumptions, discounted using a curve based on risk-free rates, adjusted using a risk margin, which reflects any risks not allowed for elsewhere in the valuation.  Some EEV reporting firms also opt to use a market-consistent approach, which entails using risk-free rates in the certainty equivalent approach.	Projection of future profits using market-consistent risk-neutral investment return assumptions, discounted using a curve based on risk-free rates. Discount rates can be adjusted to include an illiquidity premium.
<b>TVOG</b>	Not explicitly allowed for, although companies may argue that the cost is implicitly included through the use of a risk-adjusted discount rate.	Mandatory calculation using stochastic models for material guarantees. While both risk-neutral and real-world models are theoretically allowed, most insurers will use risk-neutral models, for ease of calculation.	Consistent with PVFP methodology, a market-consistent risk-neutral calculation using stochastic models.
<b>Cost of Capital</b>	There is no standardisation of this, but cost of capital is included by virtually every insurer.  Typical practice is to explicitly model the cost in the cash flow projections and present it as an adjustment to the EV figure.	Mandatory, calculated as the difference between required capital held at the valuation date and the present value of the projected releases of the required capital, allowing for future investment return on that capital.  Disclosed as part of required capital.	Mandatory split into FCoC and CRNHR.
<b>Discount Rate</b>	Subjective assumption, typically calculated as a risk-free rate plus a margin, or the portfolio investment return plus a margin.  A single discount rate is typical; using a curve is rare.	Two possible approaches:  ‘Top-down’ with one discount curve used for all cash flows based on risks faced by the entire organisation.  ‘Bottom-up’ where each cash flow is discounted using a risk-free rate plus the risk margin, based on the exposed risks.	A bottom-up approach is mandatory, and the curve is typically on swap rates, with adjustments for illiquidity and the risk margin.
<b>Expenses</b>	No standardisation, but typically based on current or recent and expected ongoing experience. Where expense overruns exist, insurers will typically provide both pre- and post-overrun EV/VNB figures.	Future expenses such as renewal and maintenance expenses must reflect expected ongoing operating expenses, including investment in systems to support the business, and allowing for future inflation.  Overheads and holding company expenses must be allocated in a manner consistent with current and historical practice.  Expense overruns must be allowed for.	Similar to EEV principles, with additional guidance.  Favourable changes in unit costs such as productivity gains should not normally be included, if they have not been achieved by the end of the reporting period. However, for start-up operations, allowing for improvements in unit costs in a defined period may be allowed, so long as there is sufficient evidence to justify it.  Exceptional development and one-off costs that have an impact on shareholder value must be disclosed separately, with a description of their nature.  Company pension scheme deficits must be allocated to the covered business expense assumptions in an appropriate manner.
<b>Investment Returns</b>	Typical practice is to use a risk-free rate plus risk-premium approach for main asset classes, where the risk-premium assumptions differ by asset class.	Some insurers opt to use a risk-neutral approach, while others use a risk-free rate plus a risk-premium approach.	A risk-neutral approach is typically used, where assets are assumed to earn returns based on a risk-free curve.  Where swap rates are not available or liquid enough, government bond rates are used as a proxy for the risk-free rate.

## TEV VS. EEV VS. MCEV

The primary advantage that EEV and MCEV approaches have over TEV is the greater standardisation (and less subjectivity) of assumptions, methodologies and disclosures, leading to better comparability from an investor's viewpoint. For example, MCEV assumes that assets earn the risk-free rate of return. This approach avoids the use of actual risk-weighted yields or management's view of future market directions in EV calculations, as is the case with TEV (and some EEV) reporting.

Insurers reporting on EEV or MCEV bases will typically experience greater volatility in EV results, especially if a market-consistent basis is used. This can complicate reporting and investor disclosures and is one of the reasons often cited by industry insiders as to why most Asian companies have not yet moved from TEV to EEV or MCEV. Another key reason put forward is the increased capabilities required to fully implement EEV or MCEV reporting. For example, the implementation of proper TVOG calculations requires the use of stochastic models to value embedded policy options and guarantees. This inevitably means using specialised economic scenario generator (ESG) software. This will add to financial reporting lead times. In addition, it is difficult to calibrate the ESG for Asian capital markets, which are in general not as deep or liquid as those in the US or Europe. Given this, it is understandable that Asian insurers are not prioritising moving from TEV, which is itself already a useful metric for managing their businesses, so long as it is calculated robustly and consistently. However, in a region where long-term guarantees are so prevalent and yield curves are at, or close to, historic lows, not explicitly allowing for TVOG is an obvious and significant flaw in companies' TEV financial reporting.

## INDIAN EV

In 2013, the Institute of Actuaries of India published Actuarial Practice Standard 10 (APS10), 'Determination of the Embedded Value,' establishing a standard for what is now known as IEV. It explicitly takes inspiration from, and is generally commensurate with, the MCEV principles. APS10 provided minimum disclosure requirements for Indian life insurers that are seeking an IPO share flotation.

For voluntary ongoing reporting and disclosures that are not related to an IPO, Indian insurers are free to choose their preferred EV methodologies, with no requirement to adopt IEV. With the exception of Reliance Nippon Life, all insurers operating in the Indian market have adopted market-consistent methodologies (IEV, MCEV).

## Embedded value results

This section presents EV results under three different lenses:

1. Asia-wide
2. Company by company
3. Detailed market-level

We have also provided a summary of changes in EV/VNB disclosures in the region.

The majority of our commentary is included in the 'Detailed Market Analysis' section below.

The values presented in this section relate to EV results for life insurance and other long-term insurance operations in Asia. Because of the way some companies group their business, Asian operations are sometimes included under 'international' or 'emerging markets' business units, which may include non-Asian operations.

For these 'grouped' business units (i.e., those that include Asian and non-Asian operations), the total value has been included in this report when we believe that most of the value has been generated in Asia.

### RECENT UPDATES ON REPORTED DISCLOSURES

A summary of the changes in company-level disclosures in each market over the past year is provided below:

MARKET	
<b>China</b>	Manulife has not reported EV/VNB results for China this year.
<b>Hong Kong</b>	Prudential plc has disclosed separate EV results for Hong Kong for the first time this year.
<b>India</b>	Max Life has not disclosed its required solvency capital.
<b>Indonesia</b>	Prudential plc has disclosed EV results for Indonesia for the first time this year.
<b>Malaysia</b>	Prudential plc has disclosed its EV and VNB results this year.
<b>Singapore</b>	Aviva has not reported EV/VNB results for Singapore this year.
<b>South Korea</b>	Orange Life and Samsung Fire & Marine Life have stopped disclosing EV results.
<b>Taiwan</b>	Prudential plc has not disclosed VNB results this year.
<b>Vietnam</b>	Prudential plc has disclosed new business APE results this year.

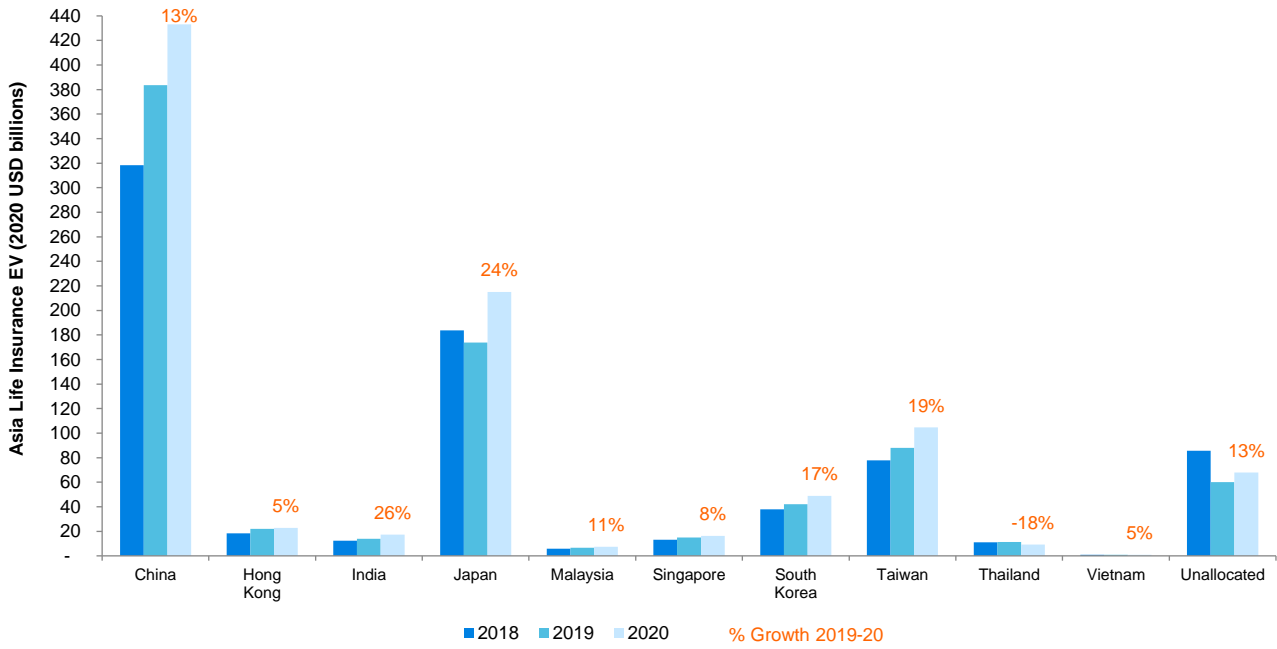
### EV IN ASIA

In 2020, reported Asian life insurance EV grew by 15.3% on a comparable basis<sup>34</sup> to USD 982 billion, up from USD 851 billion in 2019. The companies reporting the largest Asian EV at the 2020 year-end continue to be China Life, Ping An Life, and AIA, at USD 164 billion, USD 126 billion and USD 65 billion, respectively. Figure 19 sets out the total EV growth by market (to the extent that such a breakdown has been disclosed by companies).

It should be noted that the results in all the figures under this section are based on converting results in local currency to USD using prevailing exchange rates at the same (financial year-end 2020) reporting date for all years, i.e., using a constant currency basis. In contrast, the results shown in the market sections later in the report are based on exchange rates as at the respective valuation dates, and hence may differ.

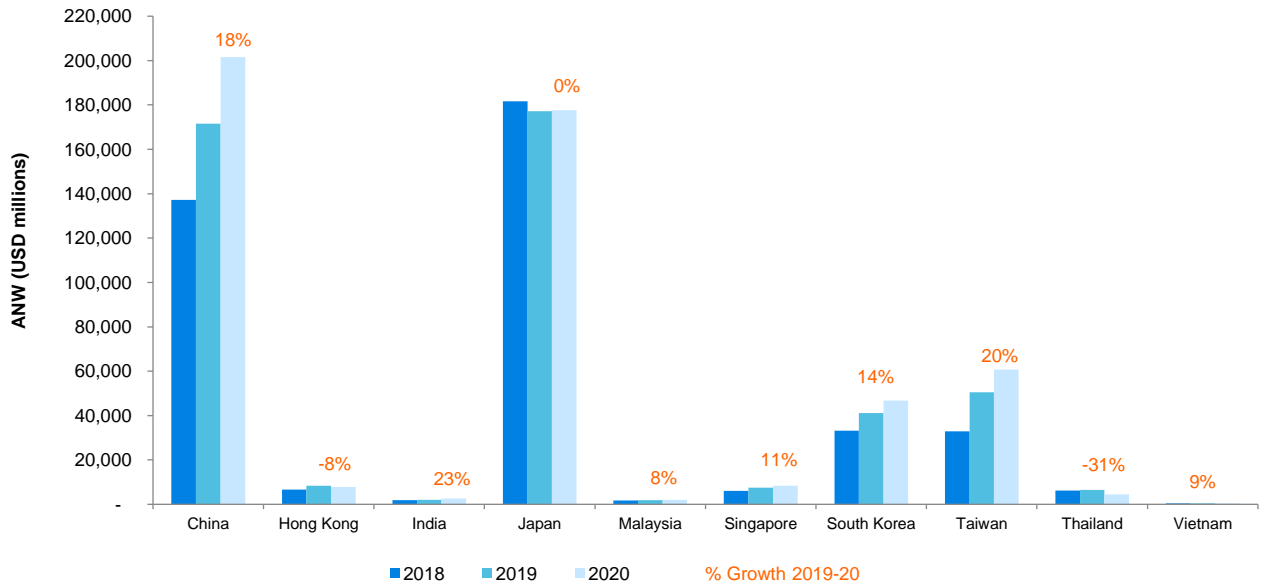
<sup>34</sup> As at the data cutoff date, some insurers have not yet disclosed their 2020 EV figures. Hence, this chart and subsequent commentary only include insurers that have a complete set of 2018, 2019, and 2020 EV figures. The results of the remaining companies will be included in our '2021 Mid-year Embedded Value Results – Asia' report. The missing companies include Max Life, PNB MetLife, Reliance Nippon Life and Meiji Yasuda Life.

FIGURE 19: COMPARABLE ASIAN LIFE INSURANCE COVERED EV,<sup>35 36</sup> 2018 TO 2020



Besides Thailand, all other Asian markets posted positive EV growth in USD terms in 2020. India reported the highest comparable EV growth in 2020 of 26%, followed by Japan and Taiwan with 24% and 19% growth, respectively. Most Indian and Japanese insurers recorded a double-digit growth in EV results in 2020, driven by positive economic variances resulting from an increase in equity yields and lower interest rates. Thailand reported a decline of 18% in comparable EV in 2020, reflecting the impact of higher statutory reserves amid the prolonged low interest rate environment and equity price falls during 2020.

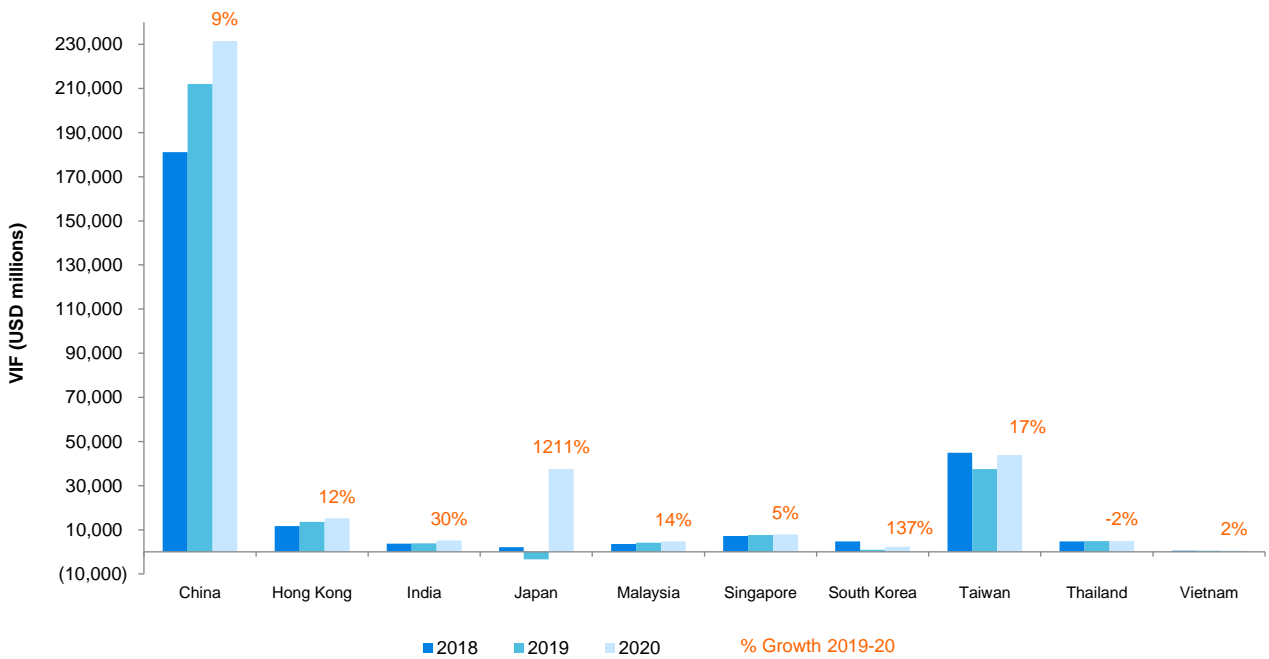
FIGURE 20: COMPARABLE ASIAN LIFE INSURANCE COVERED ANW, 2019 TO 2020



<sup>35</sup> To provide comparability and eliminate FX effects, results for all years have been converted to USD using the prevailing FX rate as at the 2020 reporting date.  
<sup>36</sup> 'Unallocated' indicates EV figures that are reported by insurers to relate to their Asian operations but have not been allocated to specific markets.



FIGURE 21: COMPARABLE ASIAN LIFE INSURANCE COVERED VIF, 2018 TO 2020

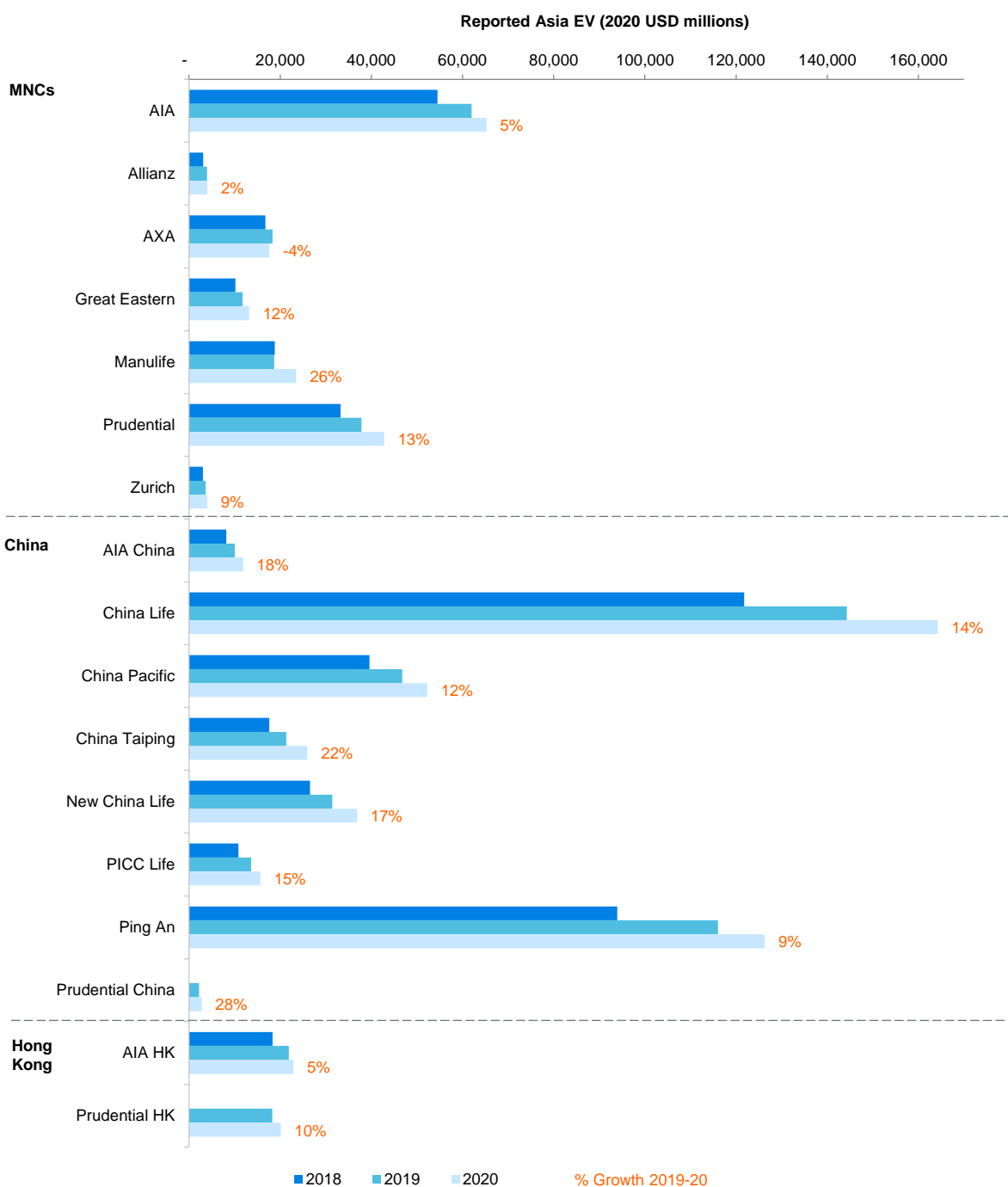


The aggregate ANW for the Asian life insurance sector increased in 2020, with only Thailand and Hong Kong reporting a fall in ANW last year. India reported the highest increase of 23% in ANW, due to higher equity returns and lower interest rates, followed by Taiwan with a 20% growth. The ANW growth for Taiwanese insurers can be attributed to the increase in unrealised gains from financial assets and real estate. Thailand reported the highest decline in ANW of 31% in 2020, which was attributed to higher statutory reserves amid the prolonged low interest rate environment and declining equity prices during 2020.

Except for Thailand, VIF growth was positive for all markets. Japan recorded the highest increase of 1,211% (in USD terms) in 2020, followed by South Korea with 137% growth. In Japan, the total life insurance sector VIF, on a comparable basis, increased from a negative USD 3,377 million to USD 37,515 million. The growth in Japan’s VIF was driven by rises in JPY and USD yield curves. The growth in VIF in South Korea has been attributed to contributions from new business and positive returns from existing business. For more details on these markets, refer to the ‘Detailed Market Analysis’ section below.

EV BY COMPANY

FIGURE 22: ASIAN LIFE INSURANCE COVERED BUSINESS EV BY COMPANY,<sup>37 38 39</sup> 2018 TO 2020



<sup>37</sup> To provide comparability and eliminate FX effects, results for all years have been converted to USD using the prevailing FX rate as at the 2020 reporting date.

<sup>38</sup> Note that some companies have not yet disclosed their 2020 EV results as at the data cutoff date of this report. The 2020 results for these companies have consequently been left blank. The insurers that have not yet published their 2020 results as at the data cutoff date include Max Life, PNB MetLife, Reliance Nippon Life and Meiji Yasuda Life.

<sup>39</sup> The definition of MNC is any company that has operations outside of its home market. In Japan, though some companies have disclosed Group MCEV and Group EEV, they are not included in the graphs because:

- Asia-level results have not been disclosed (Group EV includes EV except for Asia)
- The exposure to non-Japan is limited

FIGURE 22: ASIAN LIFE INSURANCE COVERED BUSINESS EV BY COMPANY, 2018 TO 2020 (CONTINUED)

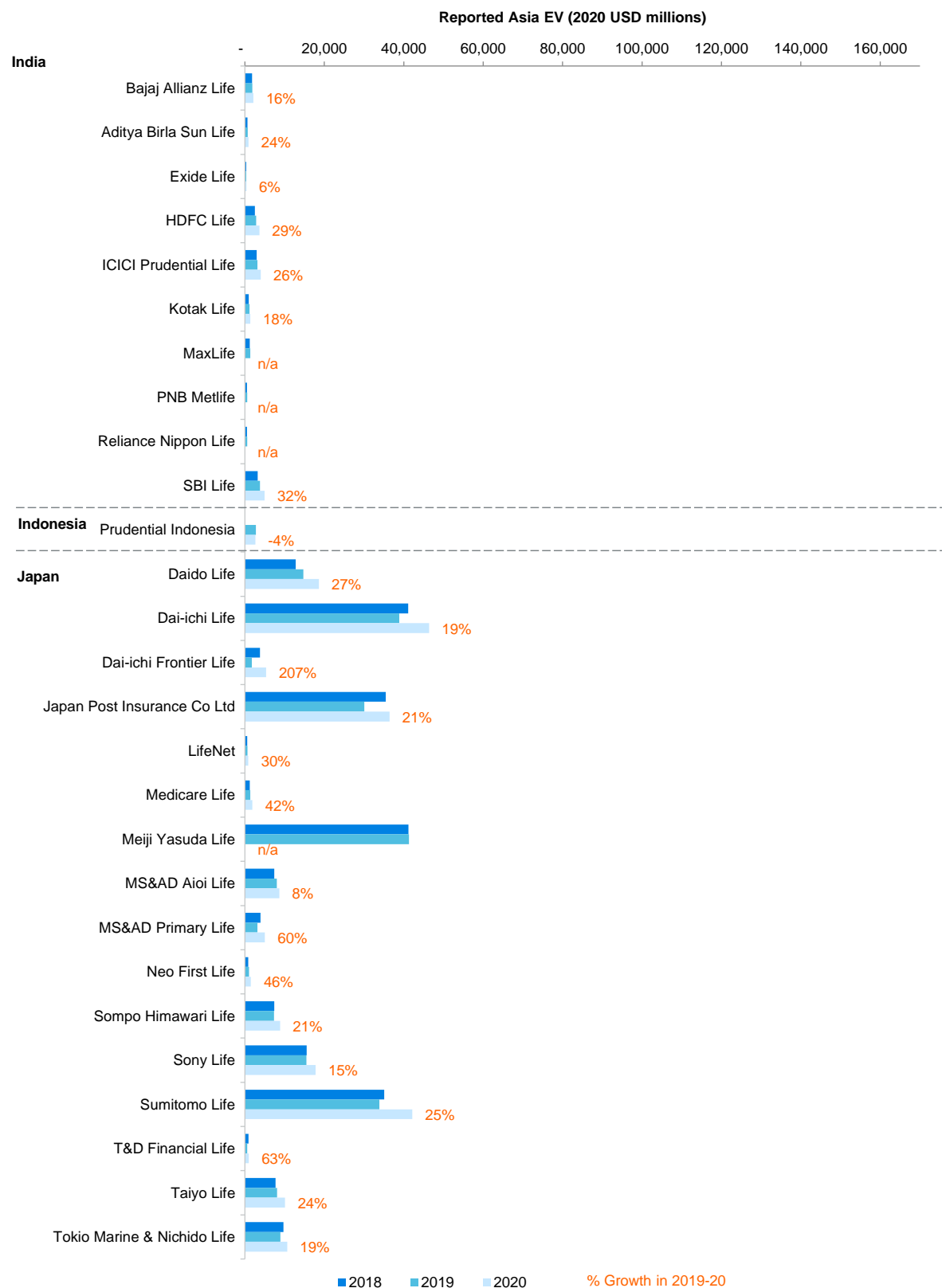


FIGURE 22: ASIAN LIFE INSURANCE COVERED BUSINESS EV BY COMPANY, 2018 TO 2020 (CONTINUED)

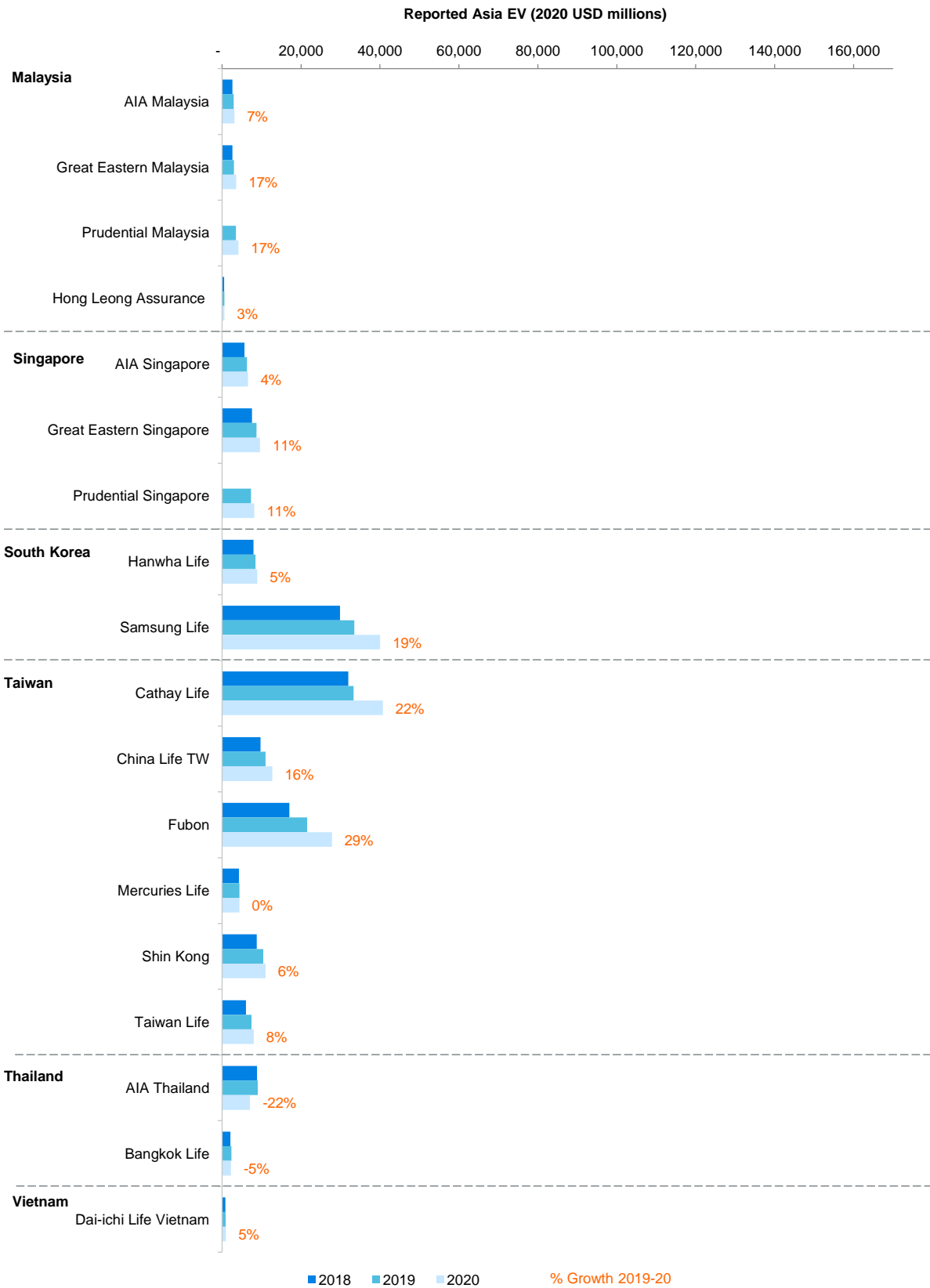


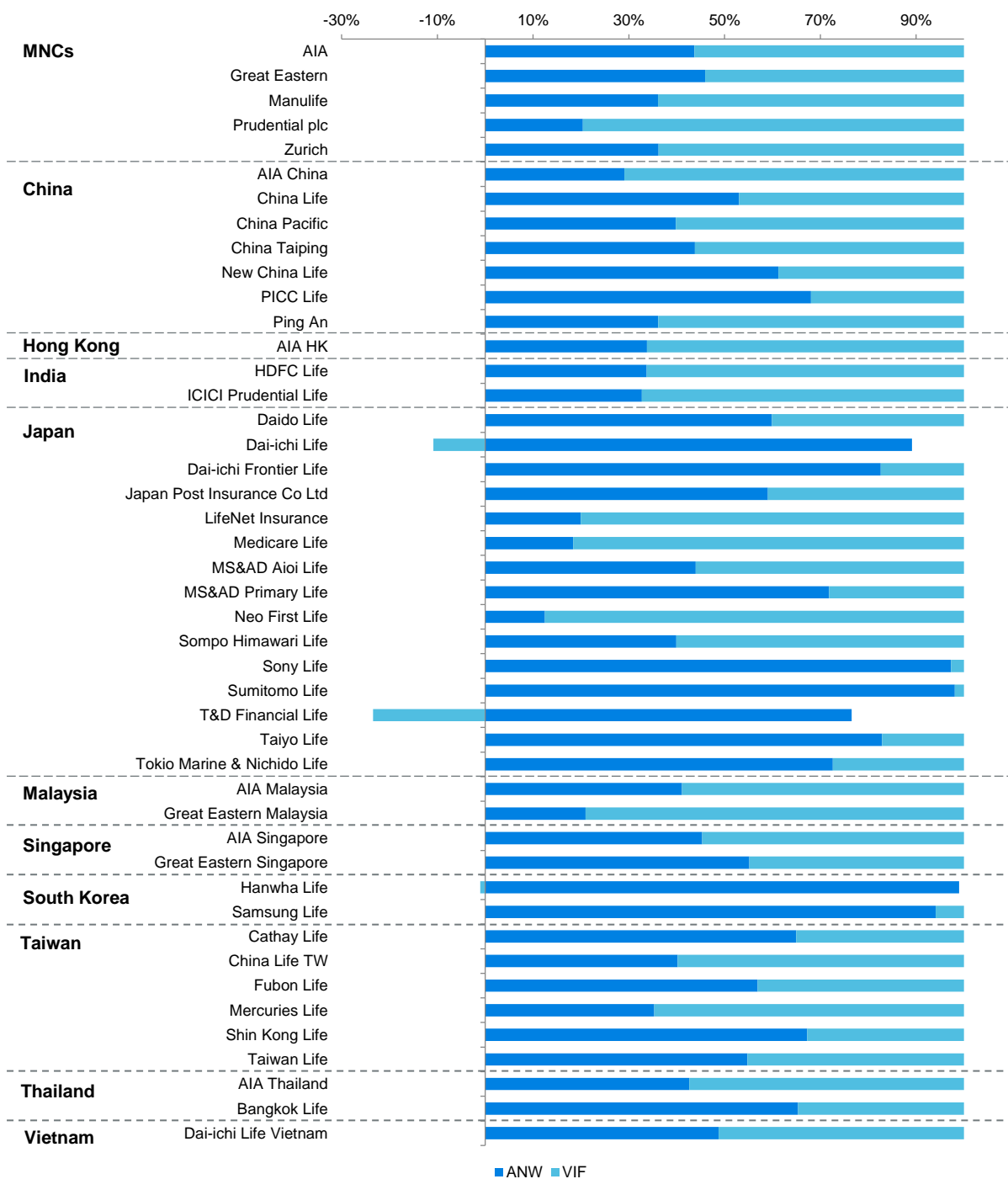
Figure 22 above shows the growth in EV by individual company. Despite the challenging economic environment associated with the pandemic, many insurers posted double-digit EV growth in 2020. Dai-chi Frontier Life reported significant EV growth of 207%, followed by T&D Financial Life and MS&AD Primary Life with 63% and 60%, respectively.

The growth in EV at Dai-ichi Life reflects adjustments made to the calculation of discount rates, to allow for corporate bond spreads based on the assets held by the company.

At the group level, Prudential plc recorded a 13% growth in EV in 2020, attributing the growth to enhanced digital platforms and its diversified, high-quality, health and protection focused business model.

Refer to the 'Detailed Market Analysis' section below for more details.

FIGURE 23: SPLIT OF 2020 ASIAN LIFE INSURANCE EV BETWEEN VIF AND ANW BY COMPANY<sup>40</sup>



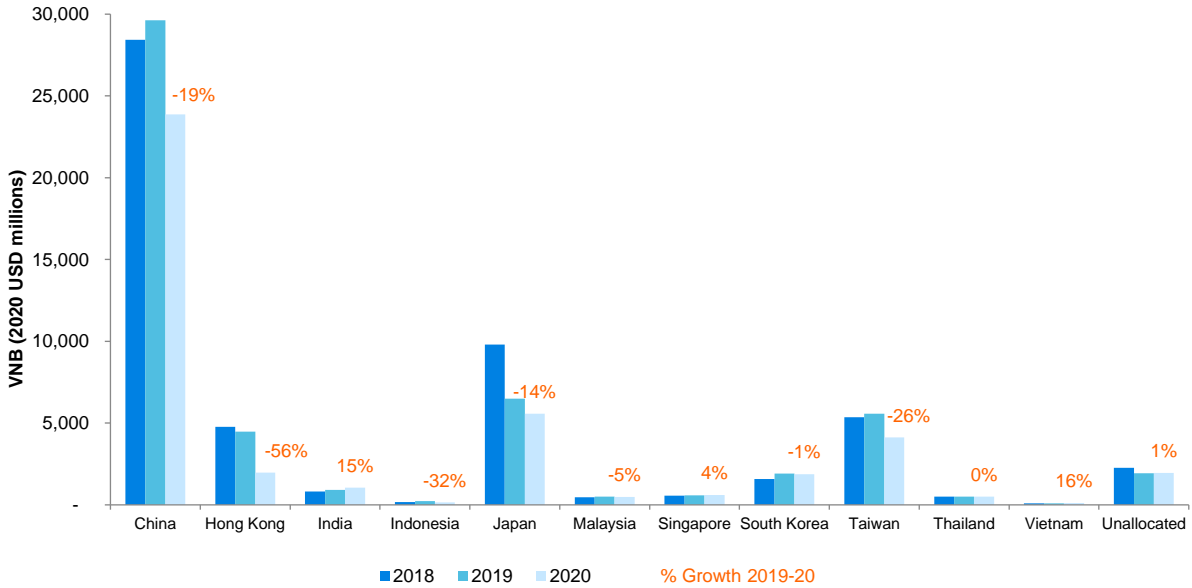
<sup>40</sup> The companies which do not disclose the split of EV between ANW and VIF have been excluded from this graph.

Figure 23 breaks down reported EV for 2020 into its VIF and ANW components for each market. In general, insurers in South Korea and Japan show a higher proportion of their EV coming from ANW, compared with insurers in other markets. The key factor for markets with higher ANW, compared to VIF, tends to be persistent low interest rates and negative spread in-force portfolios.

**VNB IN ASIA**

Total reported VNB for Asia stood at USD 42.3 billion in 2020, compared with USD 53.0 billion in 2019, representing a decline of 19.2%.<sup>41</sup> Figure 24 provides a market-by-market comparison of VNB growth based on converting results in local currency to USD using prevailing exchange rates at the same (financial year-end 2020) reporting date for all years, i.e., using a constant currency basis.

**FIGURE 24: REPORTED VNB OF ASIAN OPERATIONS ON A COMPARABLE BASIS,<sup>42</sup> 2018 TO 2020**



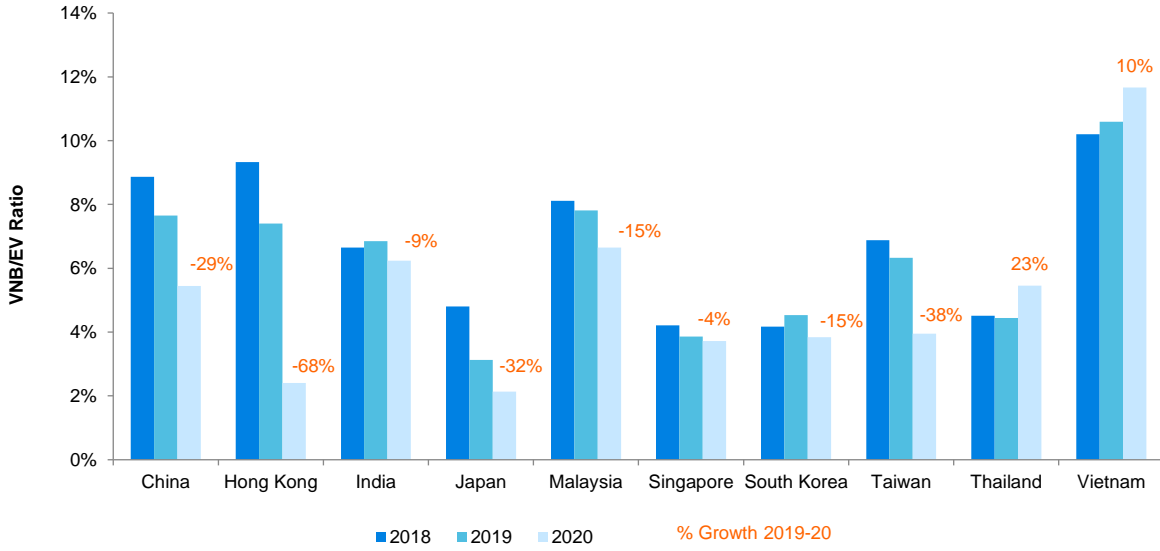
All Asian markets except for India, Vietnam and Singapore recorded declines in VNB in 2020. The decline in VNB can be attributed to reduced sales due to government-imposed lockdowns. Hong Kong recorded the largest decline in VNB of 56%, driven by lower MCV sales due to continuing travel restrictions. It is interesting to note that Prudential plc is the only company disclosing VNB results in Indonesia. Despite the company launching 60 new products in 2020, which included lower-ticket standalone protection products, the stringent COVID-19 restrictions in the market led to the decline in sales and VNB results. In Taiwan, all insurers recorded falls in VNB due to lower new business sales.

In Thailand, VNB growth in 2020 was broadly flat, increasing by 0.3%. Vietnam recorded the largest VNB growth of 16% in 2020. However, it is based on a single data point, Dai-chi Life Vietnam. All Indian insurers posted increases in VNB in 2020, mainly driven by higher new business sales and the continued shift towards selling high margin protection products.

<sup>41</sup> This percentage has been calculated on a comparable basis, i.e., only companies that have disclosed a full set of 2018, 2019, and 2020 numbers have been included here.

<sup>42</sup> As at the data cutoff date, some insurers have not yet disclosed their 2020 EV figures. Hence, this chart and subsequent commentary only includes insurers that have a complete set of 2018, 2019, and 2020 EV figures. The performance of the remaining companies will be included in our mid-year EV update report. The missing companies include Max Life, PNB MetLife, Reliance Nippon Life, and Meiji Yasuda Life.

FIGURE 25: VNB/EV RATIO,<sup>43</sup> 2018 TO 2020



Except for Thailand and Vietnam, all markets saw a fall in the VNB/EV ratio over the past year. The decline in VNB relative to EV amidst the pandemic led to a fall in the VNB/EV ratio in 2020 for most markets across the region. Thailand witnessed the highest increase in VNB/EV ratio in 2020, primarily as a result of declines in EV (as VNB results remained broadly unchanged from 2019).

<sup>43</sup> This ratio has been calculated on a constant currency basis, using the EV and VNB figures of insurers that have reported both EV and VNB during those periods. Companies that only report EV or VNB have been excluded from this analysis.

**VNB BY COMPANY**

Figure 26 presents each individual company's VNB from 2018 to 2020.

**FIGURE 26: ASIAN VNB BY COMPANY, 2018 TO 2020**

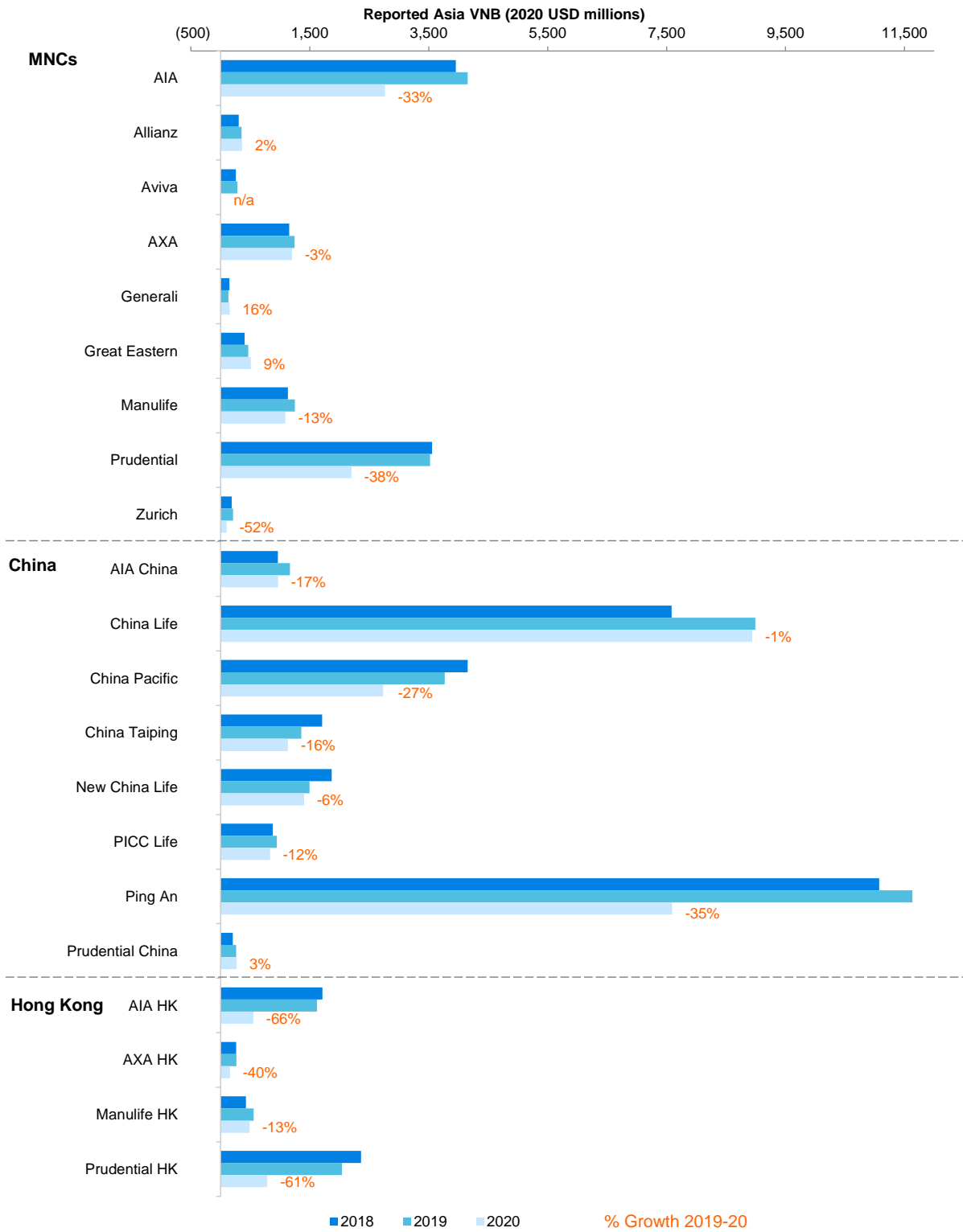




FIGURE 26: ASIAN VNB BY COMPANY, 2018 TO 2020 (CONTINUED)

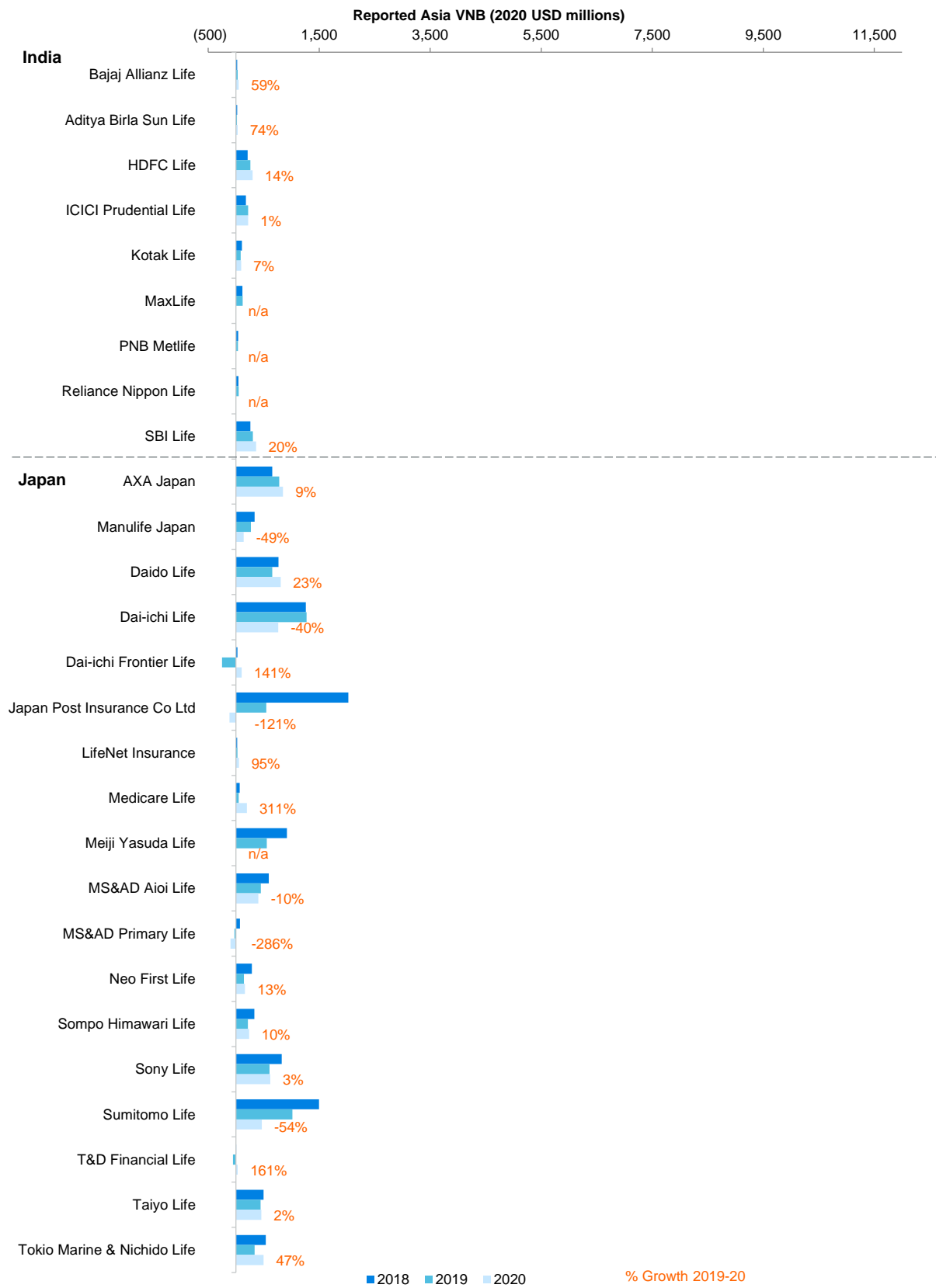
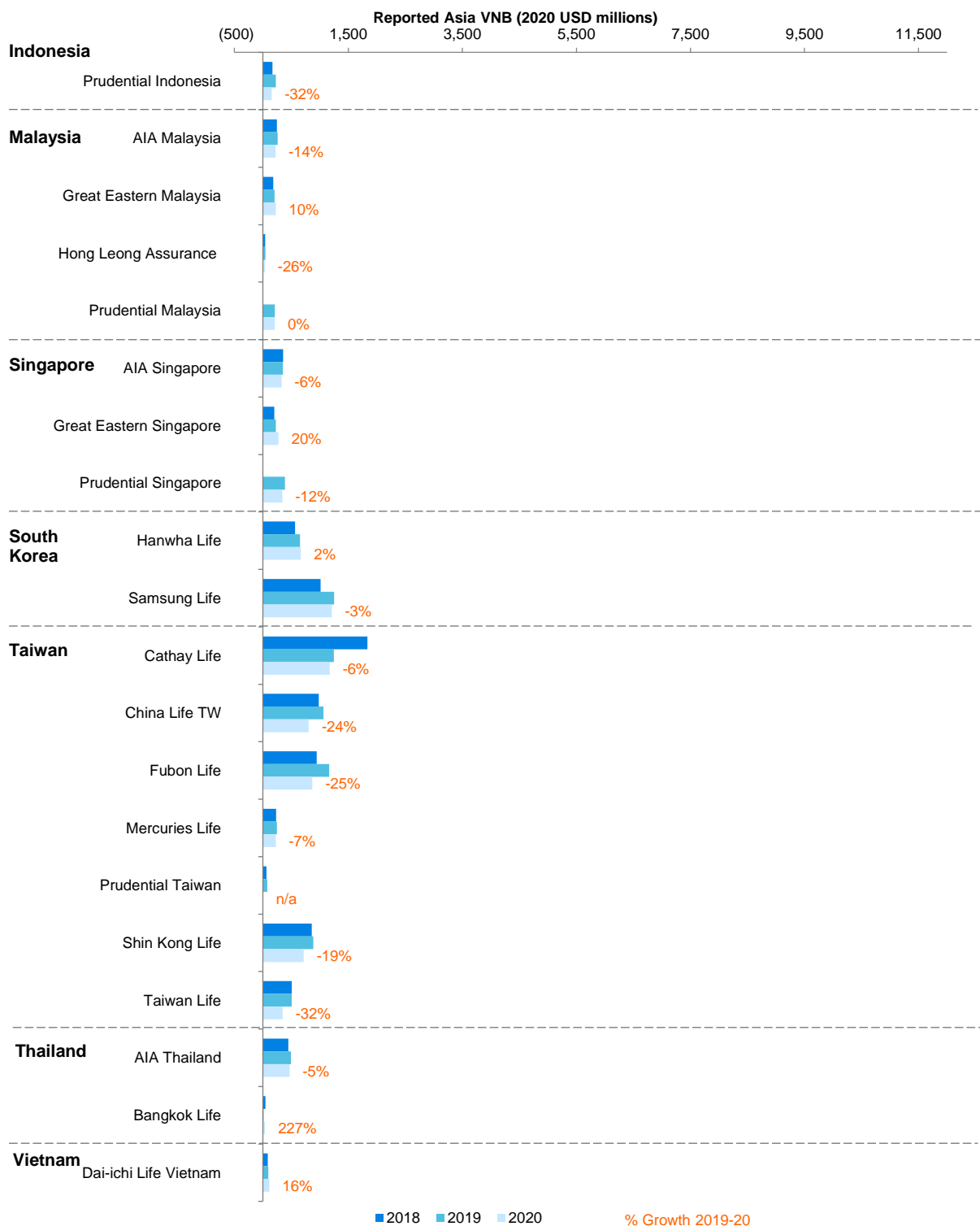


FIGURE 26: ASIAN VNB BY COMPANY, 2018 TO 2020 (CONTINUED)

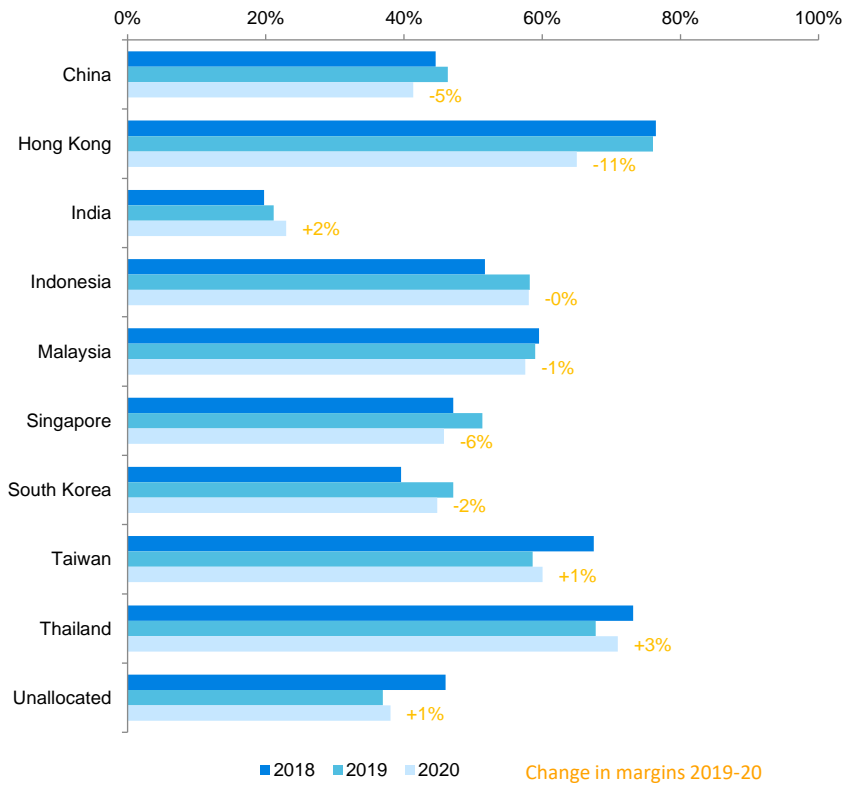


Most insurers reported a decline in their VNB results in 2020, generally reflecting lower sales due to the various lockdowns. New business sales were severely affected in the first half of the year, when the restrictions were stricter as compared to the second half of the year. The rebound in sales during later part of the year was driven by lower sales restrictions, accelerated digital transformation and product innovations.

The highest increases in 2020 VNB were posted by Medicare Life and Bangkok Life (both companies had a smaller base value for 2019). Refer to the 'Detailed Market Analysis' section below for more information.

**NEW BUSINESS MARGINS<sup>44</sup> IN ASIA**

**FIGURE 27: IMPLIED NEW BUSINESS MARGINS<sup>45</sup> BY MARKET, 2018 TO 2020**



Based on the EV disclosures available, only Thailand, Taiwan, and India exhibited positive growth in new business margins in the region, while Hong Kong and South Korea posted significant falls in margins in 2020. In Thailand, insurers attributed the increase in new business margin to a shift in product mix towards protection and participating products. The VNB margin growth in India was driven largely by the continued focus on selling higher volumes of protection business and non-participating savings business.

<sup>44</sup> New business margin has been defined as the ratio of VNB and new business APE as commonly used in Asia, except for Japanese companies that report new business margins as the ratio of VNB to the present value of new business premiums, as defined by the MCEV principles. Japan and Vietnam are excluded from this graph, since Japanese insurers and Dai-ichi Life Vietnam disclose PVNBP numbers instead of APE.

<sup>45</sup> This chart has been calculated by taking the sum of all disclosed VNB in each market besides Japan and Vietnam, divided by the commensurate APE figure sold by the company in the market. As such, the reliability of this chart will increase depending on the actual number of companies (and their collective market share) disclosing information by geography. This means that for markets with very few disclosures, such as Taiwan, Indonesia, Malaysia, Singapore and Thailand, this analysis may not reflect profitability across the whole market. For further detail, please refer to the individual jurisdictions in the 'Detailed Market Analysis' section below.

**DETAILED MARKET ANALYSIS**

This section presents EV and VNB results by market, together with some commentary on relevant issues in each jurisdiction.

In order to provide a clearer picture of each market's performance, all EV and VNB results in this section have been converted to local currency using the prevailing exchange rate as at each insurer's reporting dates for each year (2018, 2019, and 2020).<sup>46</sup> This contrasts with the previous sections' figures, where the EV and VNB results were converted to USD using the prevailing exchange rate at each insurer's reporting date for 2020. As a result of exchange rate differences, the 2020 growth rates for each MNC's subsidiary may not be the same as those presented in the previous sections.

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<sup>46</sup> Please note that not all the financial years of insurers coincide with calendar years. In this report, we have defined 2020 results to be the financial year results that contain the majority of 2020 calendar year results. Results for Indian and Japanese insurers that have a March financial year-end date correspond to the financial results for the year ending 31 March 2021. Hence, when referring to Indian and Japanese insurers, FY2020 refers to the year ending 31 March 2021.

China

FIGURE 28: REPORTED EV OF CHINESE INSURANCE OPERATIONS, 2018-2020

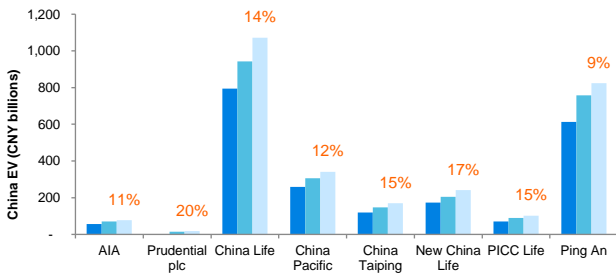


FIGURE 29: REPORTED ANW OF CHINESE INSURANCE OPERATIONS, 2018-2020

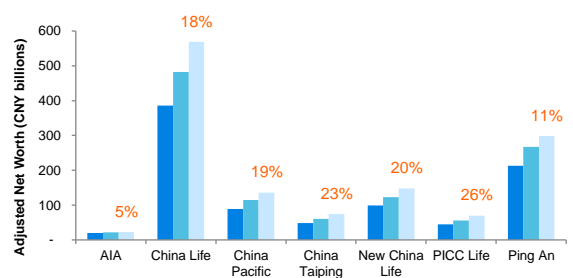


FIGURE 30: REPORTED VIF OF CHINESE INSURANCE OPERATIONS, 2018-2020

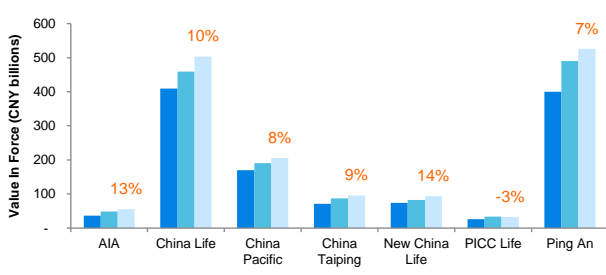


FIGURE 31: REPORTED VIF/ANW SPLIT OF CHINESE INSURANCE OPERATIONS, 2020

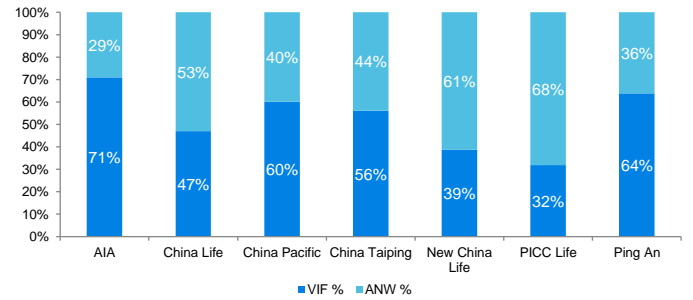


FIGURE 32: REPORTED VNB OF CHINESE INSURANCE OPERATIONS, 2018-2020

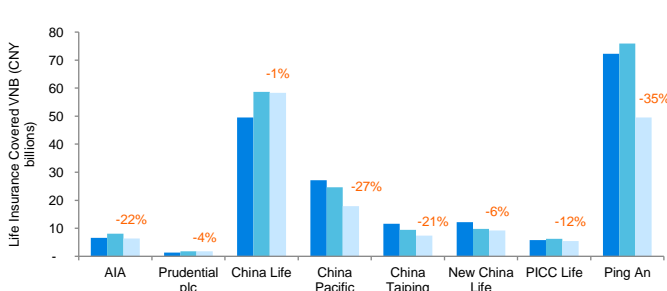


FIGURE 33: REPORTED APE<sup>47-48</sup> OF CHINESE INSURANCE OPERATIONS, 2018-2020

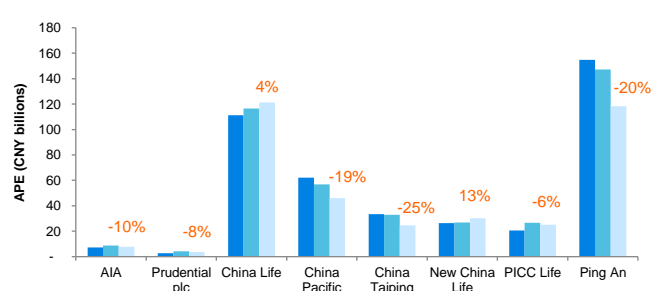
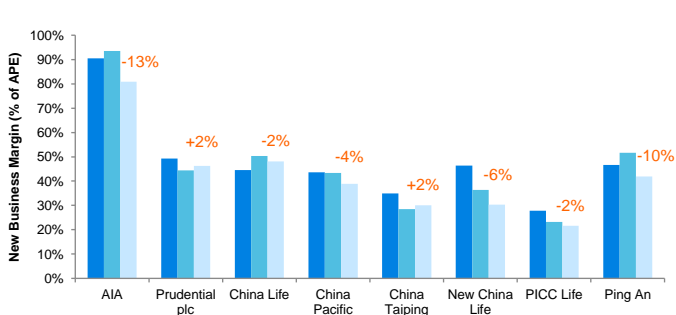


FIGURE 34: REPORTED NEW BUSINESS MARGINS<sup>49</sup> OF CHINESE INSURANCE OPERATIONS, 2018-2020



■ 2018 ■ 2019 ■ 2020

1 Year Growth % 2019-20

Change in margins 2019-20

<sup>47</sup> APE figures, where they are not disclosed explicitly by the company, are calculated by Milliman based on disclosed regular premium and single premium new business figures and may not represent actual APE of the respective companies.

<sup>48</sup> APE figures include short-term insurance premiums as life insurers write both short-term and long-term business for both life and health insurance.

<sup>49</sup> Note that the margins are calculated as the disclosed VNB divided by the calculated APE in Figure 33 and may not represent actual margins of the respective companies.

Eight companies reported 2020 EV results in China, with all but Ping An reporting double-digit growth for the year. Prudential plc reported the highest growth in EV at 20%, followed by New China Life at 17%, China Taiping and PICC Life both at 15% in 2020.

VNB declined for all insurers in China in 2020, with Ping An posting the largest fall of 35%, followed by China Pacific recording a 27% decrease in VNB. The significant fall in VNB of Ping An was attributed to the difficulty of selling long-term protection products by agents with limited face-to-face interaction and lower consumer spending amid the COVID-19 pandemic. The fall of 22% in VNB for AIA China was similarly blamed on the difficult sales conditions for its traditional agency channel.

China Taiping recorded a decline of 21% in VNB in 2020, again, due to lower new business sales associated with COVID-19. During the second half of 2020, the company focused on selling high-value business, strengthening business promotion, and improving expense spending efficiency of its bancassurance channel to counteract the impact of the virus. The lower VNB results in 2020 also limited the growth in EV in the market, as compared to 2019.

Most insurers have kept their discount rate assumptions unchanged from 2019. However, Prudential plc and New China Life have decreased their discount rate by 50 bps to 7.7% and 11.0%, respectively. Similarly, most insurers did not change their investment return assumptions in 2020 except for New China Life and PICC Life, where assumptions were reduced. The full set of economic assumptions disclosed in the market is set out in Figure 103 below. The domestic life insurers typically assume investment returns rising from around 4.5% to 6.0%, with RDRs of around 11.0%.

The CBIRC announced changes to the solvency management rules for insurance companies, which came into effect on 1 March 2021, focusing on strengthening the control of insurers' solvency and protecting consumers. The new regulations are based on a three-pillar framework for solvency supervision, consisting of quantitative regulatory requirements, qualitative regulatory requirements and market discipline mechanisms.

## Hong Kong

FIGURE 35: REPORTED EV<sup>50</sup> OF HONG KONG INSURANCE OPERATIONS, 2018-2020<sup>51</sup>

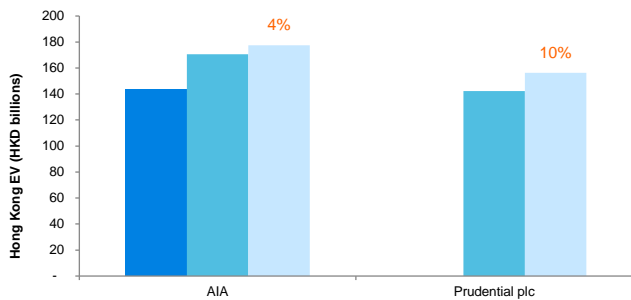


FIGURE 36: REPORTED ANW OF HONG KONG INSURANCE OPERATIONS, 2018-2020

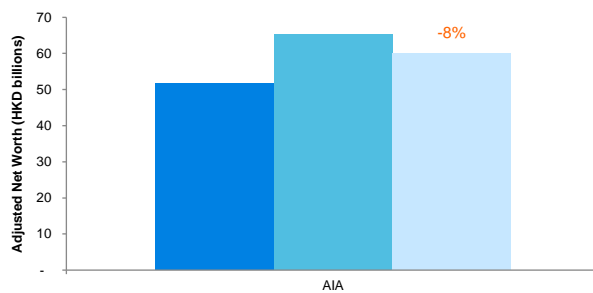


FIGURE 37: REPORTED VIF OF HONG KONG INSURANCE OPERATIONS, 2018-2020

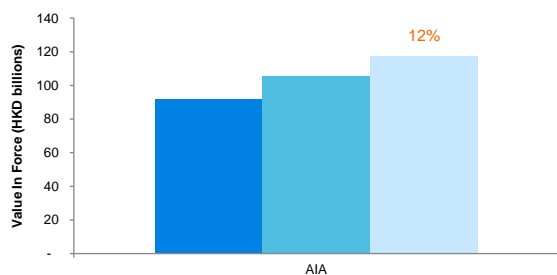


FIGURE 38: REPORTED VIF/ANW SPLIT OF HONG KONG INSURANCE OPERATIONS, 2020

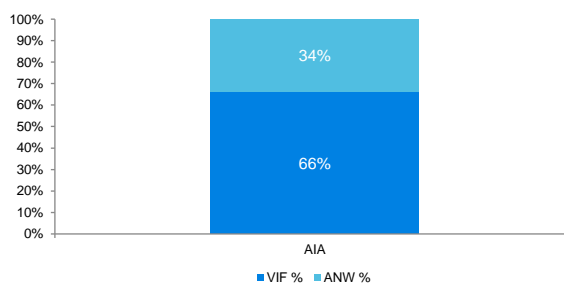


FIGURE 39: REPORTED VNB OF HONG KONG INSURANCE OPERATIONS, 2018-2020

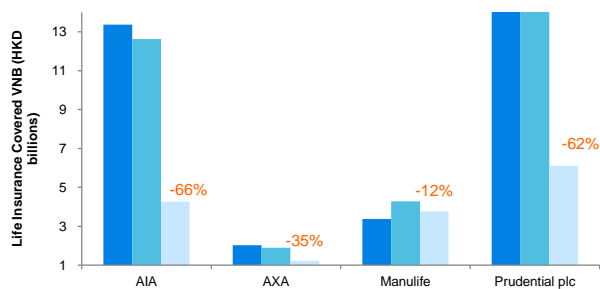


FIGURE 40: APE OF HONG KONG INSURANCE OPERATIONS, 2018-2020

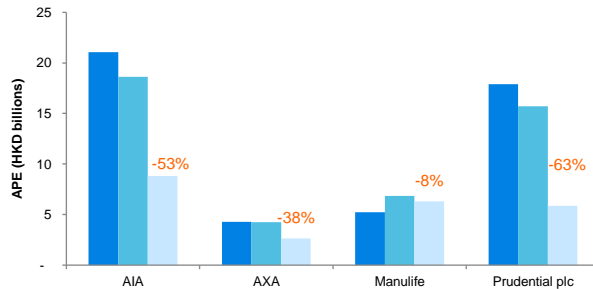
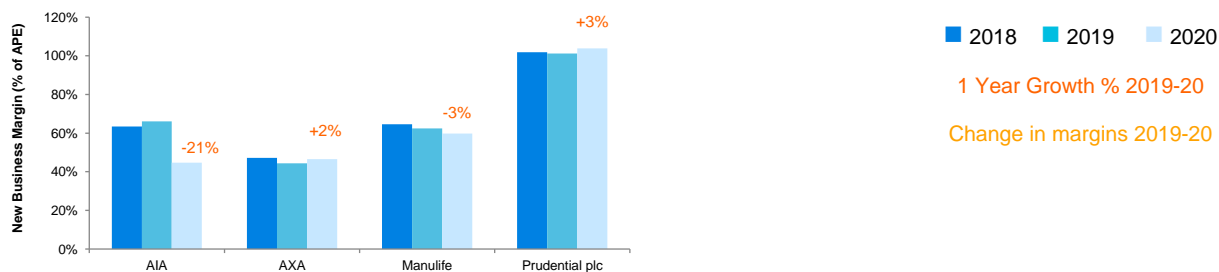


FIGURE 41: REPORTED NEW BUSINESS MARGIN (% OF APE) OF HONG KONG INSURANCE OPERATIONS, 2018-2020



<sup>50</sup> Prudential plc disclosed its EV results separately for Hong Kong for the first time as at 31 December 2019 and 31 December 2020.

<sup>51</sup> The FX rates used for conversion to local currency (for all charts) are listed in Appendix B.

AIA and Prudential plc disclosed both EV and VNB results for their Hong Kong operations in 2020, while AXA and Manulife reported only new business-related results.

All the above insurers recorded declines in VNB in 2020, with AIA, Prudential plc, and AXA posting large falls of 66%, 62% and 35%, respectively, and Manulife reporting a reduction of 12%. Many insurers in Hong Kong, including AIA and Prudential plc, saw significant falls in sales to MCV in 2020 due to the continuing travel restrictions. In 2020, the growth in new business APE was depressed for all the insurers above in local currency terms.<sup>52</sup> Prudential plc and AIA saw new business APE drop by 63% and 53%, respectively. Manulife's 8% decline in new business APE was less pronounced, with the business being less dependent on MCV sales than some of its peers.

AXA and Prudential plc disclosed increases in new business margins of 2% and 3%, respectively, while AIA and Manulife saw falls of 21% and 3%, respectively. AIA attributed the decline in new business margins to acquisition expense overruns resulting from the drop in sales, a shift in product mix and lower interest rates.

According to the IA, Hong Kong's overall 2020 individual non-linked business premiums increased by 1.5% to HKD 463.9 billion, while linked business premiums rose by 0.1% to HKD 27.7 billion. New business premiums attributable to the MCV segment decreased by 84.3% from 2019 to 2020, to a level of HKD 6.8 billion. MCV sales accounted for only 5.1% of the total new individual business in 2020, compared to 25.2% in 2019.

The IA announced an extension of the temporary facilitative measures introduced last year for non-face-to-face distribution of specific protection insurance products until 30 September 2021 in view of COVID-19 pandemic developments.

The GWS guideline issued by the IA became effective on 29 March 2021. The guideline is applicable to designated insurance holding companies that are subject to IA's group supervision. At the effective date, this included the holding companies of AIA, FWD and Prudential plc. The guideline sets out the principles and standards for these designated insurance holding companies in a number of areas related to risk and capital management. In particular, these insurance groups are subject to capital requirements determined at a group level.

There have been recent developments in the establishment of the Hong Kong RBC framework. Specifically, there were further enhancements of certain detailed areas of the technical specification, and insurers were required to perform stress testing as at 31 December 2020 as part of the first ORSA report to be submitted to the IA, with these enhancements considered. We understand that there have been discussions between the IA and industry players on the potential early adoption of the RBC framework for some companies.

To further regulate the management of participating products and participating funds, the IA has drafted a set of participating fund management requirements for industry consultation related to fund segregation, asset fungibility and capital requirements. Feedback is to be provided to the IA by May 2021. Given the significance of participating business in Hong Kong, further discussions and revisions to the draft requirements are expected.

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<sup>52</sup> APE throughout this section have been converted to local currency using the prevailing exchange rates applicable at each reporting date (2018, 2019, and 2020). These figures are different from the disclosed APE in reported currency terms.



India

FIGURE 42: REPORTED EV OF INDIAN INSURANCE OPERATIONS, 2018-2020<sup>53 54</sup>

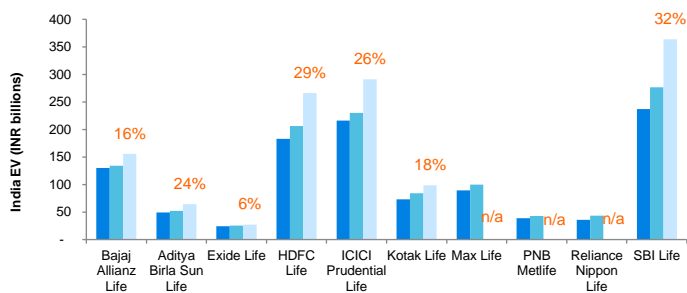


FIGURE 43: REPORTED ANW OF INDIAN INSURANCE OPERATIONS, 2018-2020<sup>55</sup>

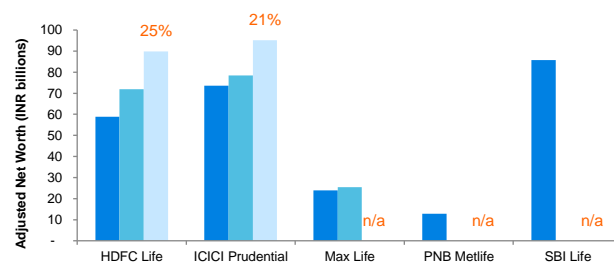


FIGURE 44: REPORTED VIF OF INDIAN INSURANCE OPERATIONS, 2018-2020

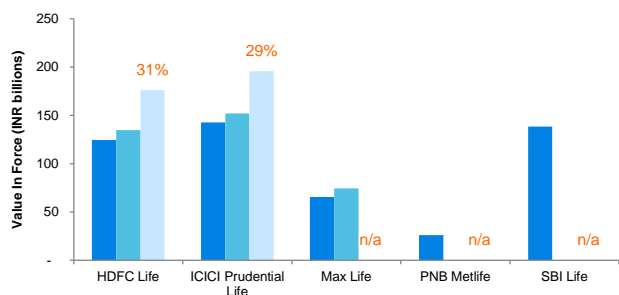


FIGURE 45: REPORTED VIF/ANW SPLIT OF INDIAN INSURANCE OPERATIONS, 2020

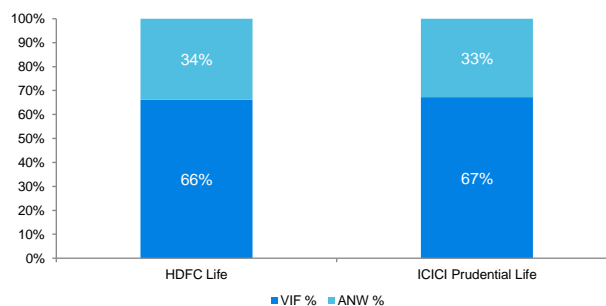


FIGURE 46: REPORTED VNB<sup>56</sup> OF INDIAN INSURANCE OPERATIONS, 2018-2020

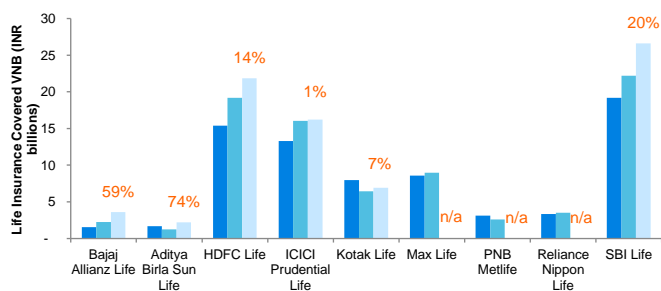


FIGURE 47: REPORTED APE<sup>57</sup> OF INDIAN INSURANCE OPERATIONS, 2018-2020

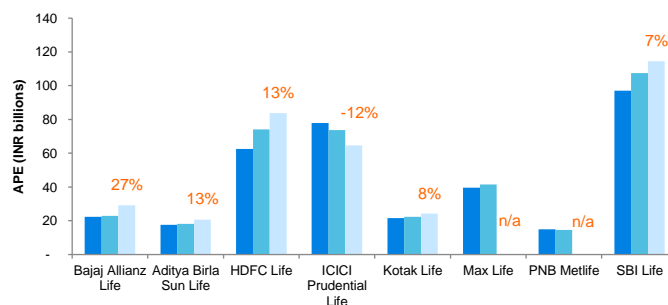
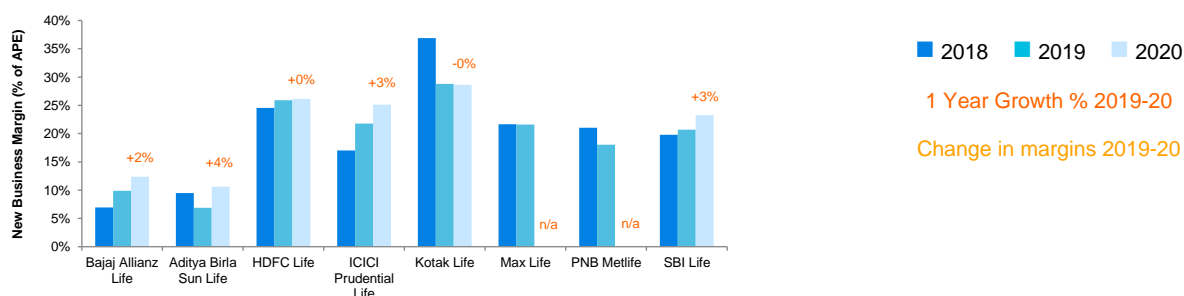


FIGURE 48: REPORTED NEW BUSINESS MARGIN OF INDIAN INSURANCE OPERATIONS, 2018-2020



<sup>53</sup> For the purposes of this report, FY2020 for India insurers represents the financial year ending 31 March 2021.

<sup>54</sup> Max Life, PNB MetLife, and Reliance Nippon Life have not disclosed their FY2020 results before the cutoff date for this report, i.e., 31 May 2021.

<sup>55</sup> In figures 43, 44, and 45, Aditya Birla Sun Life, Bajaj Allianz Life, Exide Life, and Kotak Life have been excluded, as their split of EV for FY2020 has not been disclosed.

<sup>56</sup> For comparability, the VNB and new business margin figures are after the impact of expense overruns.

<sup>57</sup> Exide Life has been excluded, as APE results were not disclosed at the time of writing this report. For Aditya Birla Sun Life and Kotak Life, APE has been calculated using disclosed VNB and new business margins on an APE basis.

In India, embedded values continue to increase, with all companies (except Exide Life) posting double-digit growth. EV/VNB methodology in India has also largely converged to a market-consistent approach. All insurers use either MCEV or IEV methodologies, except for Reliance Nippon Life, which last disclosed its results as at 31 March 2020 using TEV methodology.

Reported new business margins (after allowing for the impact of acquisition expense overruns) are in the range of 11% to 29%. All insurers recorded an increase in VNB results in FY2020. Aditya Birla Sun Life posted the highest VNB growth of 74% in FY2020, attributing this to a more profitable product mix and efficient expense management. Increasing sales of protection business contributed to improving the VNB margins for most insurers.

All insurers reported an increase in new business APE except ICICI Prudential Life which recorded a fall of 12% in FY2020. The company attributed the decline in new business APE to supply-side constraints in protection products due to the COVID-19 pandemic.

To accelerate the growth of microinsurance in the market, a committee set up by Insurance Regulatory and Development Authority of India (IRDAI) has suggested lowering the initial capital requirements for standalone microinsurance companies to INR 200 million from the current level of INR 1 billion.

In January 2021, the IRDAI directed all life insurers to mandatorily offer a standard, individual immediate annuity product from April 2021. With the aim to facilitate ease of understanding, the single premium, non-linked, non-participating annuity plan will have simple features and standardised terms and conditions.

In March 2021, the Insurance Act was amended to increase the FDI limit for the insurance sector from 49% to 74%. This may facilitate change of shareholding structures in insurers where the foreign promoter is keen to increase its stakes to gain majority control. While there are ongoing discussions taking place there has not been any activity on this front as yet.

Several reforms directed at the life insurance industry were announced in the 2021 Union Budget of the Government of India. Milliman has published an e-Alert discussing the key announcements impacting the life insurance industry, covering FDI, changes to the taxation of unit-linked insurance plans (ULIPs) in the hands of consumers, and the initial public offering (IPO) of the Life Insurance Corporation of India (LIC). The e-Alert is available [here](#).

Indonesia

FIGURE 49: REPORTED EV OF INDONESIAN INSURANCE OPERATIONS, 2018-2020

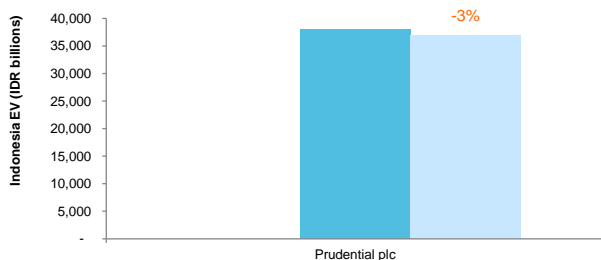


FIGURE 50: REPORTED VNB<sup>58</sup> OF INDONESIAN INSURANCE OPERATIONS, 2018-2020<sup>59</sup>

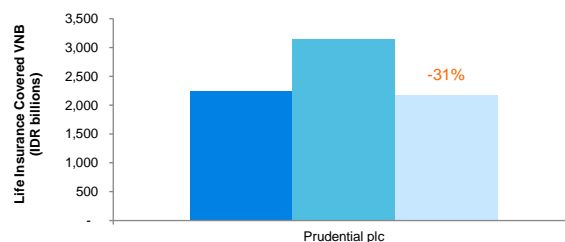


FIGURE 51: REPORTED APE<sup>60</sup> OF INDONESIAN INSURANCE OPERATIONS, 2018-2020

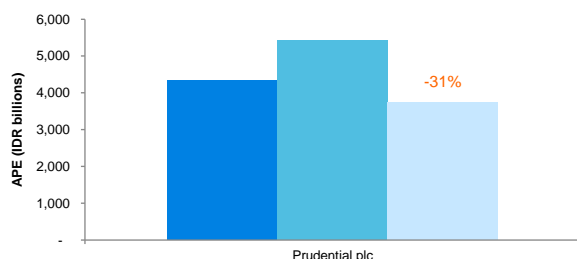
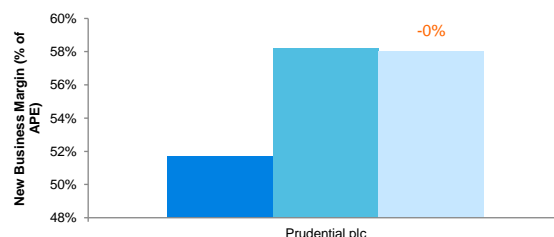


FIGURE 52: REPORTED NEW BUSINESS MARGINS OF INDONESIAN INSURANCE OPERATIONS, 2018-2020



■ 2018 ■ 2019 ■ 2020

1 Year Growth % 2019-20

Change in margins 2019-20

Prudential plc remains the only insurer to disclose VNB and new business margins for Indonesia in 2020. For the first time the company has also disclosed its EV results for Indonesia, as at 31 December 2019 and 31 December 2020. Although AIA’s results are not disclosed (it is part of an aggregated classification), some of the underlying EV assumptions are provided.

For 2020, Prudential plc reported a fall of 31% in new business APE in local currency terms,<sup>61</sup> down from IDR 5,415 billion in 2019 to IDR 3,740 billion in 2020. The company also reported a decrease of 31% in VNB in local currency terms. Despite the launching of 60 new products in 2020, which included lower-ticket standalone protection products, the stringent COVID-19 restrictions led to the decline in new business APE sales and VNB results.

The RDR for AIA Indonesia remained unchanged at 13.0% in 2020, while for Prudential plc it has decreased from 10.8% for both new business and in-force business in 2019 to 8.9% and 10.0% in 2020, respectively. AIA Indonesia’s 2020 investment return assumptions remained unchanged from 2019 at 12.0% for equity returns and 7.5% for 10-year government bond yields. Prudential plc decreased its 10-year government bond yield assumption by 70 bps to 6.5% for 2020. The 10-year government bond yield in Indonesia as at 31 December 2020 was approximately 5.9%.

<sup>58</sup> VNB and APE throughout this section have been converted to local currency using the prevailing exchange rates applicable at each reporting date (2018, 2019, and 2020). These figures are different from the disclosed VNB/APE in local currency terms due to exchange rate differences as VNB/APE presented in EV disclosures have been converted based on average exchange rates rather than the prevailing exchange rate applicable at the reporting date.

<sup>59</sup> The FX rates used for conversion to local currency (for all charts) are listed in Appendix B.

<sup>60</sup> Ibid.

<sup>61</sup> The disclosed 2020 and 2019 VNB and APE growth for Prudential in GBP terms are different from the values shown in figures 50 and 51. Please refer to footnotes 57 and 58 for further explanation.

The Indonesia Life Insurance Association reported a 6.1% decrease in total premium income, down from IDR 199.87 trillion in 2019 to IDR 187.58 trillion in 2020. This reflects an 8.9% decline in new business premium (down from IDR 125.9 trillion to IDR 114.75 trillion) and a decrease of 1.5% in renewal premiums (down from IDR 73.94 trillion to IDR 72.84 trillion). The on-going COVID-19 pandemic and the resulting difficulties faced by insurers in meeting the requirements of a face-to-face meeting and wet signatures from customers to sell unit-linked policies are main explanations given for the decrease. The higher level of lapses, premium holidays and extended grace periods experienced by the industry may evidence customers' difficulties in continuing to pay insurance premiums. From May 2020, the OJK allowed insurers to sell unit-linked policies by video call or video conference and permitted customers to use digital signatures.

In September 2020, the OJK issued regulation no. 44/POJK.05/2020 which requires non-bank institutions to implement a risk management framework at a company and holding company level. The framework should include strategic, operational, insurance, credit, market, liquidity, regulatory, compliance and reputational risk. Insurers must form a risk management committee and risk management task force or unit. A risk management task force is required to prepare a quarterly report describing each company's risk exposure. The OJK has extended the countercyclical policies against the impact of COVID-19 for non-banking financial services (such as valuing investment assets at amortised value for solvency purposes, etc.) until 17 April 2022.

As part of the process for conventional insurers to spin off their Syariah business unit, or 'window' companies are required to prepare separation work plans giving details of how the business units will be divested and submit these work plans to the OJK by October 2020. The work plans had to be approved by companies' shareholders and board of directors and give details of the step plans and timelines for spin-off.

Japan

FIGURE 52: REPORTED EV OF JAPANESE INSURANCE OPERATIONS, 2018-2020<sup>62</sup>

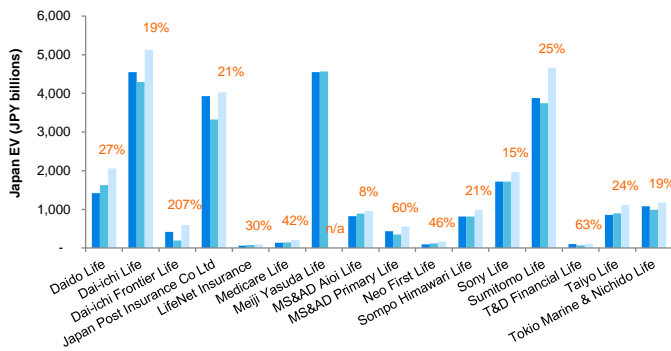


FIGURE 53: REPORTED ANW<sup>63</sup> OF JAPANESE INSURANCE OPERATIONS, 2018-2020

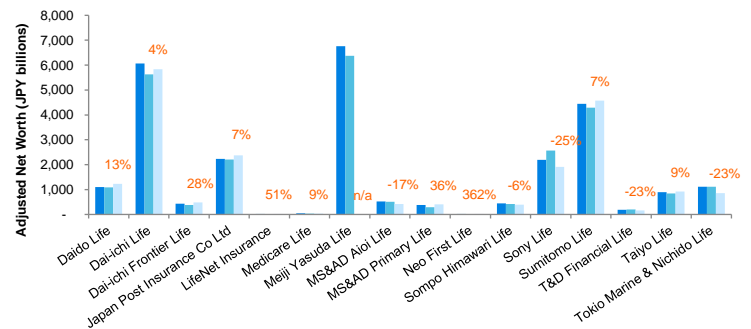


FIGURE 54: REPORTED VIF<sup>64</sup> OF JAPANESE INSURANCE OPERATIONS, 2018-2020

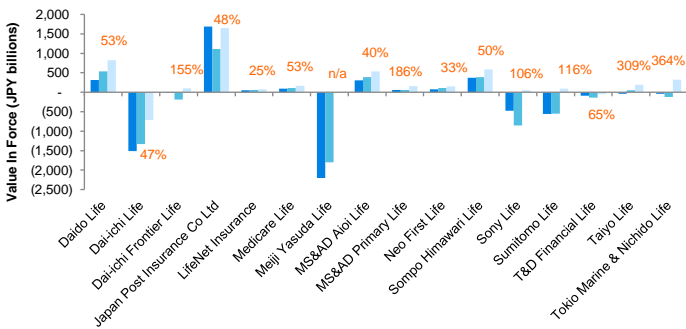


FIGURE 55: REPORTED VIF/ANW SPLIT OF JAPANESE INSURANCE OPERATIONS, 2020

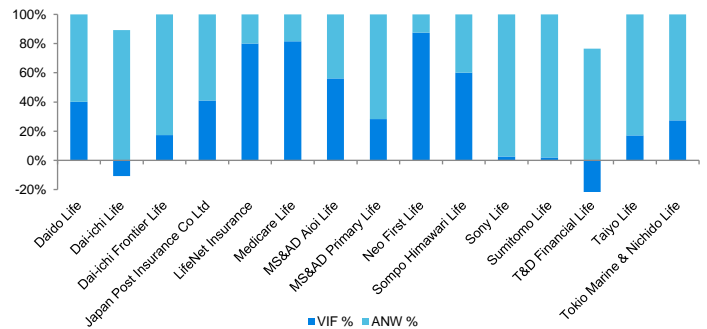


FIGURE 56: REPORTED VNB OF JAPANESE INSURANCE OPERATIONS, 2018-2020

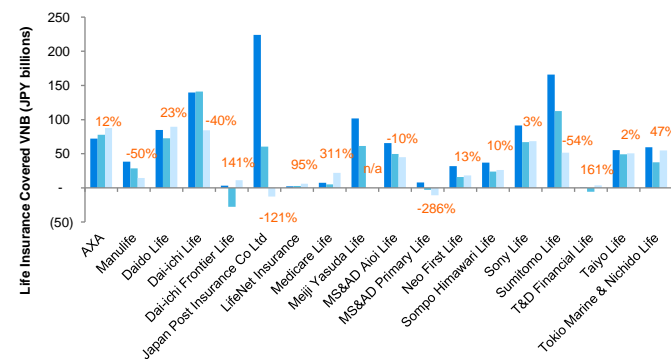


FIGURE 57: REPORTED PVBNP<sup>65</sup> OF JAPANESE INSURANCE OPERATIONS, 2018-2020

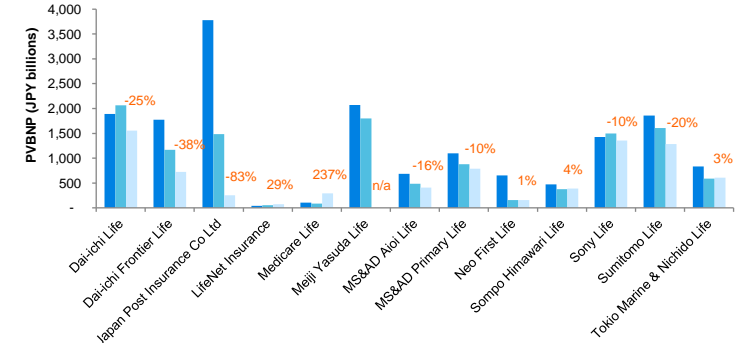
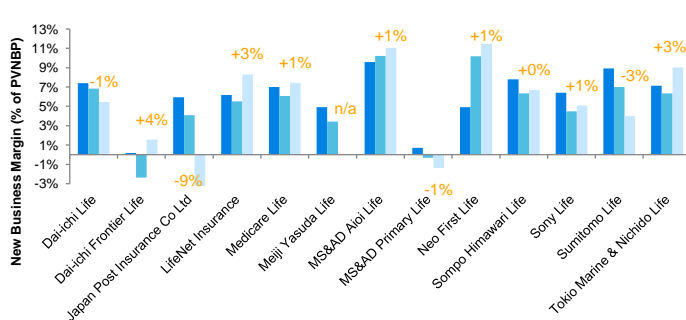


FIGURE 58: REPORTED NEW BUSINESS MARGINS OF JAPANESE INSURANCE OPERATIONS, 2018-2020



■ 2018 ■ 2019 ■ 2020

1 Year Growth % 2019-20

Change in margins 2019-20

<sup>62</sup> Meiji Yasuda Life did not disclose their FY2020 results before the cut-off date for this report, i.e., 31 May 2021.

<sup>63</sup> In 2020, Japan Post Insurance Co Ltd and MS&AD Primary Life have included unrealized gains on assets backing liabilities in VIF, instead of ANW.

<sup>64</sup> Ibid.

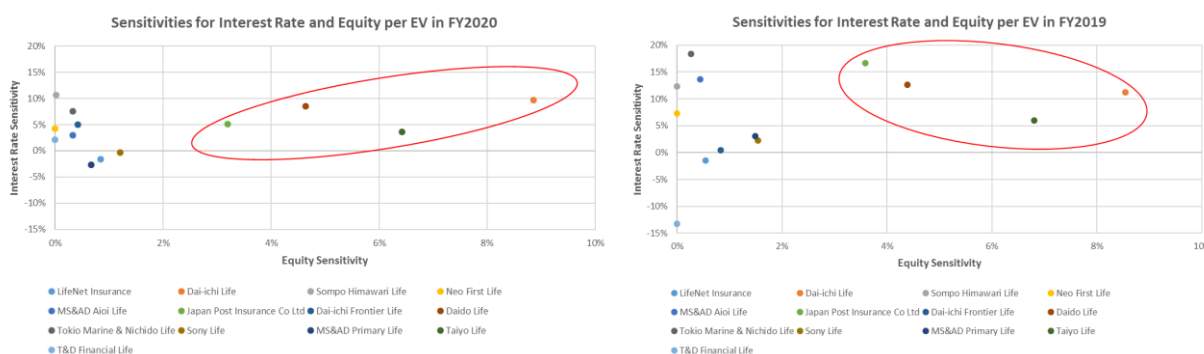
<sup>65</sup> AXA and Manulife have been excluded from this graph as they do not disclose PVBNP numbers.

As elsewhere, COVID-19 has had the most impact on the Japanese life insurance industry during FY2020. Precautionary measures led to a significant decline in industrywide sales, especially in the earlier part of the year, for companies distributing through traditional sales networks, where face-to-face efforts are essential. On the other hand, the two operations focusing on direct distribution (LifeNet and Medicare Life, a subsidiary of Sumitomo group) saw substantial growth in year-on-year sales. Sales levels appear to have normalised in the latter part of the year, due to some relaxing of COVID-19 restrictions and the introduction of technology to facilitate sales. Profitability, as measured by new business margin, remained reasonably robust at most companies. If it persists, COVID-19 and the economic disruption triggered by the pandemic will almost certainly drive a major retrenchment or renovation/rationalisation of life insurance operations.

While low and negative interest rates continue to pose challenges for Japan’s economy, the nation’s life insurers have adjusted remarkably well to this ‘new normal’. With a repositioning towards protection, sale of foreign currency products, and cautious innovation in the retirement protection space, companies continue to add value with new sales and in-force portfolio management.

Fifteen companies based in Japan reported EV in FY2020, with most insurers disclosing positive EV growth for the fiscal year. A significant portion of this growth is attributable to positive economic variances, which had an impact on both VIF and ANW. A rise in JPY market yields led to an increase in VIF. Companies selling US dollar savings products also saw an increase in VIF due to increases in USD market yields. For those investing primarily in bonds to pursue tight asset liability management (ALM) strategies (for traditional fixed products), the higher interest rates led to a decrease in gains on matching bonds. However, this was more than offset at many companies by rising equity values, which drove an increase in ANW. It is interesting to note, as seen in the chart below, that companies with higher equity price sensitivity also tend to show relatively higher sensitivity to interest rates. This may be the result of less closely matched ALM strategies. In the coming years, in conjunction with the anticipated implementation of Japan’s economic value based solvency regime, companies adopting an intentional mismatch position may need to offer stakeholders more transparent explanations of their decision making process (in light of their risk appetite policy). The FSA is targeting introduction of the new solvency regime, compatible with Internal Capital Standards (ICS), for 2025.

FIGURE 59: SENSITIVITIES FOR INTEREST RATE AND EQUITY PER EV IN FY2029 AND FY2020



Managing interest rate risk is one of the most important goals of Japanese life insurance company management. The EV interest rate sensitivity results offer useful insights. However, one basic question emerges: how to interpret the impact of interest rate changes on the cost of non-hedgeable risks (CRNHR). In spite of the fact that an interest rate change impacts CRNHR and bottom line EV results—potentially significantly—only a few companies reflect this effect in their interest rate sensitivity. It is difficult to fully assess each company’s ALM approach, as those including the impact on CRNHR tend to show a larger interest rate sensitivity. Interest rate risk under ICS version 2.0 does not reflect the impact on the margin over current estimate (MOCE) either. Due to a significant computational burden, it is much easier to ignore the impact on CRNHR. However, depending on each company’s business characteristics, this impact may be too large to prudently ignore.

Over the past years, we have seen a growing heterogeneity of company strategies and this is reflected in reported EV. Several companies operate and report results of multiple operations (such as Dai-ichi, Sumitomo, and Mitsui Sumitomo). In order to evaluate the success of group strategy, consolidation is essential. For example, declining sales at Sumitomo Life are offset by the success achieved in their Medicare Life subsidiary.

The decline in sales at Japan Post Insurance can be attributed to regulatory guidance and a rethinking of sales processes. This very challenging period is expected to last for several years, as consumer trust is gradually regained. However, despite the significantly depressed VNB, Japan Post Insurance recorded an increase in EV, driven by a large volume of in-force business and favorable financial market conditions.

With the exception of Manulife, which reports on a TEV basis, all insurers in Japan use risk-free rates (based either on swap rates or Japan Government Bond (JGB)) to discount cash flows. The full set of economic assumptions disclosed to the market is set out in Figure 103 below.

A certain amount of caution must be exercised when evaluating Japanese company embedded values, especially when comparisons are made across Asia. In particular, it is important to keep in mind that Japanese companies typically report on a market consistent basis, either MCEV or MC-EEV. In addition, many companies manage large blocks of legacy policies with relatively high guarantees—in some cases, in excess of 5%. As a result of these two factors, many companies have a very small (or even negative) VIF compared to the size of the in-force block.<sup>66</sup> On a percentage basis, this VIF may be particularly sensitive to changes in interest environment. However, due to the market-consistent approach and ALM efforts, changes in VIF are often substantially offset by changes in adjusted net worth. As a result, overall EV, though sensitive to changing market yields, can be far less sensitive than the VIF and ANW components.

In an environment of low interest rates, seemingly subtle changes in yield curve can have a large impact on reported results. In order to understand and compare results, it is critical to look at differences in the underlying methodologies. Discount rate extrapolation or use of an Ultimate Forward Rate (UFR) can have a significant impact on reported EV values, especially because many companies employ a UFR as high as 3.8%, which is the rate specified under ICS version 2.0. Though its impact can be significant, very few companies disclose sensitivities in the level of UFR. While the majority employing a UFR use 3.8%, a handful of companies have tried to reflect their own views rather than referring to ICS. Dai-ichi Life reduced their UFR from 3.5% for FY2019 to 2.5% for FY2020 to reflect potential future economic growth and inflation targeting by Bank of Japan. Tokio Marine & Nichido Life used the 40-year spot rate, adjusted based on historical interest rate movements. This approach may increase the transparency of ultra-long-term investment decision-making, as hedging can help to manage the risk associated with the 40-year spot rate portion, while the ‘adjustment’ portion is non-hedgeable and could be addressed by a certain buffer in the same way as for many of the insurance risks.

Looking forward, uncertainties remain regarding COVID-19. The current crisis may hasten industry change in many areas, such as accelerating the adoption of new technologies. Questions from prior years remain: How long will low/negative interest rates persist? Will Japan ultimately face an uptick in inflation? How will changes in the dynamics of the global economy and likely evolution of global institutions affect Japanese life insurers? The anticipated adoption of Japan’s new solvency regime, in line with ICS, should further the harmonization of MCEV-oriented performance measurement with risk and capital management. Reporting with greater detail and transparency, coupled with effective corporate communications, should help Japanese insurers compete and achieve greater market recognition.

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<sup>66</sup> See, for example, Figure 55. Some companies include unrealized gains on assets backing liabilities in VIF or show an alternative presentation to do so.

Malaysia

FIGURE 60: REPORTED EV OF MALAYSIAN INSURANCE OPERATIONS, 2018-2020<sup>67 68</sup>

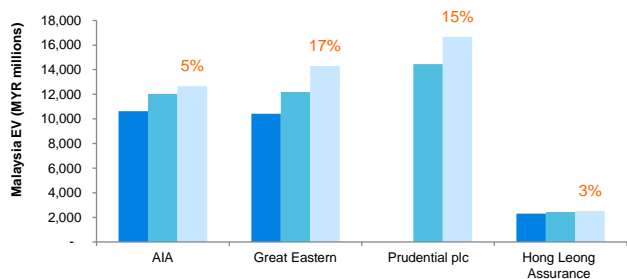


FIGURE 61: REPORTED ANW OF MALAYSIAN INSURANCE OPERATIONS, 2018-2020

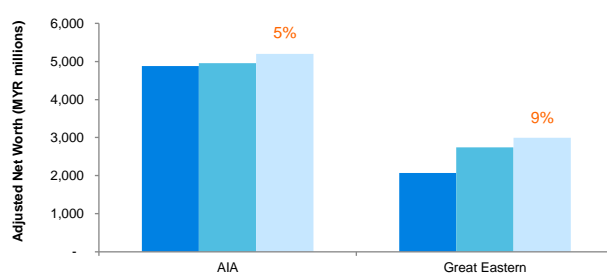


FIGURE 62: REPORTED VIF OF MALAYSIAN INSURANCE OPERATIONS, 2018-2020

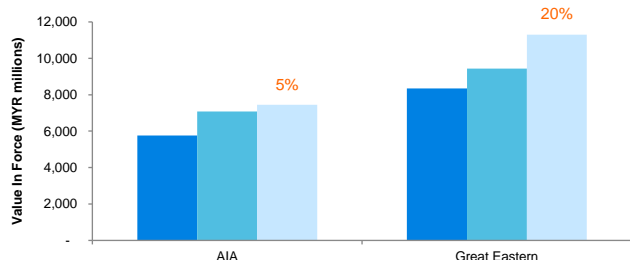


FIGURE 63: REPORTED VIF/ANW SPLIT OF MALAYSIAN INSURANCE OPERATIONS, 2020

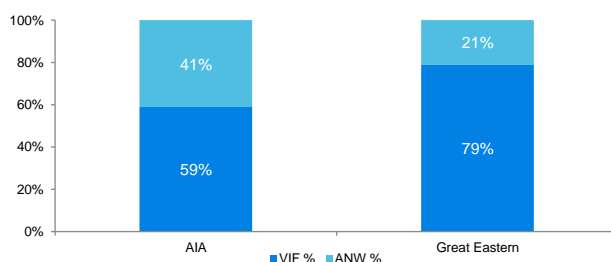


FIGURE 64: REPORTED VNB<sup>69</sup> OF MALAYSIAN INSURANCE OPERATIONS, 2018-2020<sup>70</sup>

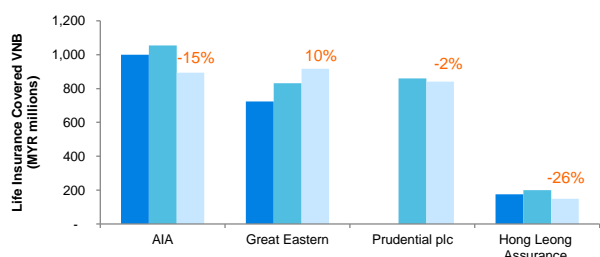


FIGURE 65: REPORTED APE<sup>71</sup> OF MALAYSIAN INSURANCE OPERATIONS, 2018-2020

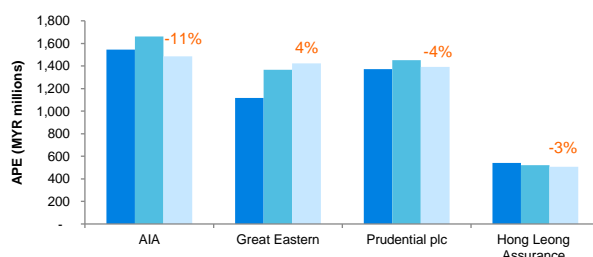
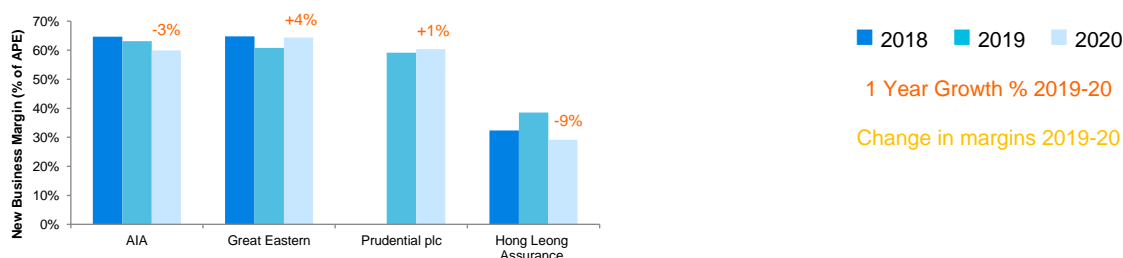


FIGURE 66: REPORTED NEW BUSINESS MARGIN OF MALAYSIAN INSURANCE OPERATIONS, 2018-2020



<sup>67</sup> Great Eastern Malaysia's EV (ANW plus VIF) figure includes Great Eastern Takaful Berhad (GETB).

<sup>68</sup> The FX rates used for conversion to local currency (for all charts) are listed in Appendix B.

<sup>69</sup> AIA's VNB and APE figures exclude pension business. For Hong Leong Assurance (HLA), APE has been calculated.

<sup>70</sup> Great Eastern Malaysia's VNB figure excludes GETB.

<sup>71</sup> The values have been determined based on APE reported in EV disclosure converted to local currency using the prevailing exchange rate applicable at each reporting date (2018, 2019, and 2020). These figures are different from the disclosed APE for AIA and Great Eastern Malaysia in local currency terms due to exchange rate differences as APE presented in EV disclosures have been converted based on average exchange rates rather than the prevailing exchange rate applicable at the reporting date.



Four companies reported 2020 EV results in Malaysia. Prudential plc has disclosed its EV and VNB for its Malaysia operation for the first time, including results as at 31 December 2019 and 2020.

For 2020, AIA retained its RDR at the level of 8.55% used in 2019, while Great Eastern decreased its RDR by 100 bps to 7.75% in 2020. Great Eastern did not disclose its investment return assumptions for 2020. AIA Malaysia's investment return assumptions remained unchanged from 2019, at 8.60% for equity and 4.00% for 10-year government bond yields. Prudential plc reduced its RDR from 5.80% (for new business) and 5.90% (for in-force business) in 2019, to 4.40% and 4.90% in 2020, respectively. Prudential Malaysia's 10-year bond yield assumption reduced from 3.30% in 2019 to 2.60% in 2020, while its equity return assumption dropped from 7.3% to 6.1%. The 10-year government bond yield in Malaysia as at 31 December 2020 was 2.68%.

In 2020, AIA recorded a fall of 11% in new business APE and 15% in VNB, attributing the decline in VNB to COVID-19 related restrictions in the first half of 2020. AIA's VNB recovered strongly in the second half of 2020, mainly driven by streamlining in-branch activity management processes within its bancassurance partner, Public Bank Berhad. AIA's new business margin remained strong at 60% in 2020, due to a positive product mix shift and a reduction in acquisition expense overruns.

Great Eastern demonstrated strong growth in 2020, with an increase in VNB of 10%; a resilient performance despite the challenges arising around COVID-19. The company cited an ability to quickly introduce a fully remote insurance sales advisory process and a new product strategy that focuses on providing health and critical illness protection solutions. In addition, its Takaful business continues to deliver strong growth, which is put down to its attractive product offerings and strong financial advisory network.

HLA recorded a significant decline of 26% in VNB for the financial year-ending June 2020, attributing the fall in VNB to assumption changes to reflect the lower interest rate environment. To improve the VNB in the future, HLA is focused on digital transformation and product re-positioning strategies.

In 2020, BNM brought forward some of the planned enhancements to improve the risk capture and overall consistency of the RBC Framework. Effective March 2020, the regulator implemented revisions to the stress testing parameters used for the computation of the interest rate risk capital charge under the RBC Framework, reducing the stress factor caps from 40% to 30%. The revised parameters are intended to better reflect prevailing market conditions. These changes resulted in an overall improvement to the insurer's solvency position.

In July 2020, the limits on commission and agency-related expenses for investment-linked Takaful products were removed (a year after the same regulation was applied to conventional life insurance investment-linked products). In January 2021, the BSC Framework was implemented for the bancassurance channel, together with increased commission limits for bancassurance partners.

In April 2021, BNM issued a guide to insurers titled 'Climate change and principle-based taxonomy', which outlines areas for consideration on the impact of climate change risk to insurers. Financial institutions, including insurers, are encouraged to consider the impact of climate change when looking at business strategies and other aspects of their operations.

In Malaysia, most insurance and Takaful companies have started implementing IFRS 17. Milliman published an article discussing the key issues and challenges around IFRS 17 implementation, including mutualisation, fulfilment cash flows and CSM for Takaful, discount rates, reinsurance and retakaful. The e-Alert is available [here](#).

## Singapore

FIGURE 67: REPORTED EV OF SINGAPOREAN INSURANCE OPERATIONS, 2018-2020<sup>72</sup>

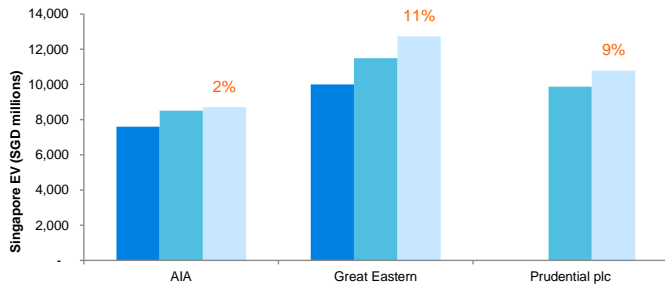


FIGURE 68: REPORTED ANW OF SINGAPOREAN INSURANCE OPERATIONS, 2018-2020<sup>73</sup>

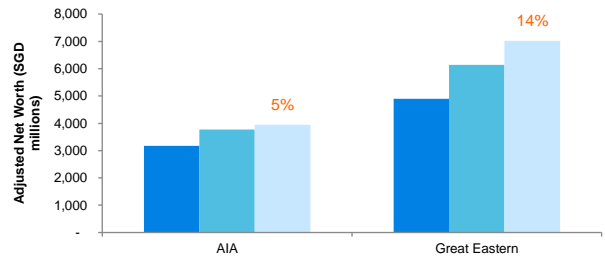


FIGURE 69: REPORTED VIF OF SINGAPOREAN INSURANCE OPERATIONS, 2018-2020

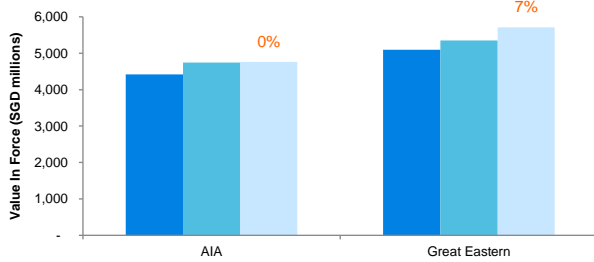


FIGURE 70: REPORTED VIF/ANW SPLIT OF SINGAPOREAN INSURANCE OPERATIONS, 2020

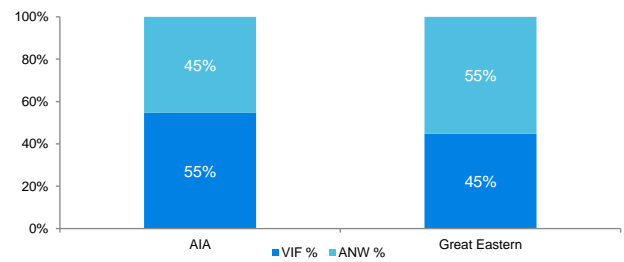


FIGURE 71: REPORTED VNB OF SINGAPOREAN INSURANCE OPERATIONS, 2018-2020

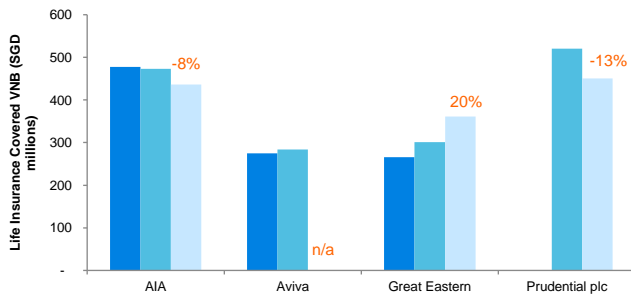


FIGURE 72: REPORTED APE<sup>74</sup> OF SINGAPOREAN INSURANCE OPERATIONS, 2018-2020

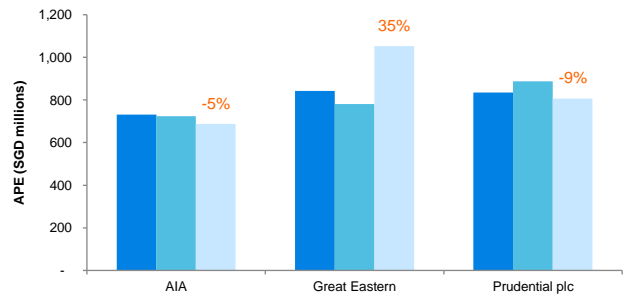
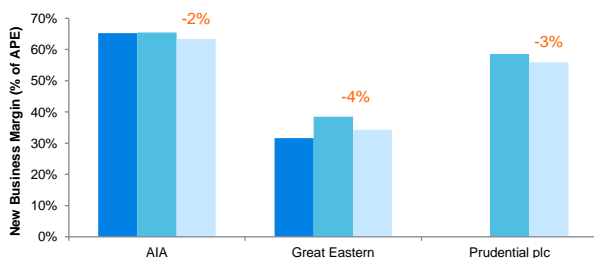


FIGURE 73: REPORTED NEW BUSINESS MARGIN OF SINGAPOREAN INSURANCE OPERATIONS, 2018-2020



■ 2018 ■ 2019 ■ 2020

1 Year Growth % 2019-20

Change in margins 2019-20

<sup>72</sup> Great Eastern Singapore's EV include its businesses in Brunei, Hong Kong, and Indonesia.

<sup>73</sup> Great Eastern Singapore's ANW include its businesses in Brunei, Hong Kong, and Indonesia.

<sup>74</sup> The values shown in Figure 71 have been determined based on APE reported in EV disclosure converted to local currency using the prevailing exchange rate applicable at each reporting date (2017, 2018, and 2019). These figures are different from the disclosed APE for Prudential and AIA Singapore in local currency terms due to exchange rate differences as APE presented in EV disclosures have been converted based on average exchange rates rather than the prevailing exchange rate applicable at the reporting date.

Both Great Eastern and AIA disclosed 2020 EV results for Singapore. For the first time, Prudential plc published EV and VNB results separately for Singapore, as at 31 December 2019 and 31 December 2020.

Great Eastern and AIA decreased their RDRs from 7.0% and 6.9% in 2019 to 6.0% and 6.6% in 2020, respectively. Prudential plc decreased the RDR used for in-force business for EEV reporting from 3.9% in 2019 to 2.9% in 2020, further increasing the gap against the rates adopted for TEV reporting by Great Eastern and AIA. Great Eastern did not disclose its investment return assumptions for 2020. AIA Singapore's investment return assumptions decreased from 2019 by 30 bps to 6.7% for equity and 2.2% for 10-year government bond yields. Prudential plc also decreased its equity return and 10-year government bond yield assumptions to 4.4% and 0.9% in 2020, respectively. The 10-year government bond yield in Singapore as at 31 December 2020 stood at 0.84%.

AIA Singapore recorded an 8% and 5% fall in its VNB and new business APE, respectively, in SGD terms,<sup>75</sup> driven largely by lower new business from its partnership distribution channels due to the impact of strict COVID-19 controls on bancassurance and offshore visitor sales. The VNB margin for AIA remained strong at 63.4%, reflecting an improvement in the product mix and a reduction in its acquisition expense overruns as new business volumes increased in the second half of the year.

Great Eastern Singapore reported a 20% increase in VNB, citing the strong performance of its financial advisor network and successful new product launches (including comprehensive health-related protection, savings and investment-linked plans). Prudential plc reported a fall of 9% in new business APE in SGD terms and a reduction in VNB of 13%, due to a combination of COVID-19 restrictions impacting sales in the first half of the year and generally lower interest rates.

The MAS issued a revised Notice on Management of Participating Life Business (MAS Notice 320) which took effect from 1 January 2021. The main revisions relate to the allocation of charges and expenses to a participating fund and include a list of non-chargeable expenses. Life insurers must ensure that any charges or expenses allocated to a participating fund are fair and reasonable.

In February 2021, the MAS also issued consultation papers on proposed revisions to ERM (MAS Notices 126), Investment (MAS Notices 125) and Public Disclosure (MAS Notices 124) requirements for insurers. These revisions aim to strengthen insurers' risk management practices and mitigate the systemic risk in the insurance sector.

It is also worth noting that effective 1 July 2021, the life insurance industry will lower the caps of illustrative investment returns used in policy illustrations for Singapore-dollar-denominated participating policies. The upper illustration rate cap will be lowered from the current rate of 4.75% to 4.25%, while the lower illustration rate will be capped at 3.00%, from the current 3.25%. This decision was made in response to the sustained low interest rate environment.

<sup>75</sup> The values shown in Figure 72 for 2020 APE growth for Prudential and AIA Singapore, in SGD terms, are different from the reported disclosures. Please refer to footnote 73 for further explanation.

South Korea

FIGURE 74: REPORTED EV OF SOUTH KOREAN INSURANCE OPERATIONS, 2018-2020<sup>76</sup>

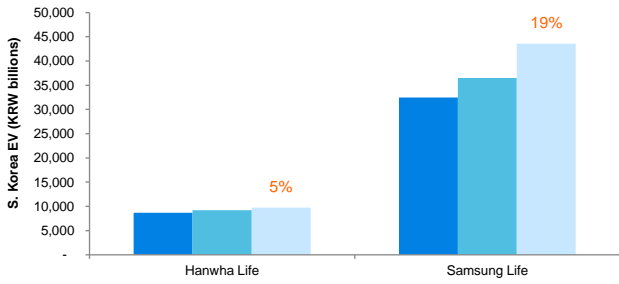


FIGURE 75: REPORTED ANW OF SOUTH KOREAN INSURANCE OPERATIONS, 2018-2020

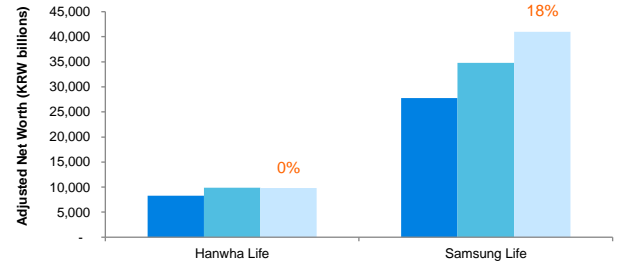


FIGURE 76: REPORTED VIF OF SOUTH KOREAN INSURANCE OPERATIONS, 2018-2020

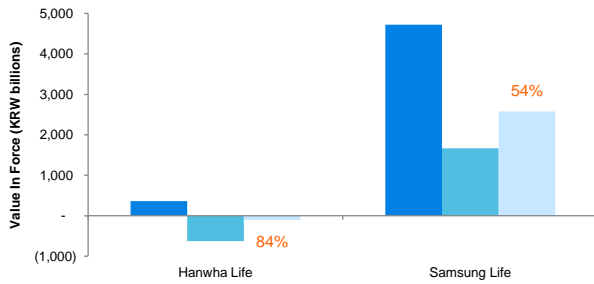


FIGURE 77: REPORTED VIF/ANW SPLIT OF SOUTH KOREAN INSURANCE OPERATIONS, 2020

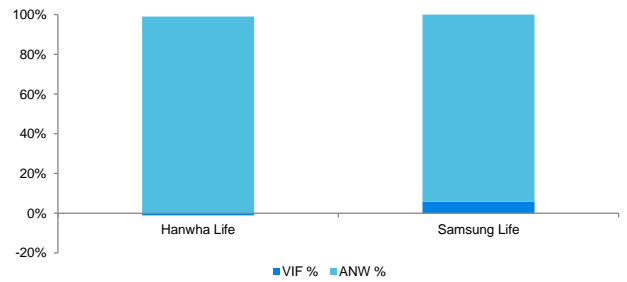


FIGURE 78: REPORTED VNB OF SOUTH KOREAN INSURANCE OPERATIONS, 2018-2020

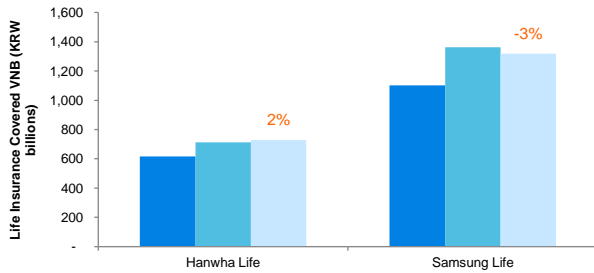


FIGURE 79: REPORTED APE OF SOUTH KOREAN INSURANCE OPERATIONS, 2018-2020

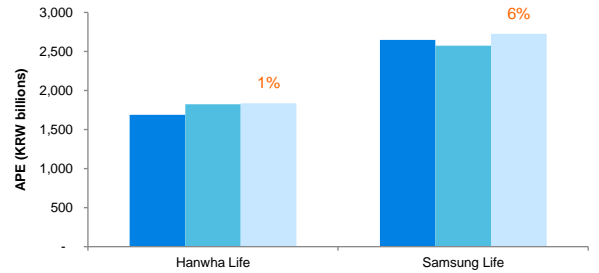
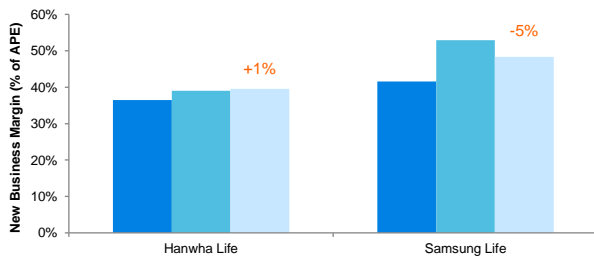


FIGURE 80: REPORTED NEW BUSINESS MARGIN OF SOUTH KOREAN INSURANCE OPERATIONS, 2018-2020



■ 2018 ■ 2019 ■ 2020  
 1 Year Growth % 2019-20  
 Change in margins 2019-20

<sup>76</sup> Orange Life and Samsung Fire & Marine Life have stopped disclosing their EV results. Hence, the results are not included in the analysis.

The RDR and investment return assumptions remained unchanged for AIA South Korea, Hanwha Life and Samsung Life. The 10-year government bond yield in South Korea, as at 31 December 2020 was 1.722%, up from 1.672% as at 31 December 2019.

Hanwha Life recorded an increase of KRW 522 billion from negative KRW 625 billion in 2019 to a negative KRW 103 billion in 2020. The company reported an increase of 2% in VNB, driven by strong sales of protection products.

Samsung Life recorded a 54% rise in VIF in 2020, attributing the increase to new business and improvements in actuarial assumptions, although no further details are provided. Samsung Life's VNB decreased by 3% in 2020 and new business margins decreased from 52.9% to 48.3%, primarily resulting from changes in the company's new business product mix.

In Korea, the values of in-force and new business are presented on a TEV basis, including the cost of minimum benefit guarantees on non-hedged blocks of variable annuity and life business which cover a variety of guaranteed death and living benefits. Guaranteed Minimum Benefit (GMxB) costs on non-hedged block of variable products are usually developed based on a stochastic analysis under real world scenarios, typically 1,000 scenarios, and expressed as a percentage of GMxB fees.

In February 2021, the Financial Services Commission (FSC) proposed revisions to the Enforcement Decree of the Insurance Business Act, setting requirements for the establishing insurance companies specializing in small-amount, short-term policies and introduced measures to improve the soundness of the insurance industry.

From July 2021, liability duration on long-term products such as whole life and long-term protection business would be increased to widen the duration mismatch between assets and liabilities which would effectively increase the interest rate risk amount leading to higher required capital.

To boost consumer confidence and promote innovation in the insurance industry, the regulator plans to encourage the use of digital, AI-based and contactless insurance sales mechanisms. The plan will focus on removing some of the inefficiencies observed in the current insurance sales practices and will be implemented in phases during 2021.

Taiwan

FIGURE 81: REPORTED EV OF TAIWANESE INSURANCE OPERATIONS, 2018-2020

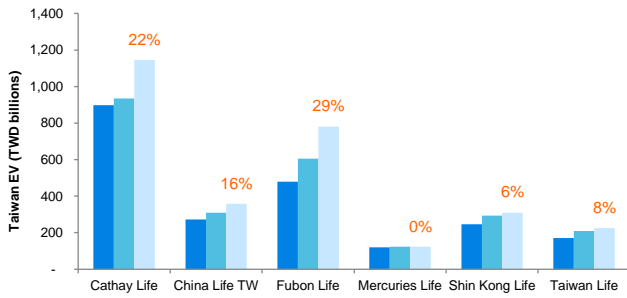


FIGURE 82: REPORTED ANW OF TAIWANESE INSURANCE OPERATIONS, 2018-2020

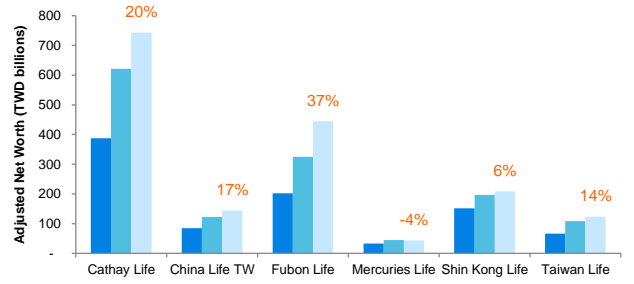


FIGURE 83: REPORTED VIF OF TAIWANESE INSURANCE OPERATIONS, 2018-2020

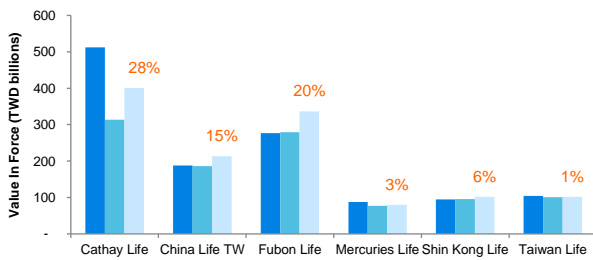


FIGURE 84: REPORTED VIF/ANW SPLIT OF TAIWANESE INSURANCE OPERATIONS, 2020

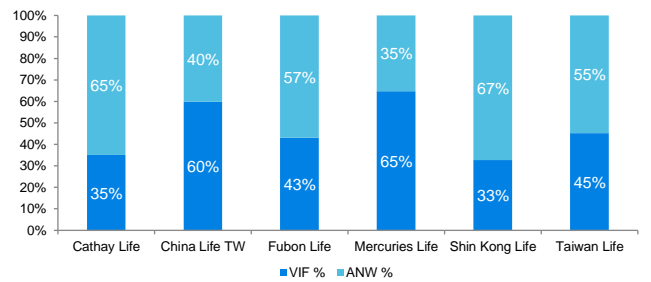


FIGURE 85: REPORTED VNB OF TAIWANESE INSURANCE OPERATIONS, 2018-2020<sup>77</sup>

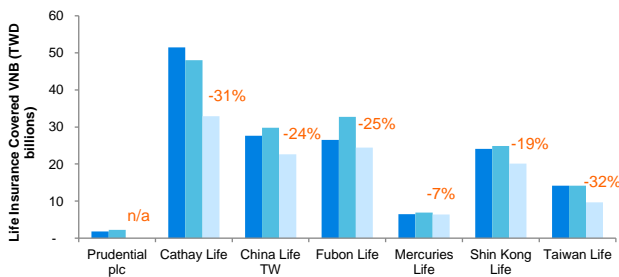


FIGURE 86: REPORTED APE<sup>78</sup> OF TAIWANESE INSURANCE OPERATIONS, 2018-2020

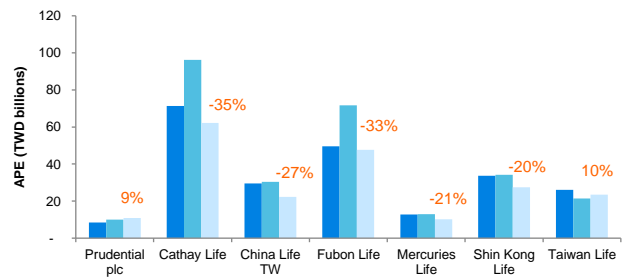
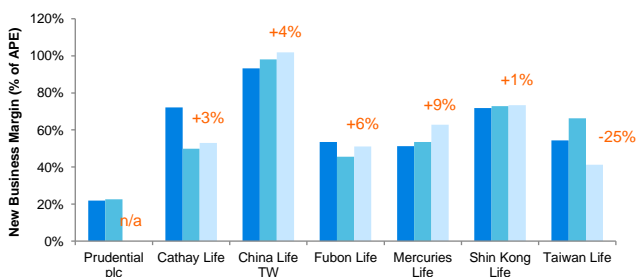


FIGURE 87: REPORTED NEW BUSINESS MARGIN OF TAIWANESE INSURANCE OPERATIONS, 2018-2020



■ 2018 ■ 2019 ■ 2020  
 1 Year Growth % 2019-20  
 Change in margins 2019-20

<sup>77</sup> Prudential Taiwan has not disclosed VNB results for 2020.

<sup>78</sup> For Cathay Life, China Life TW, Fubon Life, Shin Kong Life and Taiwan Life, the figures disclosed are based on first-year premium equivalent (FYPE) instead of APE. FYPE = 10% single & flexible premium + 20% x 2-year premium payment term + ... + 50% 5-year premium payment term + 100% 6-year or more premium payment term.

The total EV of those Taiwanese insurers reporting results increased in 2020 (Mercuries Life's EV increased slightly by 0.3%). Fubon Life reported the highest increase of 29% in EV, followed by Cathay Life reporting an increase of 22% in 2020. All insurers reported an increase in ANW except Mercuries Life, which reported a decline of 4% in ANW in 2020. Cathay Life recorded the highest growth of 28% in VIF in 2020, driven by new business contribution, return from existing business and increase in investment yield assumptions, partially offset by changes in foreign exchange rates.

All insurers reported significant declines in VNB in 2020, with Taiwan Life posting the highest fall of 32%, followed by Cathay Life, Fubon Life and China Life TW recording falls of 31%, 25%, and 24%, respectively. The lower VNB results were mainly a result of lower sales due to the COVID-19 pandemic.

Prudential plc decreased its RDR assumption for in-force and new business from 3.00% and 3.40% in 2019 to 2.50% and 3.00% in 2020, respectively. Its 10-year government bond yield assumption was also reduced by 40 bps to 0.30% in 2020. The domestic life insurers typically assumed investment returns that start from around 3.00% to 4.40%, increasing to long-term rates of around 4.03% to 5.50%, with RDR of around 9.50%. The 10-year government bond yield stood at approximately 0.30% at the end of 2020, down from 0.65% at the end of 2019. The full set of economic assumptions disclosed in the market is set out in Figure 103 below.

Taiwan's insurance regulator, Financial Supervisory Commission (FSC), announced a reduction in reserving interest rates for all policies denominated in NTD and USD by 25 bps and 50 bps respectively effective from the second half of 2020. The purpose behind this change is to keep the reserve interest rates in line with the declining market rates.

In January 2021, the FSC amended 'Directions for Insurance Companies to Engage in Microinsurance Business' to expand the eligibility criteria for microinsurance products to include mid- or low-income senior citizens receiving a living allowance. The amendments were made effective immediately and aim to further promote microinsurance in the market.

In view of rising demand for foreign-currency-denominated insurance policies, the FSC announced the following main amendments to 'Regulations Governing Foreign Investments by Insurance Companies':

- In the calculation of exclusions from the calculation of the limit on the total amount of foreign investment, the current percentage of various reserves for non-investment-linked life insurance business is increased from 35% to 40%.
- Islamic bonds will be listed as a deduction of Excluded Foreign Investment Amount.

In April 2021, the FSC amended 'Regulations Governing Insurance Brokers' and 'Regulations Governing Insurance Agents' to strengthen supervision of insurance brokers and agencies, better protect the interests of customers using digital insurance policies and strengthen reinsurance-related supervision and market discipline.

On 31 May 2021, the FSC approved an application by Taishin Financial Holding Co., Ltd. (Taishin) to acquire Prudential Life Insurance Company of Taiwan Inc. (Prudential Taiwan). The deal will close after Taishin fulfills the commitments made in the acquisition proposal submitted to the FSC and the regulator subsequently issues a letter of approval.

## Thailand

FIGURE 88: REPORTED EV<sup>79</sup> OF THAILAND INSURANCE OPERATIONS, 2018-2020<sup>80</sup>

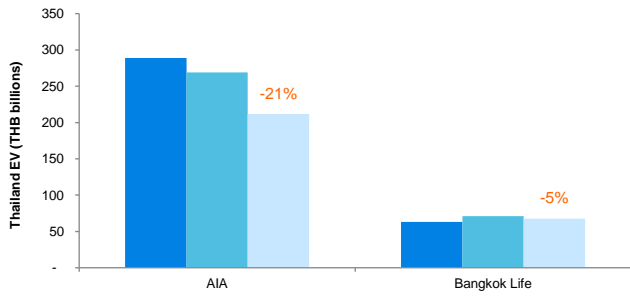


FIGURE 89: REPORTED ANW OF THAILAND INSURANCE OPERATIONS, 2018-2020

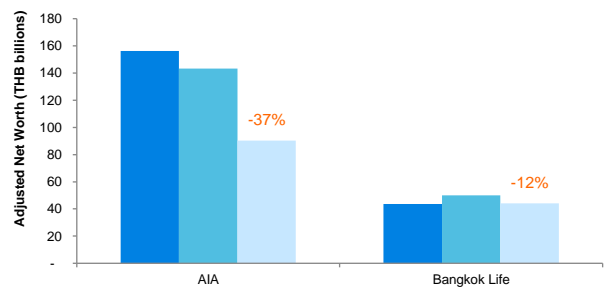


FIGURE 90: REPORTED VIF OF THAILAND INSURANCE OPERATIONS, 2018-2020

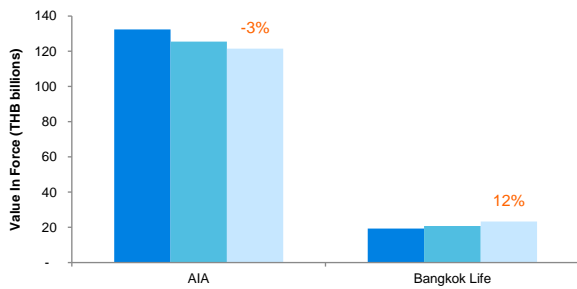


FIGURE 91: REPORTED VIF/ANW SPLIT OF THAILAND INSURANCE OPERATIONS, 2020

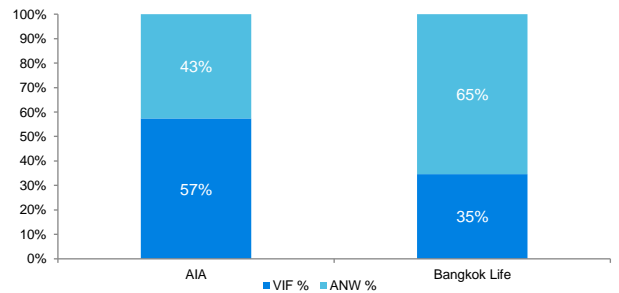


FIGURE 92: REPORTED VNB OF THAILAND INSURANCE OPERATIONS, 2018-2020

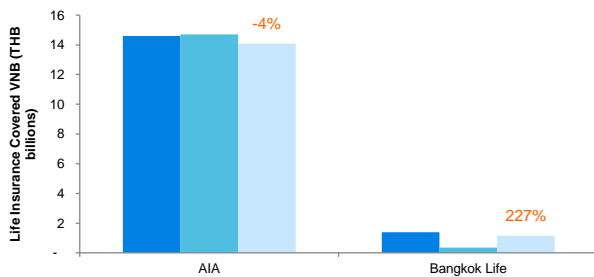


FIGURE 93: REPORTED APE OF THAILAND INSURANCE OPERATIONS, 2018-2020<sup>81</sup>

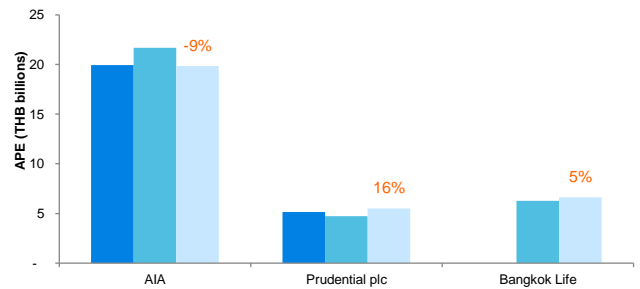
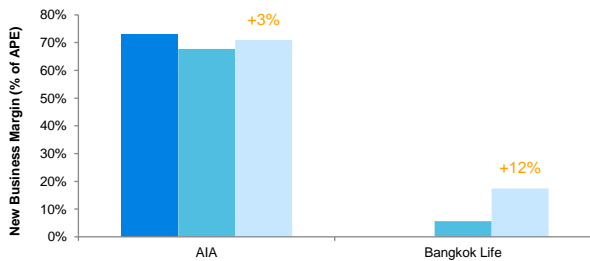


FIGURE 94: REPORTED NEW BUSINESS MARGIN OF THAILAND INSURANCE OPERATIONS, 2018-2020



■ 2018 ■ 2019 ■ 2020  
 1 Year Growth % 2019-20  
 Change in margins 2019-20

<sup>79</sup> EV, VNB and APE throughout this section have been converted to local currency using the prevailing exchange rates applicable at each reporting date (2018, 2019 and 2020).

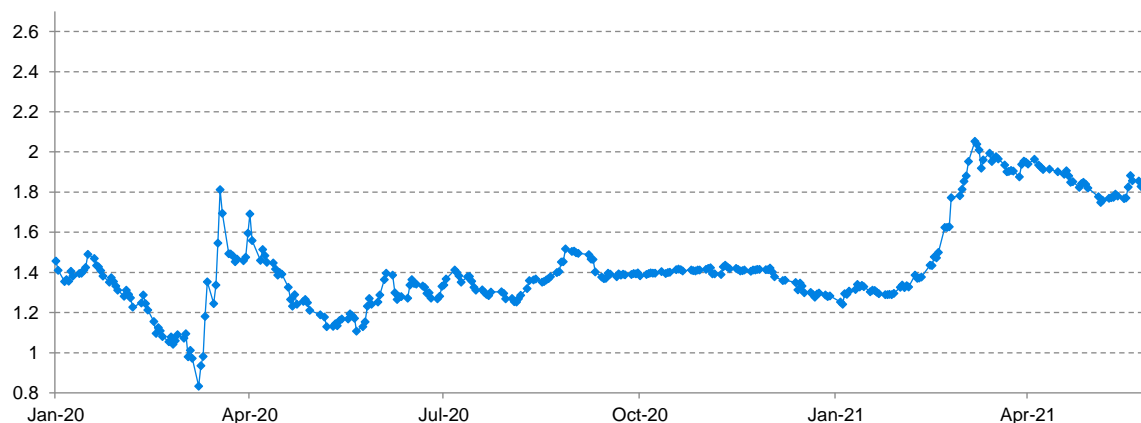
<sup>80</sup> The FX rates used for conversion to local currency (for all charts) are listed in Appendix B.

<sup>81</sup> Prudential plc only discloses APE for its Thailand operations. APE for Bangkok Life has been calculated using reported VNB margins.



Medium and longer-dated Thai government bond yields remained depressed in 2020. The 10-year Thai government bond yield was very volatile in the first quarter of 2020, falling from 1.46% to below 1% at one point, then rebounding to 1.48% by the end of March 2020. For the rest of the year, the 10-year Thai government bond yield remained at around the 1.3% level. The low interest rate environment has led to increased gross premium valuation reserves and higher interest rate risk charges for many insurers. In 1H2021, the directional movement in government bond yields has been upwards, with sharp increases in yields in the first quarter of 2021 in particular before remaining largely stable in the second quarter of 2021.

FIGURE 94: HISTORICAL 10-YEAR THAILAND GOVERNMENT BOND YIELDS



Source: the Thai Bond Market Association

Only AIA and Bangkok Life have disclosed their EV and VNB results in recent years in Thailand. AIA Thailand's 2020 year-end assumptions for long-term equity returns and 10-year government bond yields remain unchanged from 2019 at 7.7% and 2.7%, respectively, while the RDR reduced from 7.9% in 2019 to 7.8% in 2020. AIA Thailand's EV fell by 21% in 2020, which has reflected the impact of higher statutory reserves under the prolonged low interest rate environment and falls in the Thai stock market during 2020. The company saw new business APE and VNB drop by 9% and 4%, respectively in 2020, attributing these declines to COVID-19 related restrictions in the first half of 2020. VNB recovered strongly in the second half of 2020 after movement restrictions eased, the number of new agents recruited increased, the roll-out of its Financial Adviser program continued, and positive VNB was contributed from its bancassurance partner, Bangkok Bank. AIA Thailand's new business margin in 2020 remained very strong, increasing to 71% from 68% in 2019. This was reportedly driven by a shift in product mix towards more long-term protection products and medical riders, resulting from increased customer awareness and demand for such cover amid the COVID-19 pandemic.

The EV of Bangkok Life decreased by 5% in 2020. One reason for the drop in EV was a reduction in the investment return assumption, which was reduced by 50 bps from 3.5% in 2019 to 3.0% in 2020, while the RDR remain unchanged. In 2020, Bangkok Life reported a significant growth of 227% in VNB from THB 352 million to THB 1,151 million. VNB margin increased from 5.6% in 2019 to 17.4% in 2020. The company attributed the increase in VNB margin to portfolio improvement, with changes in product mix, the introduction of participating products, and product re-pricing.

The 2020 EV results for Prudential plc are not disclosed (they are part of an aggregated classification), but there is some information provided on the underlying EV assumptions and new business APE figures. Prudential Thailand reduced its RDR and long-term 10-year government bond yield assumptions respectively from 9.2% and 1.5% in 2019 to 8.5% and 1.3% in 2020.

Industry life insurance total unweighted premium growth has been slowing in general since 2015, with a negative growth rate of 1.8% in 2020. The total unweighted new business sales and weighted new business sales (new business APE, taken from the Thai Life Assurance Association (TLAA) statistics) dropped by 11.3% and 7.2%, respectively, from 2019, which is due in part to negative impacts of COVID-19.

In September 2020, the OIC announced a revision of the RBC rules in an attempt to improve the industry's declining CAR. The revised calculations have decreased the diversification correlation factor between assets and insurance, and reduced the equity risk charge where there is equity investment hedging.

To widen investment opportunities for insurers in Thailand, the OIC approved three measures in February 2021:

- Introducing a new risk charge calculation method for foreign equity funds that allows insurance companies to calculate the risk charge using 25% of the net asset value (to be implemented temporarily for a year)
- Permitting insurers to make reference to credit ratings from local agencies, in addition to international agencies, when investing in bonds issued in foreign countries by Thai issuers
- Allowing insurance companies to invest in non-investment grade bonds and mutual bond funds

Vietnam

FIGURE 95: REPORTED EV OF VIETNAM INSURANCE OPERATIONS, 2018-2020

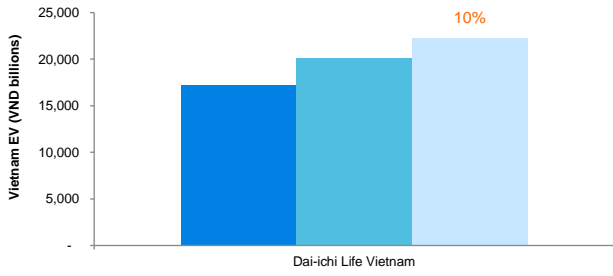


FIGURE 96: REPORTED ANW OF VIETNAM INSURANCE OPERATIONS, 2018-2020

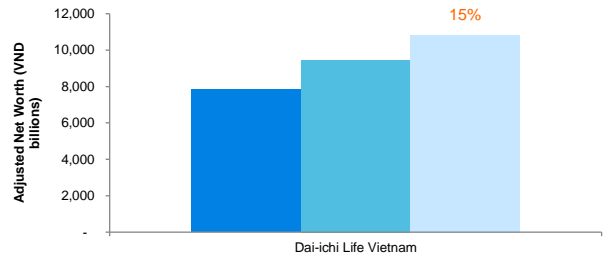


FIGURE 97: REPORTED VIF OF VIETNAM INSURANCE OPERATIONS, 2018-2020

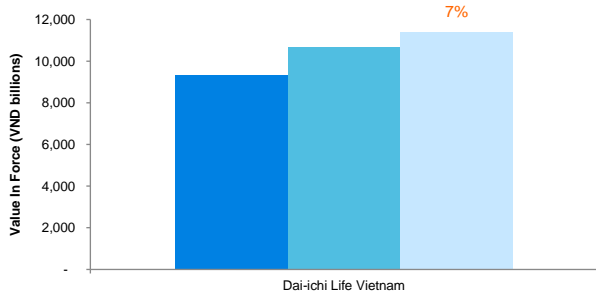


FIGURE 98: REPORTED VIF/ANW SPLIT OF VIETNAM INSURANCE OPERATIONS, 2020

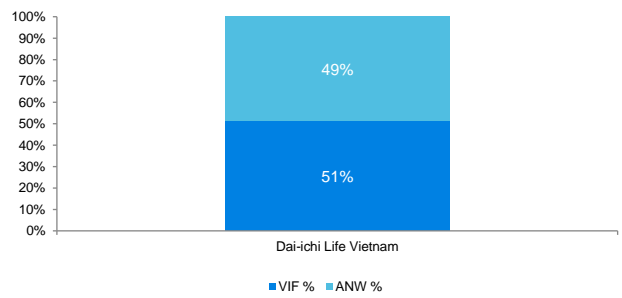


FIGURE 99: REPORTED VNB OF VIETNAM INSURANCE OPERATIONS, 2018-2020

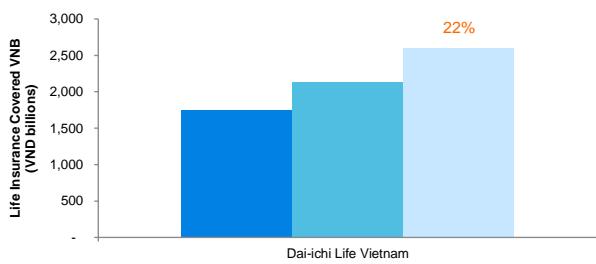


FIGURE 100: REPORTED PVNBP OF VIETNAM INSURANCE OPERATIONS, 2018-2020

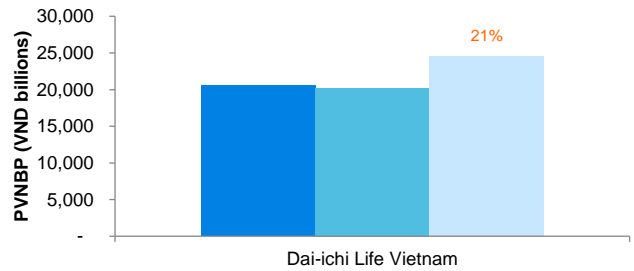
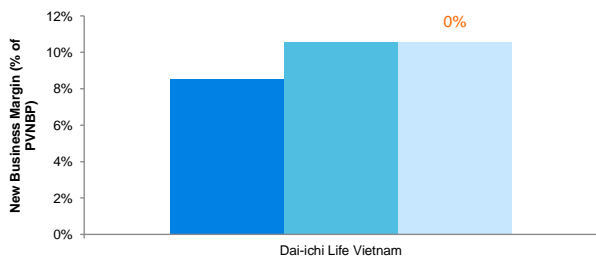


FIGURE 101: REPORTED NEW BUSINESS MARGIN<sup>82</sup> OF VIETNAM INSURANCE OPERATIONS, 2018-2020



■ 2018 ■ 2019 ■ 2020  
 1 Year Growth % 2019-20  
 Change in margins 2019-20

<sup>82</sup> Dai-ichi Life Vietnam discloses new business margins on a PVNBP basis rather than on an APE basis.

Dai-ichi Life remains the only company that discloses EV results for Vietnam, although it uses a TEV methodology for Vietnam as opposed to the EEV methodology adopted at group level in Japan. Dai-ichi Life's EV increased by 10% in 2020 on a constant currency basis.<sup>83</sup>

Dai-ichi Life Vietnam reduced its RDR from 10.0% in 2019 to 9.0% in 2020. It does not disclose its investment return assumptions. The 2020 EV results for AIA and Prudential plc are not disclosed (they are part of an aggregated classification), but there is some information provided on the underlying EV assumptions for both the companies. AIA reduced its RDR and long-term 10-year government bond yield assumption by 100 bps in 2020 to 9.8% and 4.0%, respectively. Prudential Vietnam reduced its RDR for in-force business and new business, respectively, from 5.5% and 5.3% in 2019 to 4.5% and 4.3% in 2020, and decreased its long-term 10-year government bond yield assumption from 3.4% in 2019 to 2.6% in 2020. The reductions in long-term government bond yield assumptions are consistent with continued downward pressure on the yield curve in Vietnam during 2020 and 1H2021. The local 10-year government bond yield was 2.45% at December 31, 2020.<sup>84</sup>

In 2020, Prudential Vietnam reported an increase of 9% in new business APE in USD terms, attributing the increase to an enhanced and balanced distribution strategy and increasing sales of protection products.

The low interest environment continues to present significant challenges for insurers in managing non-participating and participating portfolios with more material financial guarantees. Some insurers have deviated from strategic asset allocations to invest more in higher yielding short-term time deposits in order to achieve higher returns compared to longer-term government bonds. However, this has exacerbated asset-liability duration gap issues. Several players have also increased their holdings of corporate bonds. There has been a shift from participating business to universal life business for several insurers, including the bancassurance- focused companies. Unit-linked business has also grown recently for some companies but still remains a small proportion of total sales.

In general, the Vietnam life market showed strong premium growth in 2020, with total GWP increasing by 22.2% to VND 130.6 trillion and new business unweighted premium growing by 21.8% to VND 41.9 trillion.

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<sup>83</sup> To provide comparability and eliminate FX effects, results for all years for all MNCs/markets have been converted to local currency using the prevailing FX rate as at the 2020 reporting date.

<sup>84</sup> Source for 10-year government bond yield - <https://www.investing.com/rates-bonds/vietnam-10-year-bond-yield-historical-data>.

## Methodology hot topics

Within Asia, there are two groups of companies publicly reporting EV: 1) those reporting TEV, and 2) the remaining reporting EEV, IEV, or MCEV. The latter tend to be subsidiaries or joint ventures of European and Japanese insurers.

For all types of EV reporting, common hot topics in Asia include:

- The selection and construction of the appropriate RDR
- The selection of appropriate investment rate assumptions
- Allowance for the impact of cost/expense overruns
- The question of how to explicitly or implicitly allow for the cost of capital
- Calculation of TVOG

### CONSTRUCTION OF RDR

The selection of RDR is one of the most important considerations for EV calculations. Broadly, there are three main methodologies behind discount rate derivation:

1. A single discount rate applied to all periods, calculated using a benchmark risk-free rate plus risk margin or adjusting an assumed investment return.
2. A 'top-down' approach, whereby a discount rate or curve is constructed by adjusting the expected portfolio returns by considering the risks that the company is exposed to, and applying this discount rate or curve to every cash flow.
3. A 'bottom-up' approach, whereby a risk-free rate plus risk margin curve is constructed for each cash flow or group of cash flows, with due consideration to the risk exposure of each cash flow. Where cash flows have an equivalent liquid and listed asset, the discount rate will be set to the implied yield of the asset. In IEV and MCEV, the risk margin typically only includes the liquidity premium.

These three methods roughly correspond to the TEV, EEV and IEV/MCEV approaches, although the majority of companies that report using EEV also now adopt a 'bottom-up' approach.

In addition to the derivation methodology, there are three further major considerations:

1. The underlying basis for the RDR
2. The inclusion of any illiquidity premium
3. The interpolation and extrapolation method used to construct a discount curve (typically applicable only to EEV and MCEV companies)

The three considerations described above generally only apply to firms using EEV, IEV and MCEV reporting. For TEV-reporting firms, the generally accepted approach is to use an underlying risk-free rate (such as a long-dated government bond), and apply an additional risk margin; a popular subset of this approach includes the capital asset pricing model (CAPM). The main consideration for TEV firms is the calculation of the risk margin, meant to encompass factors which are explicitly accounted for in EEV, IEV and MCEV; that is, the cost of capital and TVOG.

Figure 102 summarises the RDR and investment return assumptions by the MNCs (both foreign and Asian MNCs). Figure 103 summarises the assumptions by market.

FIGURE 102: RDR AND INVESTMENT RETURN ASSUMPTIONS OF MNCs<sup>85</sup>

COMPANY	EV PRINCIPLE	RDR	INVESTMENT RETURNS
<b>AIA</b>	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: 7.25% Thailand: 7.80 % 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% South 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%
<b>ALLIANZ</b>	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.
<b>AVIVA</b>	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.
<b>AXA</b>	EEV	Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment. The volatility adjustment applied for 2020 was: JPY: 9 bps, HKD: 5 bps.	Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment. The volatility adjustment applied for 2020 was: JPY: 9 bps, HKD: 5 bps.
<b>GENERALI</b>	MCEV	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.
<b>GREAT EASTERN</b>	TEV	Singapore: 6.00% Malaysia: 7.75% Indonesia: 12.5%	Not disclosed.
<b>MANULIFE</b>	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%
<b>PRUDENTIAL PLC</b>	EEV	China: 7.70% (NB), 7.70% (IF) Hong Kong: 2.00% (NB), 2.10% (IF) Indonesia: 8.90% (NB), 10.00% (IF) Malaysia: 4.40% (NB), 4.90% (IF) Philippines: 10.30% (NB), 10.30% (IF) Singapore: 2.30% (NB), 2.90% (IF) Taiwan: 3.00% (NB), 2.50% (IF) Thailand: 8.50% (NB), 8.50% (IF) Vietnam: 4.30% (NB), 4.50% (IF)	China: Gov't Bonds 3.20%, Equities 7.20% Hong Kong: Gov't Bonds 0.90%, Equities 4.40% Indonesia: Gov't Bonds 6.50%, Equities 10.80% Malaysia: Gov't Bonds 2.60%, Equities 6.10% Philippines: Gov't Bonds 3.10%, Equities 7.30% Singapore: Gov't Bonds 0.9%, Equities 4.40% Taiwan: Gov't Bonds 0.30%, Equities 4.30% Thailand: Gov't Bonds 1.30%, Equities 5.50% Vietnam: Gov't Bonds 2.60%, Equities 6.80%
<b>ZURICH</b>	MCEV	Risk-free interest rate curves, allowing for volatility adjustment.	Risk-free interest rate curves, allowing for volatility adjustment.

There is a clear divide between the MNCs and domestic insurers when it comes to disclosing long-term investment return assumptions. MNCs typically disclose investment return assumptions on an asset class basis. In contrast, domestic insurers disclose mostly on a portfolio basis, without much information on the assumed asset mix (although this can often be inferred from their regulatory returns).

Another interesting comparison can be made between AIA and Prudential plc. Despite their contrasting methodologies (TEV versus EEV), their government bond yield assumptions are quite similar for some markets (e.g., Indonesia, China, and Taiwan) but diverge sharply for other markets (e.g., Malaysia, Vietnam, Thailand, Hong Kong and Singapore).

<sup>85</sup> Entries shaded in blue indicate that the 2020 RDR and investment assumptions have not yet been disclosed, and that the assessment has been based on 2019 disclosures instead.

FIGURE 103: RDR AND INVESTMENT ASSUMPTIONS OF INSURERS BY MARKET<sup>86 87</sup>

MARKET	COMPANY	EV PRINCIPLE	RDR	INVESTMENT RETURNS
<b>China</b>	<b>Chinese 10-year government bond yield at 31 December 2020: 3.203%</b>			
	AIA	TEV	9.75%	China: Equities 9.30%, 10Y Gov't Bonds 3.70%
	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.
	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	11.00%	Assumed to be 4.80% with an increase of 0.05% annually up to 5.00% and thereafter remain unchanged
	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 plc	EEV	7.70% (NB), 7.70% (IF)	Gov't Bonds 3.20%, Equities 7.20%
<b>Hong Kong</b>	<b>Hong Kong 10-year government bond yield at 31 December 2020: 0.779%</b>			
	AIA	TEV	7.00%	Equities 7.00%, 10Y Gov't Bonds 2.20%
	AXA	EEV	Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment. The volatility adjustment applied for 2020 was: HKD: 5 bps.	Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment. The volatility adjustment applied for 2020 was: HKD: 5 bps.
	Manulife	TEV	8.00%	Equity 9.50%, 10Y Gov't Bonds (immediate to ultimate reinvestment rate): 0.74% to 4.10%
	Prudential plc	EEV	2.00% (NB), 2.10% (IF)	Equities 4.40%, Gov't Bonds 0.90%
<b>India</b>	<b>Indian 10-year government bond yield at 31 March 2021: 6.177%</b>			
	Bajaj Allianz Life	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 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 Life	IEV	Risk-free yield curve.	Risk-free yield curve.

<sup>86</sup> Entries shaded in blue indicate that the 2020 RDR and investment assumptions have not yet been disclosed, and that the assessment has been based on 2019 disclosures instead.

<sup>87</sup> Source for the 10-year government bond yields for all markets is <https://www.investing.com>, and yields may differ from those shown in EV disclosures of specific companies.

MARKET	COMPANY	EV PRINCIPLE	RDR	INVESTMENT RETURNS
	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.
	Reliance Nippon Life	TEV	Not disclosed.	Not disclosed.
	SBI Life	IEV	Risk-free yield curve.	Risk-free yield curve.
<b>Japan</b>	<b>Japanese 10-year government bond yield at 31 March 2021: 0.095%</b>			
	AXA	MCEEV	Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment.  The volatility adjustment applied for 2020 was: JPY: 9.bps	Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment.  The volatility adjustment applied for 2020 was: JPY: 9.bps
	Manulife	TEV	5.75%	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 that 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 that 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 UFRs).	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	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	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 Himawari Life	MCEV	Risk-free rate (Based on JGB and UFRs).	Risk-free interest rate curves.



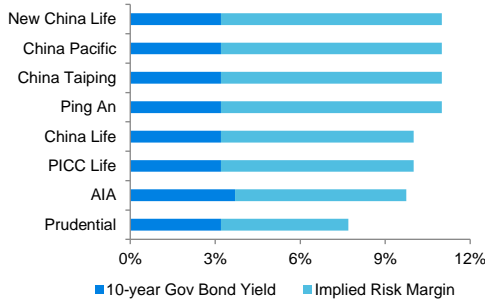
MARKET	COMPANY	EV PRINCIPLE	RDR	INVESTMENT RETURNS
	Sony Life	MCEV	Risk-free rate (based on JGB and U.S. Treasury yields and UFRs).	Risk-free interest rate curves.
	Sumitomo Life	MC-EEV	Risk-free rate (Based on Japanese, U.S., and Australian Government Bond and UFRs).	Risk-free interest rate curves.
	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.
	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 31 December 2020: 5.942%</b>			
	AIA	TEV	13.00%	Equities 12.00%, 10Y Gov't Bonds 7.50%
	Great Eastern	TEV	12.50%	Not disclosed
	Prudential plc	EEV	NB: 8.9%, IF: 10.0%	Equities 10.8%, 10Y Gov't Bonds 6.5%
<b>Malaysia</b>	<b>Malaysian 10-year government bond yield at 31 December 2020: 2.679%</b>			
	AIA	TEV	8.55%	Equities 8.60%, 10Y Gov't Bonds 4.00%
	Great Eastern	TEV	7.75%	Not disclosed
	Hong Leong Assurance	TEV	Not disclosed	Not disclosed
	Prudential plc	EEV	4.4% (NB), 4.90% (IF)	Equities 6.10%, Gov't Bonds 2.6%
<b>Philippines</b>	<b>Philippines 10-year government bond yield at 31 December 2020: 2.992%</b>			
	AIA	TEV	11.80%	Equities 10.50%, 10Y Gov't Bonds 5.30%
	Prudential plc	EEV	10.30% (NB), 10.30% (IF)	Gov't Bonds 3.10%, Equities 7.30%
<b>Singapore</b>	<b>Singaporean 10-year government bond yield at 31 December 2020: 0.842%</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	6.00%	Not disclosed
	Prudential plc	EEV	2.30% (NB), 2.90% (IF)	Equities: 4.40%, Gov't Bonds 0.90%
<b>South Korea</b>	<b>Korean 10-year government bond yield at 31 December 2020: 1.722%</b>			
	AIA	TEV	8.10%	Equities 6.50%, 10Y Gov't Bonds 2.20%
	Hanwha Life	TEV	7.50%	3.00%
	Samsung Life	TEV	7.50%	3.10%
<b>Taiwan</b>	<b>Taiwan 10-year government bond yield at 31 December 2020: 0.295%</b>			
	AIA	TEV	7.25%	Equities 5.60%; 10Y Gov't Bonds 1.00%
	Allianz	MCEV/SII	Risk-free interest rate curves, allowing for volatility adjustment.	Risk-free interest rate curves, allowing for volatility adjustment.
	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+)

MARKET	COMPANY	EV PRINCIPLE	RDR	INVESTMENT RETURNS
				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	TEV	10.00%	VIF 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+) 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+)
	Mercuries Life	TEV	9.50%	VNB TWD Products: 3.00% ~ 4.90% (2039+) USD Products: 3.50% ~ 5.50% (2033+) VIF TWD Products: 3.35% ~ 4.90% (2046+) USD Products: 3.80% ~ 5.50% (2043+)
	Prudential plc	EEV	3.00% (NB), 2.50% (IF)	Gov't Bonds 0.30%, Equities 4.30%
	Shin Kong	TEV	9.50%	VNB TWD Products: 2.57% ~ 4.32% USD Products: 3.79% ~ 4.82% VIF TWD Products: 3.00% ~ 4.47% USD Products: 4.10% ~ 4.93%
	Taiwan Life	TEV	10.00%	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 31 December 2020: 1.165%</b>			
	AIA	TEV	7.80%	Equities 7.70%, 10Y Gov't Bonds 2.70%
	Bangkok Life	TEV	8.30%	3.00%
	Prudential plc	EEV	8.50% (NB), 8.50% (IF)	Gov't Bonds 1.30%, Equities 5.50%
<b>Vietnam</b>	<b>Vietnamese 10-year government bond yield at 31 December 2020: 2.451%</b>			
	AIA	TEV	9.80%	Equities 9.30%, 10Y Gov't Bonds 4.00%
	Dai-ichi Life Vietnam	TEV	9.00%	Not disclosed
	Prudential plc	EEV	4.30% (NB), 4.50% (IF)	Gov't Bonds 2.60%, Equities 6.80%

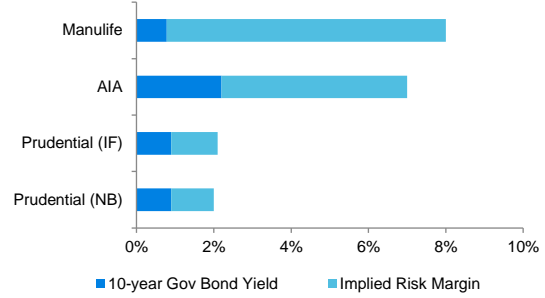
The charts in Figure 104 compare 10-year government bond yields and the RDRs assumed by different companies for each market. The implied risk margin is also illustrated for each company.

**FIGURE 104: 2020 PROXY RISK-FREE RATES AND IMPLIED RISK MARGINS<sup>88, 89</sup> BY COMPANY<sup>90</sup> FOR EACH MARKET**

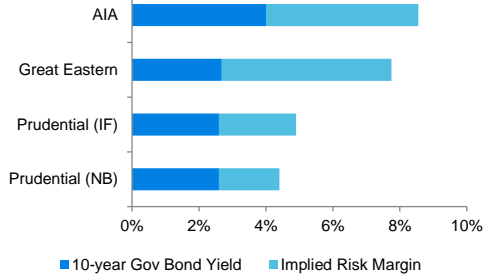
**China**



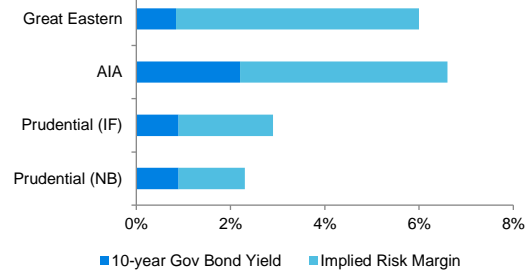
**Hong Kong**



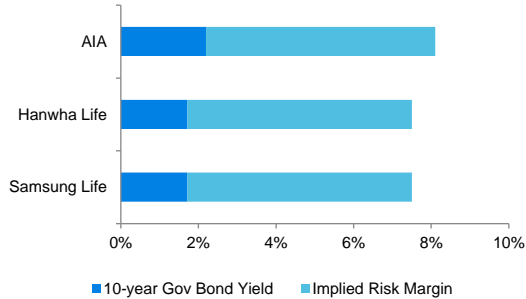
**Malaysia**



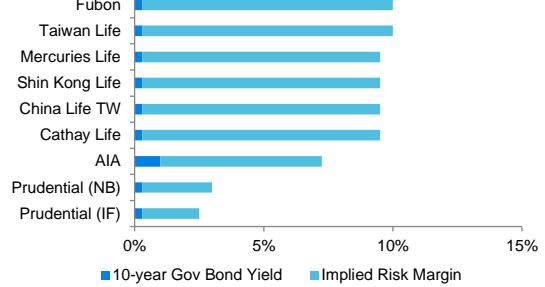
**Singapore**



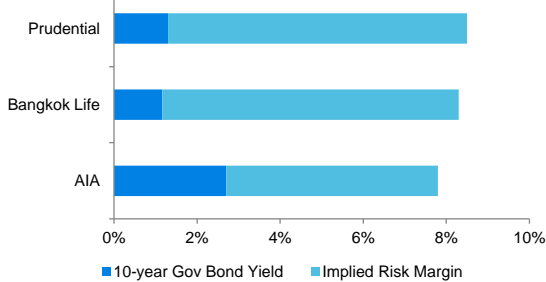
**South Korea**



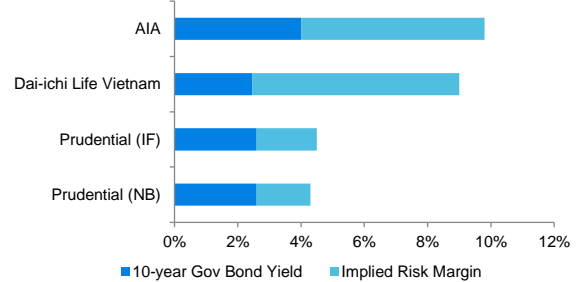
**Taiwan**



**Thailand**



**Vietnam**

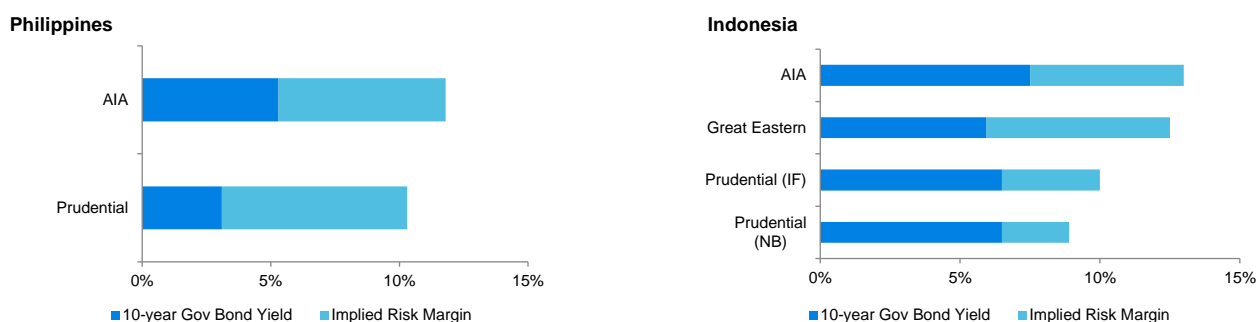


<sup>88</sup> In this case, the risk margin has been defined as the difference between the assumed RDR and the yield on a 10-year government bond as at each insurer's 2020 reporting date.

<sup>89</sup> The 10-year government bond yields have been extracted from <http://www.investing.com>.

<sup>90</sup> Note that only TEV- and EEV-reporting companies using RDRs have been included in this analysis. Companies reporting on MCEV, IEV or MC-EEV (i.e., using a discount curve similar to MCEV) bases have not been included. Companies that have not published their EV results in time for this report have also been excluded.

FIGURE 104: 2020 PROXY RISK FREE RATES AND IMPLIED RISK MARGINS (CONTINUED)



## INVESTMENT RETURN ASSUMPTIONS

Unlike insurers reporting under MCEV, companies reporting TEV and EEV results need to make assumptions about future investment returns earned on reserves and required capital. In the MCEV framework, assets are assumed to earn returns that are, on average, equal to the risk-free reference rate (typically swaps plus adjustments). The major investment assumptions for MCEV are embedded in the stochastic asset model and the calibration of those models, including correlation assumptions.

Insurers reporting under TEV and EEV tend to specify investment returns at the asset class level. However, some insurers choose to disclose (and potentially use) investment assumptions at a fund or company<sup>91</sup> level instead.

In general, the investment return assumptions used by insurers tend to be in a tight band in most markets. This is illustrated in figures 102 and 103 above. There can often be greater variation in equity return assumptions than government bond yield assumptions.

Chinese and Taiwanese insurers have assumed increasing investment returns for future years. There is limited disclosure as to how these increasing yield scenarios are reflected in the VIF calculations, in particular whether corresponding capital losses are incorporated as interest rates are projected to rise. This contrasts with AIA, where disclosures indicate that, when fixed interest yields are assumed to rise from the current level to the long-term assumptions, appropriate allowances are made for the resulting bond portfolio capital losses.

The key for any investor is to compare the investment return assumptions against available government bond yields to assess whether the implied risk premiums are reasonable. Comparing increasing yield assumptions against prevailing forward rates is also normally a useful exercise, as is understanding the asset modelling supporting any upward trending interest rate approach.

## EXPENSE OVERRUNS

Expense overruns are reported by some insurers, particularly for new operations or those in an expansion phase. The EV expense assumptions are usually based on 'fully allocated' historical experience, but this can cause insurers with fledgling operations that have yet to scale to show seemingly unprofitable business. As a result, some EV results are presented as 'pre-overrun,' where the EV figures will be calculated based on long-term target expense levels, and as 'post-overrun,' which reflects current actual expense experience. The difference between actual current expense level and the targeted long-term level is commonly referred to as an expense overrun. Overruns can come from acquisition expenses (including distribution-related costs), maintenance expenses or one-off costs.

<sup>91</sup> For example, Hanwha Life (South Korea) cites an investment assumption of 3.35% for its entire business instead of specifying the exact asset class assumptions.

## COST OF CAPITAL

Cost of capital (CoC) is typically calculated as a deduction from the PVFP to reflect the fact that assets backing the required capital are held within an insurance company and, therefore, cannot be distributed to shareholders immediately. Additional frictional costs may arise from investing in assets via an insurance company, such as additional taxation, investment expenses, or the fact that investors do not have direct control over their capital (known as agency costs). CoC may also arise in respect of asymmetric non-hedgeable risks that may not have been reflected in the PVFP, and reflects the potential additional cost and risk on shareholders. The split into FCoC and CRNHR is a requirement of the MCEV and IEV reporting principles.

Under TEV, CoC reflects the cost to shareholders of having to hold the required capital, which will earn the after-tax investment rate of return instead of the RDR. The CRNHR is generally implicit in the choice of the RDR assumption; hence it is not disclosed separately. Asian insurers reporting TEV usually include the impact of the CoC as part of the EV report, although a few companies do not.

Companies reporting under MCEV principles typically allow for FCoC within the investment income on assets backing the required capital by:

- Projecting investment returns using the reference rate net of tax and investment management expenses
- Discounting using the reference rate gross of tax and investment management expenses

Companies may also adopt such an approach under the EEV principles, especially if they use a market-consistent basis. Alternatively, the CoC may be calculated based on the difference between the real-world investment return assumptions and the RDR, similar to the approach for TEV.

The majority of companies reporting MCEV calculate the CoC using the frictional cost approach, which is the approach required under MCEV principles. However, the definition of required capital differs among companies. As at year-end 2020, almost all companies disclosed that they set their required capital by reference to domestic regulatory requirements, with a few MNCs such as Aviva and Prudential plc also taking into consideration the results from their internal models.

An important assumption behind EV calculations is the level of SM assumed to be held in the future. Given the nature of EV calculations, the primary impact of capital assumptions is the effect of the timing of cash flows. Capital is provided by shareholders to support the writing of new business and is eventually returned to shareholders as profit emerges.

Figure 105 summarises the required SM assumed by insurers for their Asian operations.

**FIGURE 105: SUMMARY OF SOLVENCY MARGIN REQUIREMENTS BY COMPANY<sup>92</sup>**

CATEGORY	COMPANY	EV METHODOLOGY	REQUIRED CAPITAL
MNC	AIA	TEV	China: 100% of required capital as specified under the CAA EV assessment guidance. Hong Kong: 150% minimum SM Indonesia: 120% RBC Malaysia: 170% RBC Philippines: 100% RBC Singapore: Higher of 135% of capital adequacy requirement and 80% of Tier 1 capital requirement under RBC. South Korea: 150% RBC Sri Lanka: 120% RBC Taiwan: 250% RBC Thailand: 140% RBC Vietnam: 100% minimum SM
MNC	Allianz	MCEV/SII	Solvency capital requirement (SCR as per SII)
MNC	Aviva	SII	Solvency capital requirement (SCR as per SII)
MNC	AXA	SII	150% for entities outside European Economic Area (EEA) with limitations on soft capital to half of the target solvency capital.

<sup>92</sup> Blue shaded entries indicate that the 2020 required solvency capital information has not yet been disclosed, and that the assessment has been based on 2019 disclosures instead.

CATEGORY	COMPANY	EV METHODOLOGY	REQUIRED CAPITAL
MNC	Generali	MCEV	For non-EEA: maximum of 100% of the local regulatory required capital and the Solvency II capital based on Standard Formula, net of the relevant free coverage.
MNC	Great Eastern	TEV	Requirements are based on the RBC framework as set out in local regulations for Singapore and Malaysia.
MNC	Manulife	TEV	China: 100% of required capital as specified under the CAA EV assessment guidance. Indonesia: 120% RBC Malaysia: 160% CAR The Philippines: 125% RBC Singapore: 120% CAR Vietnam: 100% minimum SM
MNC	Prudential plc	EEV	Amount at least equal to local statutory notification requirements.
MNC	Zurich	MCEV	At least at the level equal to the regulatory required capital and in addition, an adequate buffer to cover short-term volatilities in solvency due to financial and non-financial risks or to achieve the capital required to maintain the desired credit rating.
CHINA	China Life	TEV	Not disclosed
CHINA	China Pacific	TEV	Calculated as specified under the CAA EV assessment guidance.
CHINA	China Taiping	TEV	100% minimum SM
CHINA	New China Life	TEV	100% of the minimum capital requirement prescribed by the CBIRC
CHINA	PICC Life	TEV	Not disclosed
CHINA	Ping An	TEV	Not disclosed
INDIA	Bajaj Allianz Life	MCEV	Not disclosed
INDIA	Aditya Birla Sun Life	MCEV	Not disclosed
INDIA	Exide Life	MCEV	Not disclosed
INDIA	HDFC Life	IEV	170% of factor-based solvency requirements less the funds for future appropriations (FFA) in the participating funds.
INDIA	ICICI Prudential Life	IEV	The amount of required capital is presented from the shareholders' perspective and is net of the funds for future appropriation (FFAs).
INDIA	Kotak Life	IEV	Not disclosed
INDIA	Max Life	MCEV	170% of factor-based solvency requirements
INDIA	PNB MetLife	IEV	170% of factor-based solvency requirements
INDIA	Reliance Nippon Life	TEV	Not disclosed
INDIA	SBI Life	IEV	180% of factor-based solvency requirements
JAPAN	Daido Life	MCEV	Higher of Japanese regulatory minimum capital requirement (200% SM Ratio) and 133% of economic capital.
JAPAN	Dai-ichi Life	MC-EEV	Capital required to maintain 400% SM Ratio
JAPAN	Dai-ichi Frontier Life	MC-EEV	Capital required to maintain 400% SM Ratio
JAPAN	Japan Post Insurance Co Ltd	MC-EEV	Capital required to maintain 600% SM Ratio
JAPAN	LifeNet Insurance	MC-EEV	Capital required to maintain 500% SM Ratio
JAPAN	Medicare Life	MC-EEV	Not disclosed
JAPAN	Meiji Yasuda Life	MC-EEV	Capital required to maintain 350% regulatory SM ratio
JAPAN	MS&AD Aioi Life	MC-EEV	Capital required to maintain 600% Target SM Ratio
JAPAN	MS&AD Primary Life	MC-EEV	Capital required to maintain 600% Target SM Ratio
JAPAN	Neo First Life	MC-EEV	Capital required to maintain 400% SM Ratio
JAPAN	Sompo Himawari Life	MCEV	Capital required to maintain 600% statutory SM ratio
JAPAN	Sony Life	MCEV	Higher of Japanese regulatory minimum capital requirement (200% SM Ratio) or internal target.
JAPAN	Sumitomo Life	MC-EEV	Not disclosed

CATEGORY	COMPANY	EV METHODOLOGY	REQUIRED CAPITAL
JAPAN	T&D Financial Life	MCEV	Higher of Japanese regulatory minimum capital requirement (200% SM Ratio) and 133% of economic capital.
JAPAN	Taiyo Life	MCEV	Higher of Japanese regulatory minimum capital requirement (200% SM Ratio) and 133% of economic capital.
JAPAN	Tokio Marine & Nichido Life	MCEV	Higher of statutory minimum requirement level and internal target.
SOUTH KOREA	Hanwha Life	TEV	150% RBC
SOUTH KOREA	Samsung Life	TEV	150% RBC
TAIWAN	Cathay Life	TEV	200% RBC
TAIWAN	China Life TW	TEV	200% RBC
TAIWAN	Fubon	TEV	200% RBC
TAIWAN	Mercuries Life	TEV	200% RBC
TAIWAN	Shin Kong	TEV	200% RBC
TAIWAN	Taiwan Life	TEV	200% RBC
THAILAND	Bangkok Life	TEV	Not disclosed
VIETNAM	Dai-ichi Life Vietnam	TEV	Not disclosed

EV-reporting insurers generally use similar assumptions, opting to use the level of SM at which they believe regulatory intervention will occur. The exceptions to this are as follows:

- In Singapore, where AIA uses 135% while Manulife uses 120% (Great Eastern did not disclose the minimum regulatory level for 2020)
- In Malaysia, where AIA uses 170% and Manulife uses 160% (Great Eastern did not disclose the minimum regulatory level for 2020)
- In Taiwan, where AIA uses 250% compared with the 200% used by all domestic insurers
- In India, where SBI Life uses 180% compares to 170% used by other insurers

A few companies notably do not disclose their required SM assumptions.

#### TIME VALUE OF OPTIONS AND GUARANTEES

The impact of financial options and guarantees can be split into two components. The first is the effect on the PVFP with respect to the intrinsic value<sup>93</sup> of such financial options and guarantees. The second is the TVOG, representing the difference between the total value of the options or guarantees and the intrinsic value. It is effectively the value of the 'optionality' bestowed on the policyholder for the duration of the insurance contract.

The reporting of TVOG is mandatory for insurers reporting on EEV, MCEV and IEV bases. The TVOG primarily corresponds to the asymmetry of the impact over a range of scenarios on the distributable earnings to shareholders. For example, for the case of participating contracts, profits are shared between shareholders and policyholders. Losses, however, are only shared up to a certain point, after which shareholders bear all the subsequent losses. This can be further exacerbated by the actions of policyholders (dynamic policyholder behaviour).

The features of products that generally give rise to an assessment of TVOG can include interest rate guarantees on traditional products, profit-sharing features such as bonuses or levels of credited rates and guaranteed benefits on linked and guaranteed annuity options. Other features such as 'return of premiums' are also a form of a guarantee.

As noted, EEV-, MCEV- and IEV-reporting insurers are required to assess the TVOG using stochastic techniques. Closed-form solutions can also be used where they lead to sufficiently accurate results but may not be suitable in valuing certain guarantees. The stochastic models must be appropriately calibrated and internally consistent with the rest of the modelling methodologies and approaches. Management actions can be allowed for, including those relating to crediting rates, bonus rates, charges to asset shares, and investment strategies. These management actions can be reflected, if such actions are consistent with the insurer's normal governance and approval processes, are consistent with the operating environment and take into account the market reaction to discretion.

<sup>93</sup> In the example of a financial call option, the intrinsic value is the positive difference between the current underlying asset price and the strike price.

Dynamic policyholder behaviour is included in many companies' assessments of TVOG. In particular, a number of companies recognise the impact of dynamic policyholder behaviour under certain economic scenarios.

Figure 106 shows that, of those companies that disclosed the number of scenarios used, the majority applied 5,000 economic scenarios on a market-consistent basis.

**FIGURE 106: SUMMARY OF TVOG APPROACHES<sup>94</sup>**

COMPANY TYPE	COMPANY	OPTIONS AND GUARANTEES	SCENARIOS	USE OF DYNAMIC POLICYHOLDER BEHAVIOUR	CALCULATED TVOG (ASIA VALUE)
MNC	Allianz	Market-consistent, stochastic	1,000 (5,000 in Germany)	Yes	Not disclosed
MNC	Aviva	Market-consistent, stochastic	Not disclosed	Not disclosed	Not disclosed
MNC	AXA	Market-consistent, stochastic	At least 1,000	Yes	EUR 53 million for VNB
MNC	Generali	Market-consistent, stochastic	1,000	Yes	Not disclosed
MNC	Prudential plc	Stochastic	Not disclosed	Yes	USD 1,912 million
MNC	Zurich	Market-consistent, stochastic	1,000	Yes	USD 24 million
India	Aditya Birla Sun Life	Not disclosed	Not disclosed	Not disclosed	Not disclosed
India	ICICI Prudential Life	Stochastic	Not disclosed	Not disclosed	Not disclosed
India	HDFC Life	Not disclosed	Not disclosed	Not disclosed	Not disclosed
India	SBI Life	Not disclosed	Not disclosed	Not disclosed	Not disclosed
India	Kotak Life	Not disclosed	Not disclosed	Not disclosed	Not disclosed
India	Max Life	Stochastic	5,000	Not disclosed	INR 60 crore
Japan	Daido Life	Stochastic	5,000	Yes	JPY 38.6 billion
Japan	Dai-ichi Life	Stochastic	5,000	Yes	JPY 90 billion
Japan	Dai-ichi Frontier Life	Stochastic	5,000	Yes	JPY 37.1 billion
Japan	Japan Post Insurance Co Ltd	Stochastic	5,000	Yes	JPY 232.3 billion
Japan	Neo First Life	TVOG is zero	5,000	Yes	Set as NIL
Japan	LifeNet Insurance	TVOG is zero	Not used	No	Set as NIL
Japan	Medicare Life	Stochastic	5,000	Yes	JPY 0.1 billion
Japan	Meiji Yasuda Life	Stochastic	5,000	Yes	JPY 153.6 billion
Japan	MS&AD Aioi Life	Stochastic	5,000	Yes	JPY 44.0 billion
Japan	MS&AD Primary Life	Stochastic	5,000	Yes	JPY 6.9 billion
Japan	Sompo Himawari Life	Stochastic	1,000	Yes	JPY 12.7 billion
Japan	Sony Life	Stochastic	1,000	Yes	JPY 163.3 billion
Japan	Sumitomo Life	Stochastic	5,000	Yes	JPY 76.7 billion
Japan	Tokio Marine & Nichido Life	Stochastic	1,000 or 2,000	Yes	JPY 33.6 billion
Japan	T&D Financial Life	Stochastic	5,000	Yes	JPY 0.1 billion
Japan	Taiyo Life	Stochastic	5,000	Yes	JPY 24.2 billion
South Korea	Hanwha Life	Stochastic cost of GMxB guarantees included in PVFP	1,000	Not disclosed	Not disclosed
South Korea	Samsung Life	Stochastic cost of GMxB guarantees included in PVFP	1,000	Not disclosed	Not disclosed

<sup>94</sup> Blue shaded entries indicate that the 2020 required solvency capital information has not yet been disclosed, and that the assessment has been based on 2019 disclosures instead.



Figure 106 discloses the TVOG approaches at a group level. For example, Prudential plc explicitly identifies its participating portfolios in Hong Kong, Singapore, Malaysia and Taiwan in its TVOG calculations. Other key markets, such as Indonesia, are unlikely to be a material source of TVOG for Prudential plc, given the predominance of linked and pure protection business.

Aviva and Allianz continue to disclose limited EV information and no longer report their Asia EV and TVOG figures, although AXA still provided the TVOG on its 2018 Asia VNB. Meanwhile, more Indian insurers have started to publish EV results, with many of them disclosing TVOG figures that are of a similar magnitude as the MNCs.

## Disclosures

Analysts have frequently commented that the drive towards greater consistency, through improved guidance and developments in EV reporting, has helped to improve their understanding of the inherent values and strengths within companies. The richness of disclosures has been particularly helpful, as they allow analysts to compare and contrast performances across insurers.

Similarly, EV reporting continues to provide rating agencies with valuable information in their credit assessments. For example, Standard & Poor's (S&P) states that return on embedded value (ROEV) is one of the factors considered in determining life insurers' ratings. Additional disclosures, and the component nature with which the analysis is presented, assist rating agencies in drilling down into the underlying key risk drivers and the areas of a company that are most important and/or where the ability to generate value is most at risk.

The most developed EV disclosure requirements are set out in the EEV and MCEV principles from the European Insurance CFO Forum, which cover methodology, assumptions, sensitivities and analyses. APS10 standard disclosures for IEV in India require similar levels of detail. However, the prevalence of TEV in Asia, with the associated lack of any disclosure standards or requirements, makes it more difficult to use EV results for comparison and evaluation purposes.

The quality of EV disclosures tends to be closely correlated with the nature of the insurance operations. MNCs (whether they are Asian, European or North American) tend to provide more disclosure than insurers focusing on one or two core markets. For the single-market operations, typical disclosures include only group EV and VNB, and some companies do not disclose key assumptions, such as RDR and investment return.

The table in Figure 107 summarises the available disclosures of insurers operating in Asia. While the level of disclosures in Asia lags behind Europe now, the key components are typically provided, i.e. analysis of movement, sensitivities and key assumptions.

Another key differentiator between Europe and Asia is that it is normal practice for European insurers to include a detailed EV report in their annual reports, almost to the same level of detail as their statutory IFRS statements. At this time, only AIA amongst the Asian insurers has a comparable level of disclosure.

We anticipate that more detailed reporting will follow over the next few years as Asian insurers increase in scale, complexity and sophistication, not only in EV methodology but in investor relations as well.

Note: Figure 107 should not and cannot be taken as endorsement or verification of any kind on the part of Milliman that the disclosures of specific sections by specific companies meet, in part or in full, the requirements laid out by the EEV or MCEV principles.

FIGURE 107: SUMMARY OF DISCLOSURES IN 2020<sup>95</sup>

TYPE	COMPANY	EV PRINCIPLE	EVIDENCE OF INDEPENDENT REVIEW OF EV RESULTS	ANALYSIS OF EV MOVEMENT	RECONCILIATION OF ANW TO IFRS NET ASSETS	COST OF CAPITAL/REQUIRED CAPITAL	RDR ASSUMPTIONS	INVESTMENT RETURN ASSUMPTIONS	EXPENSE INFLATION ASSUMPTIONS	NEW BUSINESS MARGIN INFORMATION	EV AND VNB SENSITIVITIES
MNC	AIA	TEV	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Allianz	MCEV / SII	✓	✓		✓	✓	✓		✓	✓
	Aviva	SII	✓		✓		✓	✓		✓	
	AXA	SII	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Generali	MCEV				✓	✓	✓	✓	✓	
	Great Eastern	TEV	✓	✓			✓				✓
	Manulife	TEV	✓	✓	✓	✓	✓	✓		✓	✓
	Prudential plc	EEV	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Zurich	MCEV	✓	✓	✓	✓	✓	✓	✓	✓	✓
CHINA	China Life	TEV	✓	✓		✓	✓	✓	✓	✓	✓
	China Pacific	TEV	✓	✓		✓	✓	✓	✓	✓	✓
	China Taiping	TEV	✓	✓		✓	✓	✓		✓	✓
	New China Life	TEV	✓	✓		✓	✓	✓	✓	✓	✓
	PICC Life	TEV	✓	✓		✓	✓	✓	✓		✓
	Ping An	TEV	✓	✓		✓	✓	✓	✓	✓	✓
INDIA	Bajaj Allianz Life	MCEV		✓			✓	✓		✓	
	Aditya Birla Sun Life	MCEV		✓						✓	✓
	HDFC Life	IEV		✓		✓	✓	✓		✓	✓
	ICICI Prudential Life	IEV	✓	✓		✓	✓	✓		✓	✓
	Kotak Life	IEV	✓							✓	
	Max Life	MCEV		✓			✓	✓		✓	✓
	Reliance Nippon Life	TEV									
	SBI Life	IEV	✓	✓		✓	✓	✓		✓	✓
JAPAN	Daido Life	MCEV	✓	✓		✓	✓	✓	✓	✓	✓
	Dai-ichi Life	MC-EEV	✓	✓		✓	✓	✓	✓	✓	✓
	Dai-ichi Frontier Life	MC-EEV	✓	✓		✓	✓	✓	✓	✓	✓
	Japan Post Insurance Co Ltd	MC-EEV	✓	✓		✓	✓	✓	✓	✓	✓
	LifeNet Insurance	MC-EEV	✓	✓		✓	✓	✓	✓	✓	✓
	Medicare Life	MC-EEV		✓			✓	✓	✓	✓	✓
	Meiji Yasuda Life	MC-EEV	✓	✓		✓	✓	✓	✓	✓	✓
	MS&AD Aioi Life	MC-EEV	✓	✓		✓	✓	✓	✓	✓	✓
	MS&AD Primary Life	MC-EEV	✓	✓		✓	✓	✓	✓	✓	✓
	Neo First Life	MC-EEV	✓	✓		✓	✓	✓	✓	✓	✓
	Sompo Japan Nipponkoa Himawari Life	MCEV	✓	✓		✓	✓	✓	✓	✓	✓
	Sony Life	MCEV	✓	✓		✓	✓	✓	✓	✓	✓
	Sumitomo Life	MC-EEV		✓			✓	✓	✓	✓	✓
	T&D Financial Life	MCEV	✓	✓		✓	✓	✓	✓	✓	✓

<sup>95</sup> Blue shaded entries indicate that the 2020 EV results have not yet been disclosed, and that the assessment has been based on 2019 disclosures instead.

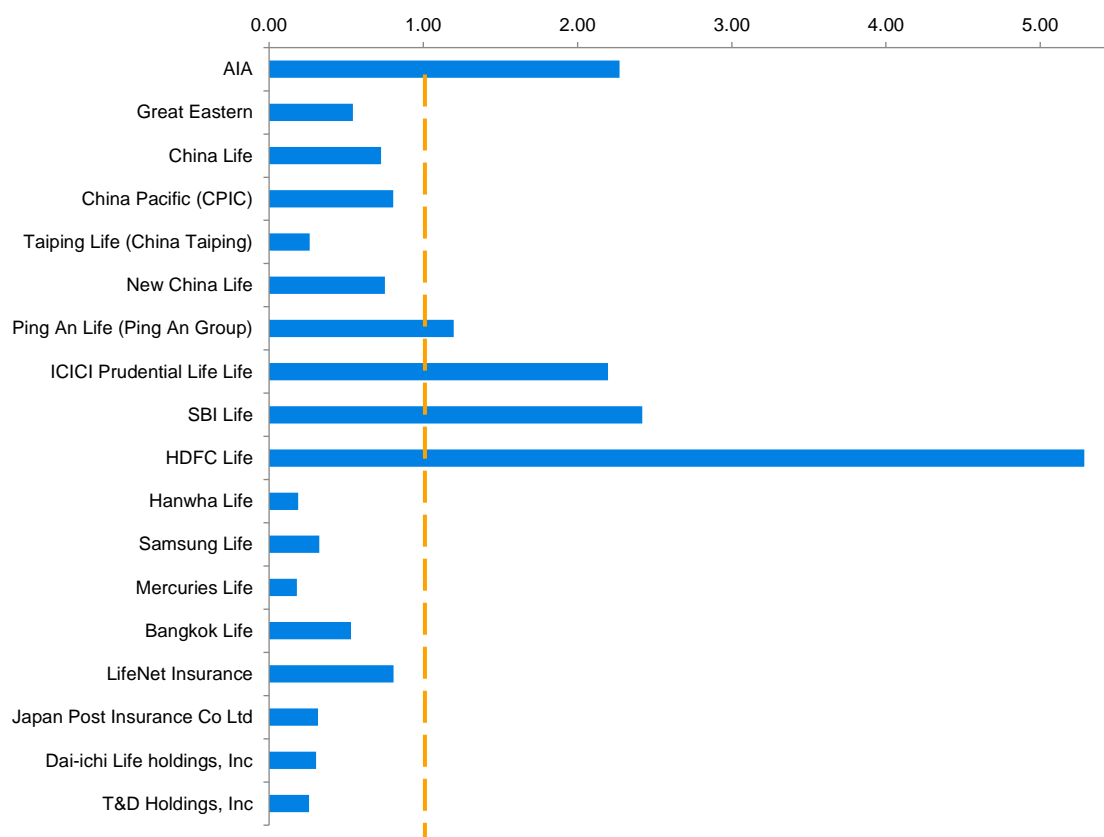
TYPE	COMPANY	EV PRINCIPLE	EVIDENCE OF INDEPENDENT REVIEW OF EV RESULTS	ANALYSIS OF EV MOVEMENT	RECONCILIATION OF ANW TO IFRS NET ASSETS	COST OF CAPITAL/ REQUIRED CAPITAL	RDR ASSUMPTIONS	INVESTMENT RETURN ASSUMPTIONS	EXPENSE INFLATION ASSUMPTIONS	NEW BUSINESS MARGIN INFORMATION	EV AND VNB SENSITIVITIES
	Taiyo Life	MCEV	✓	✓		✓	✓	✓	✓	✓	✓
	Tokio Marine & Nichido Life	MCEV	✓	✓		✓	✓	✓	✓	✓	✓
<b>KOREA</b>	Hanwha Life	TEV		✓		✓	✓	✓	✓	✓	✓
	Samsung Life	TEV					✓	✓	✓	✓	
<b>TAIWAN</b>	Cathay Life	TEV	✓	✓		✓	✓	✓	✓	✓	✓
	China Life TW	TEV	✓	✓		✓	✓	✓			✓
	Fubon	TEV	✓	✓		✓	✓	✓		✓	✓
	Mercuries Life	TEV	✓	✓		✓	✓	✓			✓
	Shin Kong	TEV		✓		✓	✓	✓			✓
	Taiwan Life	TEV	✓	✓		✓	✓	✓		✓	✓
<b>THAILAND</b>	Bangkok Life	TEV					✓	✓			
<b>VIETNAM</b>	Dai-ichi Life Vietnam	TEV	✓				✓	✓		✓	

## Other measures of value

### MARKET CAPITALISATION

Figure 108 gives the price/EV (P/EV) ratios for listed insurers.

**FIGURE 108: MARKET CAPITALISATION TO EMBEDDED VALUE RATIOS AS AT 2020 REPORTING DATES<sup>96</sup>**



\* For Chinese insurance groups, P/EV ratios are based on disclosed group EVs. We have also chosen to exclude listed companies which are not predominantly involved in life insurance business. Excluded companies include: PICC Life (PICC Group), Cathay Life (Cathay FHC), Fubon (Fubon FHC), Shin Kong (Shin Kong FHC) and Taiwan Life (CTBC FHC).

For Japanese insurance groups, we have excluded Sony Life 100%, which is owned by Sony Financial Group in the graph.

All P/EV ratios have been calculated either using 'share price/EV per share' or 'market capitalisation/EV' as at the reporting date of EV results.

The standard treatment for including non-covered business is to add the net assets (analogous to ANW in the EV world), thereby excluding the assets' equivalent of the VIF. As a result, there is a tendency for composites and groups with large banking or investment businesses to differ from the industry average based on the P/EV metric.

### RETURN ON EMBEDDED VALUE

The return on embedded value represents the post-tax operating profit, expressed as a percentage of the opening EV. For clarity, this metric typically excludes any impact of changes in the economic environment. The key components of ROEV include the expected return earned on the opening EV, value added by new business and variance in actual experience from expected experience. In markets like India, where this metric is widely reported, the metric is commonly used by analysts to compare a company's performance against its peers. Operating ROEV is calculated as the EV operating profit for the year expressed as a percentage of opening EV.

<sup>96</sup> There was an error in the previous report version for HDFC Life ratio.

Figure 109 tabulates the ROEV disclosed by selected companies in Asia for 2019 and 2020.

**FIGURE 109: ROEV FOR 2019 AND 2020**

COMPANY TYPE	COMPANY	EV METHODOLOGY	ROEV (2019)	ROEV (2020)
<b>MNC</b>	AIA	TEV	15.90%	11.70%
	Prudential plc	EEV	17.00%	10.00%
	T&D Holdings, Inc.	MCEV	0.90%	Not disclosed
<b>China</b>	Ping An	TEV	25.00%	14.50%
<b>India</b>	Bajaj Allianz Life	MCEV	Not disclosed	9.40%
	Aditya Birla Sun Life	MCEV	13.20%	13.70%
	HDFC Life	IEV	18.10%	18.50%
	ICICI Prudential Life	IEV	15.20%	15.20%
	Max Life	MCEV	20.30%	Not disclosed
	SBI Life	IEV	20.50%	19.10%
<b>Japan</b>	Japan Post Insurance Co Ltd	MC-EEV	-2.80%	5.00%
<b>South Korea</b>	Hanwha Life	TEV	Not disclosed	5.30%
	Samsung Life	TEV	2.30%	9.30%

## IFRS 17

The preparation of accounts on an IFRS basis gives rise to a different interpretation and timing of profit and loss compared with an EV basis. This is fundamentally due to current IFRS 4 standards (called 'Phase I,' implemented in 2004) focusing on a current view of assets and liabilities together with current profit generation compared with EV, which makes allowances for future earnings and the shareholder value created. Reconciliation of these different measures helps to reveal different features of insurers' underlying performance.

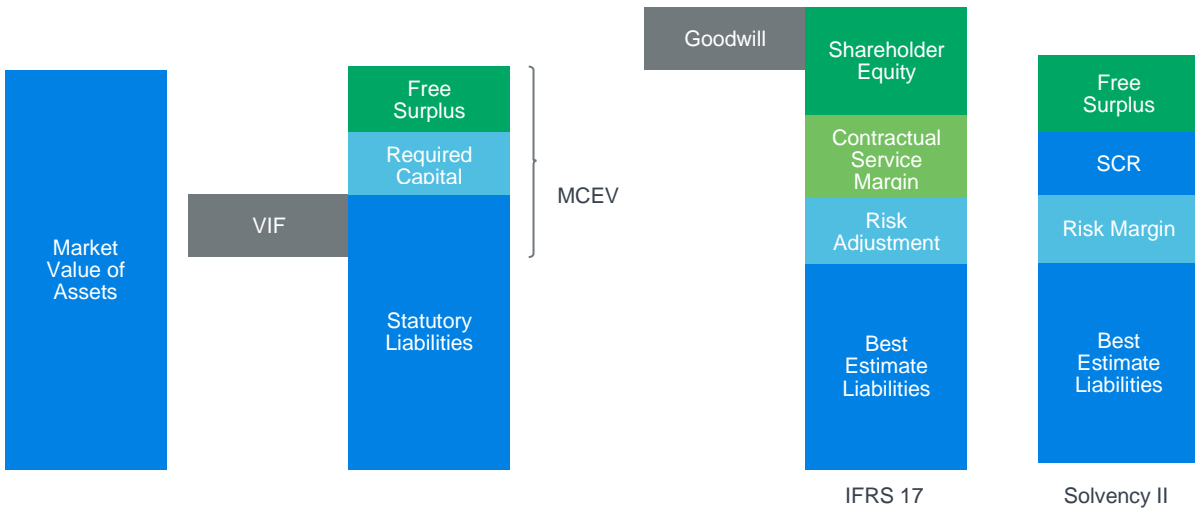
On 18 May 2017, the IASB published its new standard on accounting for insurance contracts: IFRS 17. The standard will apply for accounting periods starting on or after 1 January 2023, but prior year comparative figures will be required. The standard is directed at insurance contracts, rather than insurance entities, and aims at consistent accounting for all insurance contracts and increased transparency in financial information reported by insurance companies.

In summary, the principle-based standard requires an assessment of the profitability of insurance contracts when they are first issued and, if positive, recognition of profit over the lifetime of the contracts in a manner that reflects the timing of the insurance services provided by the insurer. Specifically, the main features of the new accounting model for insurance contracts include:

- A measurement of the present value of future cash flows, incorporating an explicit risk adjustment. Assumptions used in the projection need to be the current best estimate and the discount rate should be set to ensure that the net finance results clearly (and exclusively) reflect changes in economic conditions. The discount rates can be derived using two different approaches, referred to as 'top-down' or 'bottom-up'.
- A contractual service margin (CSM) represents the unearned profits of the insurance contract to be recognised in profit over the coverage period (any loss is recognised immediately). The CSM is calculated at inception of the contract and then released over the coverage period of the contract in a systematic way that best reflects the transfer of services provided under the contract. The CSM cannot be negative so losses from unprofitable contracts are immediately booked in the profit and loss (P&L) statements.
- The companies are required to identify contracts that are onerous (loss-making) at inception and group them separately from non-onerous contracts. The group of non-onerous contracts will need to be further split into at least two groups—one group with no significant risk of becoming onerous and one group with other profitable contracts. Companies are also required to group contracts written one year apart.
- The presentation of results in the income statement and balance sheet will change significantly. The presentation of insurance revenue and insurance service expenses in the statement of comprehensive income is based on the concept of services provided during the period.

In August 2018, the Financial Accounting Standards Board (FASB) issued ASU 2018-12, 'Targeted Improvements to the Accounting for Long-Duration Contracts', with the objective of making targeted improvements to the existing recognition, measurement, presentation, and disclosure requirements for long-duration contracts issued by an insurance entity. The major updates include improving timeliness of recognising changes in the liability for future policy benefits, modifying the rate used to discount future cash flows, simplifying and improving the accounting for certain market-based options (MRBs), simplifying the amortisation of deferred acquisition costs and improving the effectiveness of the required disclosures. On 10 June 2020, the FASB voted to have a one-year delay in the implementation date of ASU 2018-12 due to considerations around the pandemic. The proposed IFRS 17 is compared with MCEV and Solvency II in Figure 110.

FIGURE 110: MCEV VS. SOLVENCY II VS. IFRS 17



Despite recent developments in financial reporting, the implementation of Solvency II and the publication of the IASB's finalised standard, IFRS 17, EV remains an important metric to showcase insurers' financial performances and their business strategies to investors, analysts and customers.

An improvement in overall EV results over 2020, reflecting for many firms' strong growth of new business and largely favourable economic effects, continued to indicate a relatively stable and optimistic market. However, with a largely unsettled global political landscape, the market environment continues to present challenges for insurers.

With an implementation date for IFRS 17 of 1 January 2023 for most markets, and with a prior year comparative result also required, insurers will increasingly be focused on ensuring their readiness under this new standard. As a result, it remains uncertain whether EV will continue evolving to remain a useful metric alongside the new solvency and accounting regimes.

## Appendix A: Total Asian EV by company by territory

FIGURE 111: TOTAL ASIAN EV BY COMPANY (USD MILLIONS<sup>97 98</sup>)

TYPE	COMPANY	EV PRINCIPLE	Territories													TOTAL
			CHINA	HONG KONG	INDIA	JAPAN	KOREA	MALAYSIA	SINGAPORE	TAIWAN	THAILAND	INDONESIA	PHILIPPINES	VIETNAM	UNALLOCATED	
MNC	AIA	TEV	11,844	22,895	-	-	-	3,144	6,586	-	7,057	-	-	-	13,721	65,247
	Allianz	MCEV / SII	-	-	-	-	-	-	-	-	-	-	-	-	4,024	4,024
	Aviva	SII	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	AXA	EEV	-	-	-	-	-	-	-	-	-	-	-	-	17,608	17,608
	Great Eastern	TEV	-	-	-	-	-	3,553	9,633	-	-	-	-	-	-	13,186
	Manulife	TEV	-	-	-	-	-	-	-	-	-	-	-	-	23,541	23,541
	Prudential plc	EEV	2,798	20,156	-	-	-	4,142	8,160	-	-	2,630	-	-	4,922	42,808
	Zurich	MCEV	-	-	-	-	-	-	-	-	-	-	-	-	3,998	3,998
CHINA	China Life	TEV	164,221	-	-	-	-	-	-	-	-	-	-	-	-	164,221
	China Pacific	TEV	52,285	-	-	-	-	-	-	-	-	-	-	-	-	52,285
	China Taiping	TEV	25,966	-	-	-	-	-	-	-	-	-	-	-	-	25,966
	New China Life	TEV	36,854	-	-	-	-	-	-	-	-	-	-	-	-	36,854
	PICC Life	TEV	15,669	-	-	-	-	-	-	-	-	-	-	-	-	15,669
	Ping An	TEV	126,301	-	-	-	-	-	-	-	-	-	-	-	-	126,301
INDIA	Bajaj Allianz Life	MCEV	-	-	2,123	-	-	-	-	-	-	-	-	-	-	2,123
	Aditya Birla Sun Life	MCEV	-	-	880	-	-	-	-	-	-	-	-	-	-	880
	Exide Life	MCEV	-	-	368	-	-	-	-	-	-	-	-	-	-	368
	HDFC Life	IEV	-	-	3,638	-	-	-	-	-	-	-	-	-	-	3,638
	ICICI Prudential Life	IEV	-	-	3,978	-	-	-	-	-	-	-	-	-	-	3,978
	Kotak Life	IEV	-	-	1,349	-	-	-	-	-	-	-	-	-	-	1,349
	Max Life	MCEV	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PNB MetLife	IEV	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Reliance Nippon Life	TEV	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SBI Life	IEV	-	-	4,975	-	-	-	-	-	-	-	-	-	-	4,975
JAPAN	Daido Life	MCEV	-	-	-	18,616	-	-	-	-	-	-	-	-	-	18,616
	Dai-ichi Life	MC-EEV	-	-	-	46,363	-	-	-	-	-	-	-	-	-	46,363
	Dai-ichi Frontier Life	MC-EEV	-	-	-	5,312	-	-	-	-	-	-	-	-	-	5,312
	Japan Post Insurance Co Ltd	MC-EEV	-	-	-	36,406	-	-	-	-	-	-	-	-	-	36,406
	LifeNet Insurance	MC-EEV	-	-	-	860	-	-	-	-	-	-	-	-	-	860
	Medicare Life	MC-EEV	-	-	-	1,883	-	-	-	-	-	-	-	-	-	1,883
	Meiji Yasuda Life	MC-EEV	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	MS&AD Aioi Life	MC-EEV	-	-	-	8,665	-	-	-	-	-	-	-	-	-	8,665
	MS&AD Primary Life	MC-EEV	-	-	-	5,040	-	-	-	-	-	-	-	-	-	5,040
	Neo First Life	MC-EEV	-	-	-	1,512	-	-	-	-	-	-	-	-	-	1,512
	Sompo Life	MCEV	-	-	-	8,852	-	-	-	-	-	-	-	-	-	8,852
	Sony Life	MCEV	-	-	-	17,782	-	-	-	-	-	-	-	-	-	17,782
	Sumitomo Life	MC-EEV	-	-	-	42,160	-	-	-	-	-	-	-	-	-	42,160
	T&D Financial Life	MCEV	-	-	-	977	-	-	-	-	-	-	-	-	-	977
Taiyo Life	MCEV	-	-	-	10,079	-	-	-	-	-	-	-	-	-	10,079	
Tokio Marine & Nichido Life	MCEV	-	-	-	10,645	-	-	-	-	-	-	-	-	-	10,645	
SOUTH KOREA	Hanwha Life	TEV	-	-	-	-	8,927	-	-	-	-	-	-	-	-	8,927
	Samsung Life	TEV	-	-	-	-	40,051	-	-	-	-	-	-	-	-	40,051

<sup>97</sup> EV results have been converted at the prevailing USD exchange rate as at the reporting date.<sup>98</sup> Blue-shaded entries indicate that the 2020 EV results have not yet been disclosed as at the data cutoff date of this report.



TYPE	COMPANY	EV PRINCIPLE	CHINA	HONG KONG	INDIA	JAPAN	KOREA	MALAYSIA	SINGAPORE	TAIWAN	THAILAND	INDONESIA	PHILIPPINES	VIETNAM	UNALLOCATED	TOTAL
<b>MALAYSIA</b>	Hong Leong Assurance	TEV	-	-	-	-	-	588	-	-	-	-	-	-	-	588
<b>TAIWAN</b>	Cathay Life	TEV	-	-	-	-	-	-	-	40,729	-	-	-	-	-	40,729
	China Life TW	TEV	-	-	-	-	-	-	-	12,731	-	-	-	-	-	12,731
	Fubon	TEV	-	-	-	-	-	-	-	27,820	-	-	-	-	-	27,820
	Mercuries Life	TEV	-	-	-	-	-	-	-	4,386	-	-	-	-	-	4,386
	Shin Kong	TEV	-	-	-	-	-	-	-	11,015	-	-	-	-	-	11,015
	Taiwan Life	TEV	-	-	-	-	-	-	-	8,025	-	-	-	-	-	8,025
<b>THAILAND</b>	Bangkok Life	TEV	-	-	-	-	-	-	-	-	2,249	-	-	-	-	2,249
<b>VIETNAM</b>	Dai-ichi Life Vietnam	TEV	-	-	-	-	-	-	-	-	-	-	-	963	-	963

## Appendix B: Exchange rates

**FIGURE 112: EXCHANGE RATES USED IN THE REPORT**

Exchange rate (USD per currency) as at valuation dates:

CURRENCY	3/31/2021	12/31/2020	3/31/2020	12/31/2019	3/31/2019	12/31/2018	3/31/2018
CAD	0.7955	0.7841	0.7083	0.7715	0.7495	0.7329	0.7754
CHF	1.0618	1.1308	1.0391	1.0333	1.0049	1.0169	1.0485
CNY	0.1526	0.1532	0.1412	0.1436	0.1490	0.1454	0.1594
EUR	1.1743	1.2228	1.1024	1.1227	1.1221	1.1455	1.2325
GBP	1.3798	1.3663	1.2455	1.3268	1.3043	1.2760	1.4011
HKD	0.1286	0.1290	0.1290	0.1284	0.1274	0.1277	0.1274
INR	0.0137	0.0137	0.0133	0.0140	0.0144	0.0144	0.0154
IDR	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
JPY	0.0090	0.0097	0.0093	0.0092	0.0090	0.0091	0.0094
KRW	0.0009	0.0009	0.0008	0.0009	0.0009	0.0009	0.0009
MYR	0.2414	0.2486	0.2318	0.2445	0.2449	0.2419	0.2588
SGD	0.7439	0.7566	0.7034	0.7437	0.7320	0.7340	0.7627
THB	0.0320	0.0333	0.0306	0.0336	0.0315	0.0309	0.0320
TWD	0.0351	0.0356	0.0331	0.0334	0.0324	0.0327	0.0344
VND*	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
USD	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

\* The exchange rate for the Vietnamese Dong is per 10,000 USD. The exchange rate of VND per USD as at 31 March 2021 is 0.0000433773.

Source: <https://www.xe.com>.



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