MILLIMAN REPORT

2019 embedded value results: Asia

The pre-COVID-19 situation

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Table of Contents

Opening remarks

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

Asia's economic growth remained strong in 2019, helping several of the region's emerging markets report positive percentage rises in EV results for the year. The Asian equity markets were somewhat volatile during 2019, followed by significant declines in the early months of 2020 due to the COVID-19 pandemic.

The EV results provided in this report either have a valuation date of 31 December 2019 or 31 March 2020. COVID-19 pandemic was typically in its nascent stages around these dates; even in China which uses a 31 December financial year-end. Given this, the 2019 EV results either do not allow for the impact of the COVID-19 pandemic or only partially allow for it. The results, however, act as a useful starting point for analysing the effects of the pandemic, which will be partially reflected in insurers' H1 2020 EV disclosures and are expected to show up to a greater extent in the 2020 year-end EV results.

Our report compares and contrasts the various different approaches taken to EV reporting across Asian markets and insurers. A subsequent report containing commentary on the reported mid-year 2020 EV results, as well as any 2019 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 December 2020.

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

Best regards,

Paul Sinnott
Michael Daly
Richard Holloway
Wing Wong
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Executive summary

BACKGROUND

Asia's economic performance continues to be strong, with 5.5% gross domestic product (GDP[1]) growth recorded for 2019, compared with the overall global GDP growth of 2.9%. Vietnam, China and the Philippines posted the highest 2019 GDP growth rates of 7.0%, 6.1% and 5.9%, respectively.

Total gross written premium[2] (GWP) for the markets covered in our report increased by an estimated 4% in 2019. China reported the largest increase in GWP of approximately USD 60 billion, while Japan recorded a fall in GWP.

Capital regulations continue to evolve throughout Asia. Insurers in China are performing quantitative impact studies for Phase II of China Risk Oriented Solvency System (C-ROSS2), and the regulator is likely to publish the rules later this year, with full implementation scheduled for 2021.

In Hong Kong, the Insurance Authority (IA) is also in the process of developing a new risk-based capital (RBC) framework for the industry. The IA has completed three quantitative impact studies (QIS), and is now finalising the rules for Pillar 1 capital requirements. A consultation process will continue until the middle of 2021, followed by the proposed submission of a legislative proposal, and the introduction of an amendment bill to the Legislative Council in 2022-2023. The target effective date is currently expected to be 2024, with the first pro-forma report position as at 31 December 2023, while Group-wide Supervision framework is expected to be enacted during 2020.

In Thailand, the revised 'RBC2' framework has been implemented effective from 31 December 2019. In February 2020, the Monetary Authority of Singapore (MAS) issued revised legislation to formalise the implementation of the enhanced Risk-Based Capital 2 (Singapore RBC 2) framework effective 31 March 2020.

In Japan, the Financial Services Agency (FSA) continues to work on the introduction of an economic value-based solvency regime, and has recently published an expert panel report on the proposed new rules, as well as a brief update on the 2019 FSA Field Test results.

The International Association of Insurance Supervisors (IAIS) is working on the development of the International Capital Standard (ICS), with an objective of creating a common language for supervisory discussions of group solvency to enhance global convergence among group capital standards. Effective from January 2020, the ICS entered a five-year monitoring period (ICS Version 2.0). The feedback received during the monitoring period will be used to further improve the ICS.

The EV methodologies used in the region remain varied, including Traditional Embedded Value (TEV), European Embedded Value (EEV), Market-Consistent Embedded Value (MCEV[3]) and Indian Embedded Value (IEV). As mentioned in our 2018 year-end EV report, the number of European multinational corporations (MNCs) reporting EV has reduced, 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. In contrast, all insurers in Japan adopt MCEV or a Market-Consistent EEV (MC-EEV) approach. In India, almost all companies[4] 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 2019, is the only company that still reports on a TEV basis.

[1] Real GDP. Sourced from the International Monetary Fund (IMF).

[2] Milliman has estimated market growth rates because not all Asian economies have reported their 2019 total GWPs as at the date of publication of this report. A more precise update will be presented in our report '2019 Mid-Year Embedded Value Results – Asia.' The GWP figures are estimated in USD terms.

[3] The MCEV principles are a copyright of the Stichting CFO Forum Foundation 2008.

[4] Companies covered under this report only.

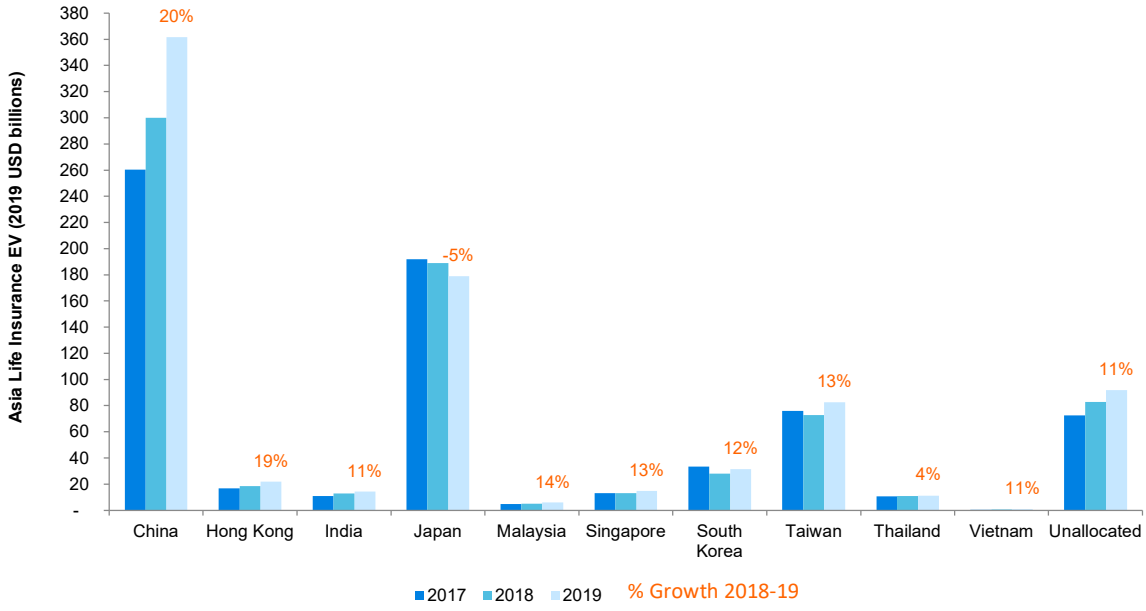
EV RESULTS

This report examines the EV results published by MNCs and domestic insurers within Asia[5].

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 2017, 2018 and 2019 EV results for Asia.

In 2019, total reported Asian EV grew by 11.1% on a comparable basis[6] to USD 816 billion, up from USD 734 billion in 2018. The companies reporting the largest Asian EV at the 2019 year-end continue to be China Life, Ping An Life and AIA, at USD 135 billion, USD 109 billion and USD 62 billion, respectively.

FIGURE 1: COMPARABLE ASIAN LIFE INSURANCE COVERED EV BY MARKET,[7] [8] 2017 TO 2019



China reported the highest comparable EV growth in 2019 of 20%, followed by Hong Kong at 19%. However, it should be recognised that Hong Kong's EV results are only based on one data point, AIA Hong Kong. China and Hong Kong lead growth in the Asia region. In China, the increased focus on protection business has helped drive positive EV growth. Hong Kong's results were particularly impressive given the widespread protests from June 2019 onwards resulting in business disruptions and the drop in numbers of mainland Chinese visitors, who have typically been the target market for insurers.

It should be noted that the impact of the COVID-19 pandemic has not been reflected in the 2019 results for the majority of the insurers covered in this report as the financial year-end for their respective markets fell on 31 December 2019. Even for those markets with 31 March 2020 financial year-ends, the economic and operational effects of the COVID-19 pandemic were typically in their early stages at the end of March 2020.

[5] For the avoidance of doubt, Asia does not include Australia or New Zealand.

[6] Comparable basis = comparing only companies that have reported 2017, 2018 and 2019 EV results for Asia.

[7] Results for all years have been converted to USD using the prevailing foreign exchange (FX) rate as at the 2019 reporting date to provide comparability and eliminate FX effects.

[8] Unallocated indicates EV figures that are reported by insurers to relate to their Asian operations, but have not been allocated to specific countries.

FIGURE 2: COMPARABLE[9] ASIAN LIFE INSURANCE COVERED ADJUSTED NET WORTH (ANW), 2017 TO 2019

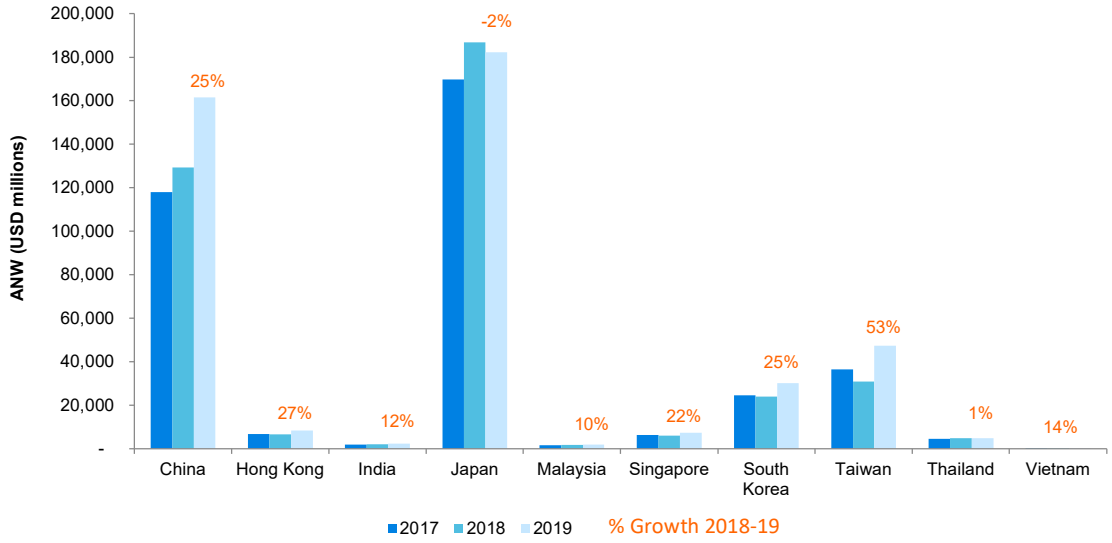
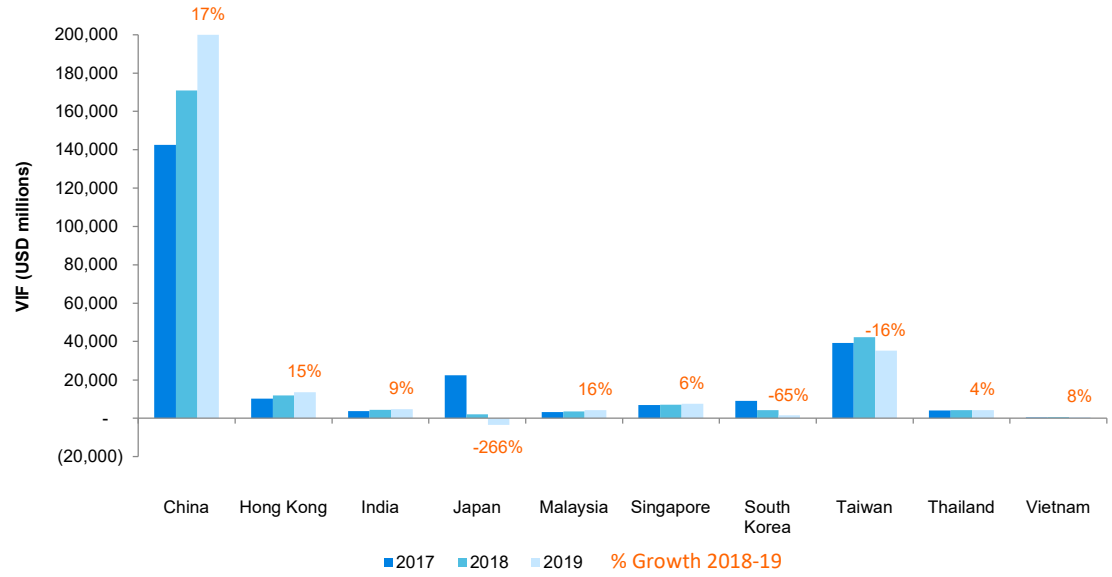


FIGURE 3: COMPARABLE[10] ASIAN LIFE INSURANCE COVERED VALUE OF IN-FORCE (VIF), 2017 TO 2019



Growth in ANW was positive for all markets except Japan in financial year (FY) 2019. Taiwan posted the largest percentage growth of 53% in ANW, followed by Hong Kong at 27%, while Japan reported a fall of 2% in ANW mainly driven by a decrease in unrealised gains on domestic securities.

VIF growth was positive for almost all markets except for Japan, South Korea and Taiwan. Insurers in Taiwan continued to cite reduced investment return assumptions as the main reason for their declining VIF results. In South Korea, only Samsung Life disclosed VIF results for 2019 and attributed the fall in investment rate assumptions and a change in operating assumptions as the main causes for declining VIF. The decline in Japan can be attributed to lower/negative risk-free rates, making it challenging for insurers to meet the guarantees embedded in traditional products.

[9] Comparable basis = comparing only companies that have reported 2017, 2018 and 2019 EV results for Asia. Insurers that have not yet published their 2019 results as at the data cutoff date include Exide Life, PNB MetLife, Reliance Nippon Life, Meiji Yasuda Life, Samsung Fire & Marine and Hanwha Life.

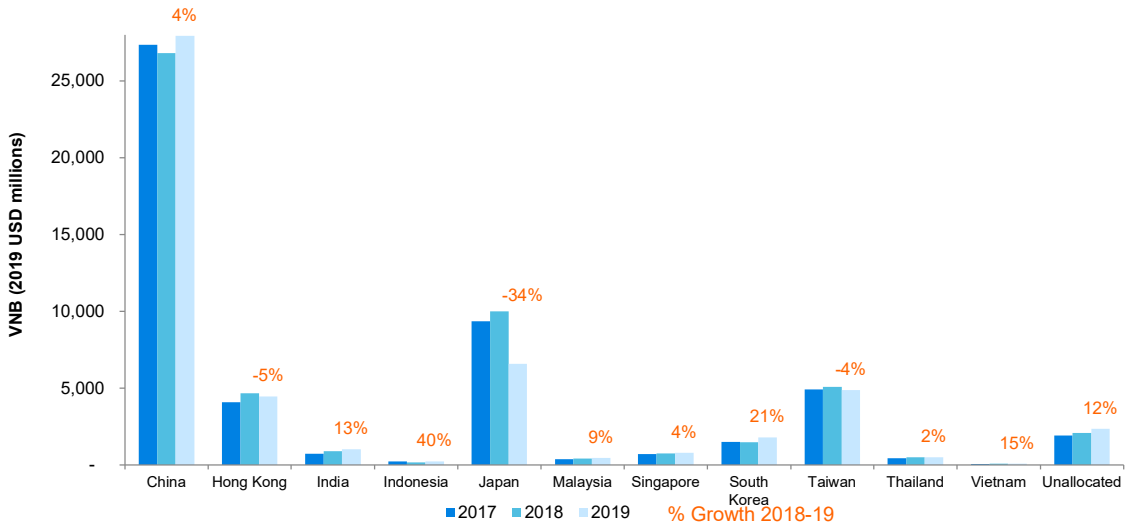
[10] Ibid.

A certain amount of caution must be exercised when evaluating Japanese company embedded values, 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 often 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.

NEW BUSINESS RESULTS

Total reported value of new business (VNB) for Asia stood at USD 51.1 billion in 2019, compared to USD 52.9 billion in 2018, representing a fall of 3.6%[11].

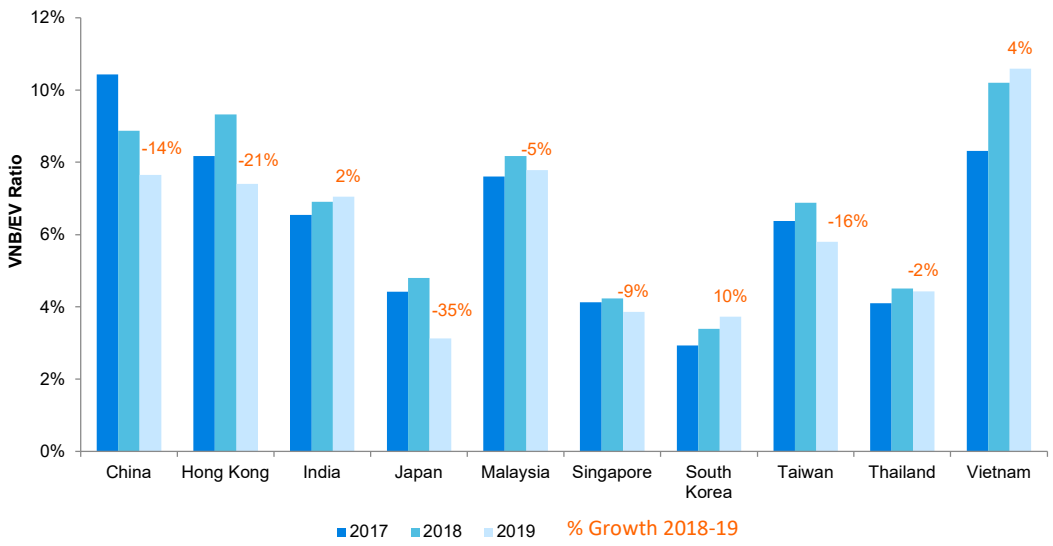
FIGURE 4: COMPARABLE ASIAN LIFE INSURANCE COVERED VNB BY MARKET, 2017 TO 2019



Growth in VNB was varied in FY 2019 across Asia, with Indonesia reporting the highest VNB growth of 40% in 2019 on a constant currency basis. However, it should be recognised that it is only based on one data point, Prudential Indonesia, which attributed the rise in new business profits to broadening of its product offering. Japan witnessed the largest drop in VNB, reporting a fall of 34% in 2019. Many insurers suffered from both declining sales and declining margins on savings products. The significant decline in new business sales volumes was mainly due to the temporary suspension of the sale of tax-incentivised Corporate Owned Life Insurance (COLI) products following a change in regulations. Furthermore, the declining global interest rate trend made it challenging for life insurers to offer a meaningful return on foreign currency denominated products, resulting in diminished sales. Hong Kong and Taiwan experienced VNB declines of 5% and 4%, respectively, in 2019. Taiwan's result can be mainly attributed to the significant reduction in VNB of approximately 32%, as reported by Cathay Life, driven by a decrease of more than 50bps in investment return assumptions. All other listed insurers in Taiwan reported an increase in VNB. For further details on each market, please refer to the 'Detailed Market Analysis' section of this report below.

[11] On a comparable basis.

FIGURE 5: VNB/EV RATIO[12], 2017 TO 2019



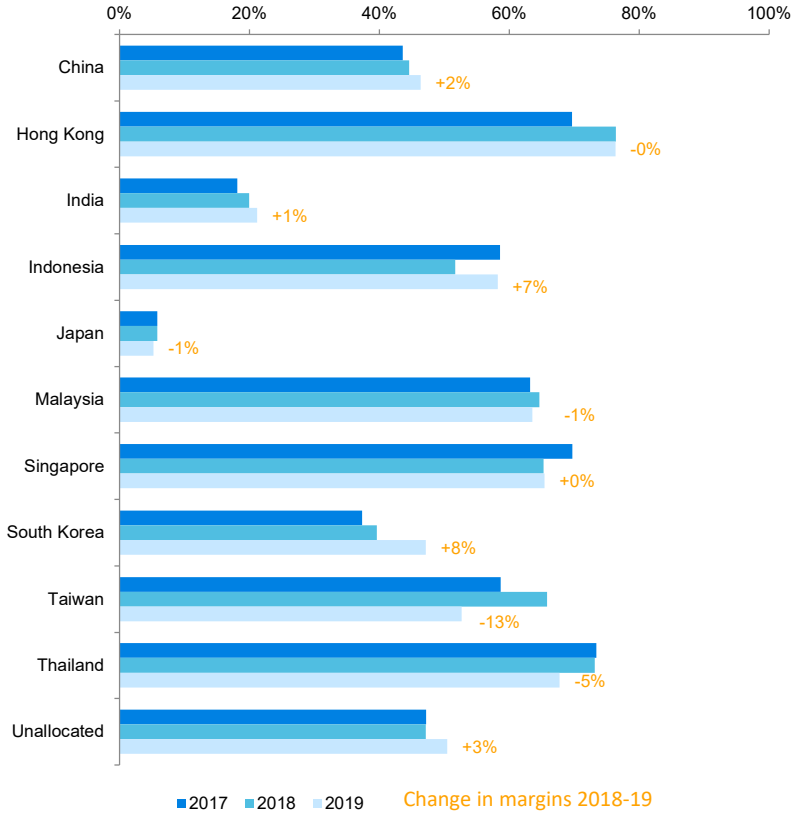
Except for India, South Korea and Vietnam, all markets saw a fall in VNB/EV ratio over the past year.

South Korea witnessed the highest increase in VNB/EV ratio in 2019, primarily as a result of strong new business sales on an annual premium equivalent (APE) basis and lower growth in EV. The fall in VNB/EV ratio for China and Singapore is due to a greater rise in EV compared to a smaller increase in VNB. The drop in VNB/EV ratio for Hong Kong and Taiwan is primarily driven by a reduction in VNB.

[12] 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[13] [14] BY MARKET, 2017-2019



Based on the EV disclosures available, Indonesia and South Korea exhibited the highest growth in new business margins in the region, with Taiwan and Thailand posting a significant drop in new business margins in 2019. It is important to note that the new business margin for Indonesia was only based on one data point, Prudential Indonesia, who cited the broadening of its product offering as the reason for higher new business profitability. The company launched several successful new and upgraded products including some very successful protection products. South Korean insurers typically cited shifts in product mix towards more protection business as the main driver for increase in VNB margins in 2019. The VNB margin growth in India was driven largely by the continued focus on selling higher volumes of protection business.

[13] 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, Max Life, Bajaj Allianz Life, Kotak Life and SBI Life);South Korea (Hanwha Life and Samsung Life); Malaysia (AIA and Hong Leong Assurance); Singapore (AIA); Taiwan (Prudential plc, Cathay Life, China Life TW, Mercuries Life, Shin Kong Life, Taiwan Life and Fubon Life); Thailand (AIA); Indonesia (Prudential plc); Vietnam (Dai-ichi Life Vietnam).

[14] Japan is excluded from this analysis as Japanese insurers do not disclose APE numbers. Instead, they disclose Present Value of New Business Premiums (PVNBP). Figure 58 below compares new business margins calculated using PVNBP numbers for Japanese insurers and is included in the Japan section of '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
Risk discount rate (RDR)	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. The majority of companies operating within markets typically have a tight range of assumed risk margins, but exceptions do exist. Taiwan is an outlier market, where the differences between the lowest and highest risk margins is 805 bps.
Investment return assumptions	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. 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).
Cost of guarantees	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.
Expense overruns	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.
Cost of capital	Insurers need to make assumptions on the future level of required solvency margin 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 160% of RBC whereas AIA Singapore uses 180%. In most markets, the solvency margin 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[15].

[15] 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	**Foreign direct investment**	China's Banking and Insurance Regulatory Commission (CBIRC) revised regulation pertaining to foreign investment in insurance sector. Effective from 1 January 2020, restrictions on the stake of foreign investors in life insurance joint ventures were lifted, and the foreign shareholding can now reach 100%. This development is part of CBIRC's agenda of opening up the market's insurance sector to overseas investors/players.
	Credit and guarantee insurance	A new regulation on credit and guarantee insurance, issued by the CBIRC on 19 May 2020, tightens requirements on insurers' capital and operations, which would help reduce the risk of significant losses from default to insurers in the global economic downturn amid the coronavirus pandemic.
Hong Kong	**RBC regime**	The IA is in the process of developing a new RBC framework. The regulator has completed three QIS and is now finalising the rules on Pillar 1 capital requirements. A consultation process is ongoing until H1 2021, followed by the proposed submission of a legislative proposal in 2021, and the introduction of an amendment bill to the Legislative Council in 2022-2023. The target effective date is currently expected to be 2024, with the first pro-forma report position as at 31 December 2023, while Group-wide Supervision framework is expected to be enacted during 2020.
	Enterprise Risk Management (ERM)	The IA has finalised the rules on Pillar 2 requirements and introduced Guideline 21 (GL21) – Guideline on ERM, which is effective from 1 January 2020. The first Own Risk and Solvency Assessment (ORSA) report is required to be submitted to the IA for financial year ending on or after 31 December 2020, within six months of the valuation date.
	Insurance Authority's restructurings	After the IA took over from the three self-regulatory organisations (SROs), it has circulated consultation papers and formulated rules, guidelines and new codes of conduct for insurance brokers and agents. In addition to this, the IA decided to delegate its inspection and investigation powers pertaining insurance-related businesses of authorised institutions (AIs) to the Monetary Authority (MA), with a view to improve efficiency and minimise possible regulatory overlap.
	Proposed tax measures by the FSDC	The Financial Services Development Council (FSDC) has proposed several tax measures (e.g., tax exemption on interest income from all fixed income of insurance funds, tax deduction for the increase in statutory reserves required by the regulator, etc.) for both insurance companies and individual policyholders.
	Insurance (Amendment) Bill 2020	With the aim to reinforce Hong Kong as an international financial centre, Hong Kong government gazetted the Insurance (Amendment) Bill 2020 and the Insurance (Amendment) (No.2) Bill 2020 in March 2020. The Insurance (Amendment) Bill 2020 provides a new regulatory regime for the issuances of insurance-linked securities business through the formation of special purpose insurers and expands the scope of insurable risks for captive insurers set up in Hong Kong. The Insurance (Amendment) (No.2) Bill 2020 introduces the formation of a consolidated and clear legal basis for the IA to exercise direct regulatory power over the holding companies of multinational insurance groups incorporated in Hong Kong, ensuring that Hong Kong's insurance regulatory system aligns with international standards.
Indonesia	**Foreign ownership**	A new government regulation has removed the requirement to have Indonesian nationals or entities fully owned by Indonesian nationals contribute at least 20% of the increase in issued share capital. As a result, foreign shareholders can acquire a shareholding of above 80% when an insurance company increases its issued share capital. However, the foreign shareholders cannot exceed the existing percentage of foreign ownership when increasing share capital.
	Syariah companies[16]	The shareholding cap applicable to the new standalone Syariah companies, which are spun-off from a Syariah company will follow the foreign ownership cap of its parent company. This means that, where applicable, a spun-off company will be able to benefit from the same exemption from the 80% foreign ownership cap as its parent company.

[16] 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
Japan	**RBC regime**	The FSA is working on the introduction of an economic value-based solvency regime. The FSA has recently published an expert panel report of the proposed new rules, as well as a brief update on the 2019 FSA Field Test results. The industry capital adequacy ratio (CAR) for life insurance companies increased from 141% as at March 2018 (2018 FSA Field Test) to 178% as at March 2019.
Malaysia	**Product guidelines**	The insurance regulator introduced Minimum Allocation Rates and strengthened disclosure requirements for policyholder illustrations for investment-linked products, in order to improve business conduct and protect policyholders.
	RBC framework	As part of the review of the overall capital adequacy framework, the regulator has issued an Exposure Draft on the 'Valuation of Insurance and Takaful Liabilities', which sets out proposed enhancements on the valuation of insurance and Takaful liabilities.
	Takaful products	A revised 'Takaful Operational Framework' was issued in June 2019. The revisions seek to strengthen Takaful fund management practices, and spur greater innovation in Takaful products while further safeguarding Takaful participants.
Philippines	**Minimum capital requirement**	The Insurance Commission (IC) has issued a stern warning to all life and non-life insurance companies that a cease-and-desist order shall be issued against them should they fail to comply with the minimum net worth and minimum capital investment requirement by the regulator's deadline.
Singapore	**RBC regime**	In February 2020, the MAS issued revised legislations that formalised the implementation of the enhanced Singapore RBC 2 framework effective 31 March 2020. The key changes from the existing RBC framework include more comprehensive risk requirements (e.g., the introduction of insurance catastrophe and operational risk), removal of the long term risk free discount rate (LTRFDR) used to discount liabilities, introduction of ultimate forward rate (UFR), allowance for matching adjustment, and allowance for diversification of risk requirements, among others.
South Korea	**IFRS17 Implementation**	The regulator has delayed the implementation of IFRS 17 for one year, i.e., until 1 January 2023.
	Financial Soundness Reserves	The Financial Services Commission (FSC) has asked insurers to establish additional 'financial soundness reserves' in respect of liability, government bond yields, cumulative earnings surplus or net profits of insurance companies, in accordance with Article 6-11-2. For more information, please refer to the South Korea section in the 'Detailed Market Analysis' section of this report below.
Taiwan	**IFRS17**	Given that the international implementation of IFRS17 has been postponed to 2023, the regulator postponed the IFRS 17 implementation date by one year, to January 2026.
	New investment regulation for investment-linked products	Insurers have been barred from investing policyholder funds under investment-linked products in bonds rated below Baa1 from Moody's or equivalent ratings from other rating agencies.
Thailand	**RBC regime**	The revised RBC framework, known as 'RBC2,' has replaced the old framework, 'RBC1,' effective from year-end 2019. The key changes under the new framework include: • the valuation of policy loans • revised provision for adverse deviation • recalibration of risk charge parameters • introduction of operation risk The initial implementation of RBC2 is at the 95% confidence interval level, with most industry players not significantly affected by this change.
	Developments by the Office of Insurance Commissioner (OIC)	In response to the continuing reduction in interest rates and fixed interest yields, the regulator has lowered the minimum pricing interest rate from 2% to 1%.

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.

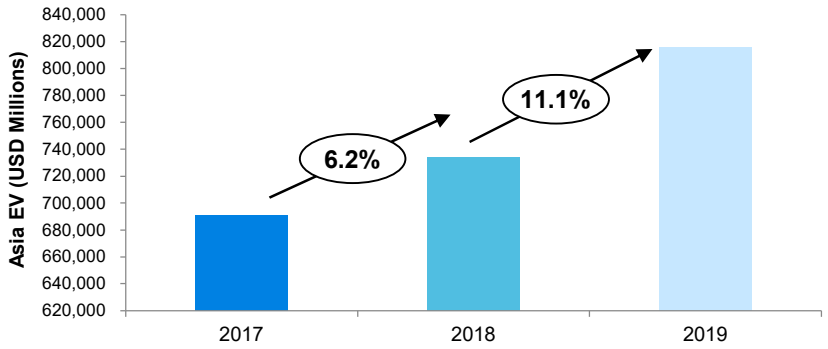
FIGURE 9: SUMMARY OF RECENT MEASURES RELATED TO COVID-19 BY JURISDICTION

JURISDICTION	DESCRIPTION
China	In February 2020, CBIRC allowed the release of actuarial provisions to further improve the insurance regulatory system in light of the COVID-19 pandemic.
Hong Kong	In view of the COVID-19 pandemic, the IA has announced temporary facilitative measures (TFM) that allow insurers and intermediaries to distribute certain types of life insurance products through non-face-to-face methods to minimise the risk of infection during the selling process, with immediate effect. The TFM are now extended until 30 September 2020 from their earlier set expiry date of 30 June 2020.
India	In view of the emerging adverse market conditions due to the impact of the COVID-19 pandemic, and to conserve capital to protect policyholders' interests, the regulator has directed insurers to refrain from paying dividends to their shareholders until further notice. Milliman has published an e-Alert on the challenges faced by the Indian life insurers resulting from the COVID-19 impact on capital markets, interest rates and adverse business outlook. The e-Alert is available here.
Indonesia	In light of the COVID-19 outbreak, the regulator has relaxed the requirements for allowable assets for solvency calculations.
Singapore	The regulator has introduced a transitional measure in response to the pandemic. Under the transitional measure, the difference between SGD-denominated liabilities derived using the previous RBC risk free discount rate (where LTRFDR applies) and those derived using the RBC2 risk free discount rates will be recognized as a financial resource adjustment (effectively increasing the capital available to meet risk requirement). The financial resource adjustment decreases proportionally until the end of 2021.
Thailand	The Thai insurance regulator has also provided several temporary relief measures in response to the COVID-19 pandemic, which include extending the grace period for premium payment and policy loan payment, and giving companies the option to cut interest rates on policy loans during the relief period.

Introduction and background

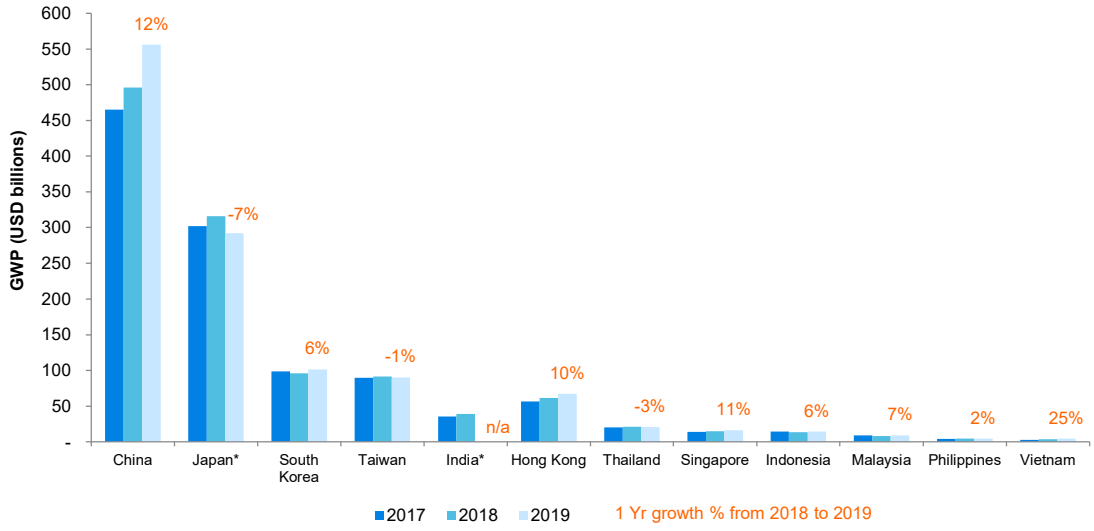
The overall Asian EV results for 2019 show continued growth at an increasing rate from recent years. Comparing only insurers that have reported 2017 to 2019 EV figures[17], Asian life insurance EV[18] grew by 11.1% in 2019.

FIGURE 10: REPORTED COMPARABLE ASIA LIFE INSURANCE COVERED EV, 2017-2019



Overall GWP increased on a USD basis (see Figure 11), with APE and new business margins also continuing to rise in most markets (see individual market sections below), helping to fuel the growth in EV. While insurance penetration (see Figure 12) decrease for most markets, it increased slightly in others (e.g., Hong Kong, Malaysia, India, China). Household income growth continued to increase in USD terms for all the markets (see Figure 13). Many Asian equity markets experienced high volatility during 2019, with the Indian stock market recording the strongest equity gains across Asia (see Figure 14).

FIGURE 11: LIFE INSURANCE GROSS WRITTEN PREMIUMS IN ASIA[19] [20]



* FY2019 GWP for India was unavailable during the production of this report

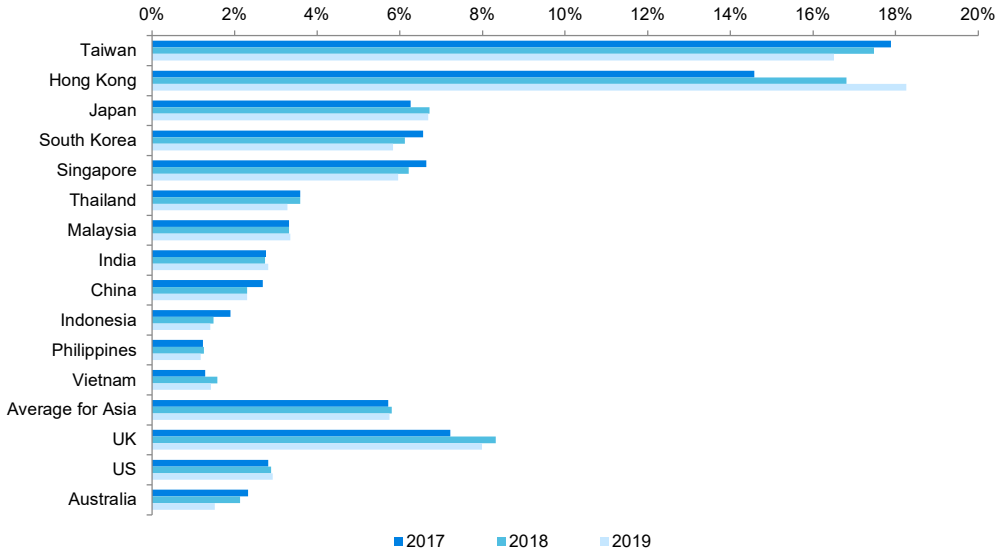
[17] Companies that have not yet disclosed their 2019 EV results have also been excluded in order to provide an appropriate year-to-year comparison. To provide comparability, the EV figures for this chart have been calculated on a constant currency basis, using the FX rate as at each company's 2019 reporting date.

[18] 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.

[19] Sources: Various life insurance associations and insurance regulators.

[20] GWP for Philippines is based on submitted unaudited quarterly statistics.

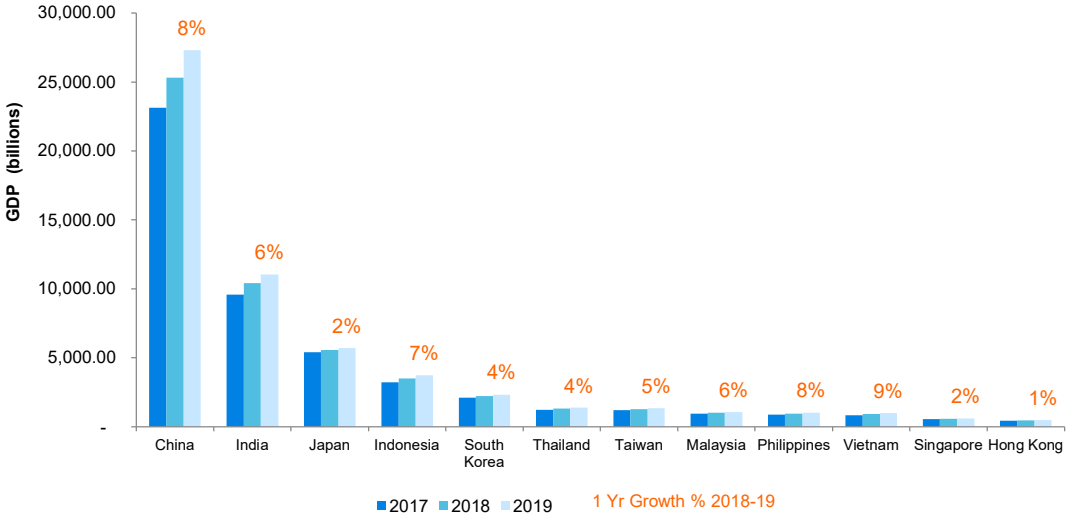
FIGURE 12: ASIAN LIFE INSURANCE PENETRATION[21] [22] 2017-19, % OF GDP[23]



There was a decrease in insurance penetration of about five basis points over the past year. While insurance penetration decreased marginally in most markets, four others posted very small increases. Hong Kong experienced the largest increase in insurance penetration.

Overall GWP for the markets covered under this report increased on a US dollar basis, driven by rising premiums in China, South Korea and Hong Kong. In the near to medium term, China, Japan, South Korea and Taiwan are likely to remain the largest life insurance markets in Asia by GWP, reflecting their large populations, high GDP per capita and high insurance penetration.

FIGURE 13: GDP (PURCHASING POWER PARITY)[24] OF IN-SCOPE ASIAN MARKETS, 2018-2019



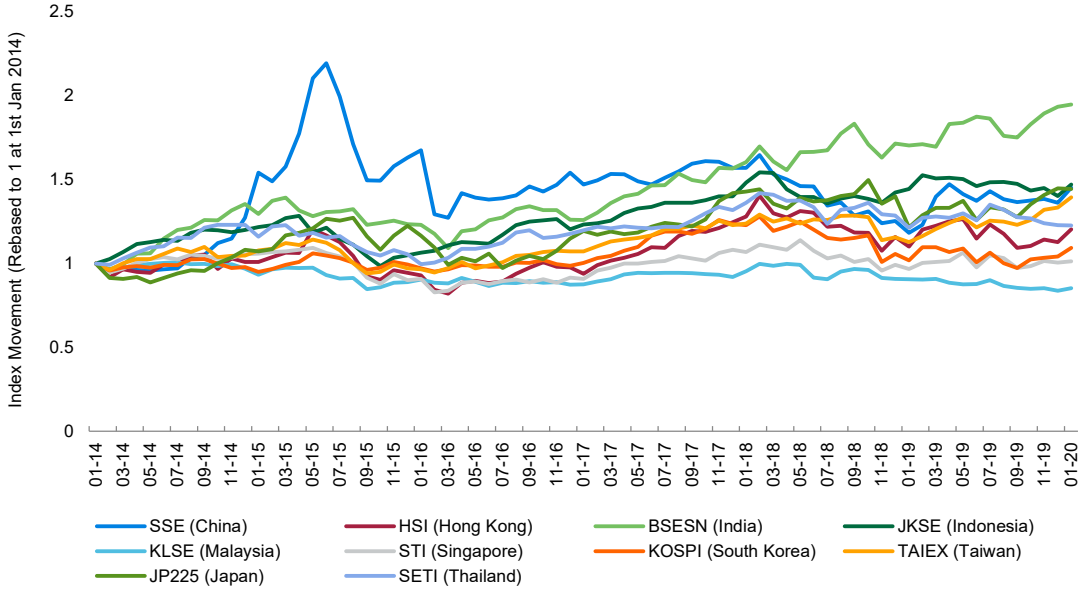
[21] It should be noted that Hong Kong life insurance penetration figures are likely to be distorted by large volumes of business being sold to mainland Chinese visitors.

[22] Note that we have revised the 'Average for Asia' figures as the 2018 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.

[23] Source: Swiss Re Sigma.

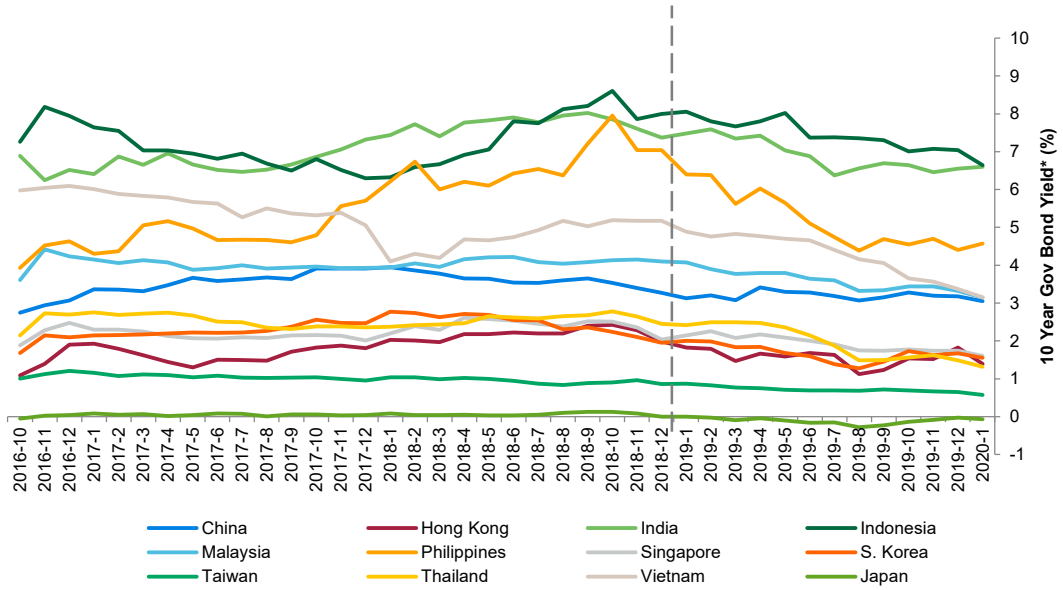
[24] Source: International Monetary Fund, World Economic Outlook Database, April 2020.

FIGURE 14: RECENT EQUITY MARKET PERFORMANCE: GROWTH OF MAJOR EQUITY INDICES[25] [26] FROM 1 JANUARY 2014 TO 31 DECEMBER 2019



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). It is worth noting that at the end of 2019, Malaysia's Kuala Lumpur Stock Exchange (KLSE) recorded the highest year-on-year decline, mainly due to US-China trade war and domestic uncertainties. Since 1 January 2020, all major indices have seen a major reduction due to the COVID-19 pandemic.

FIGURE 15: 10-YEAR SOVEREIGN BOND YIELDS,[27] 2017-2019



[25] 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 Index; Taiwan: Taiwan Weighted Index.

[26] Source: Investing.com.

[27] Source: Investing.com.

The Asian sovereign bond market yields, which closely influence the RDRs and investment return assumptions adopted by insurers, declined during 2019. The 10-year Thai government bond yield declined sharply over 2Q 2019 and 3Q 2019, with an overall drop of almost 100bps in the year, ending 2019 at 1.5%.

Amid the COVID-19 pandemic, most governments throughout the world imposed stringent containment measures, with activity in many sectors shut down completely and travel and mobility curtailed. These measures have resulted in large short-term economic disruption, with varying impacts across different markets. The bond and equity markets are expected to experience high volatility in near future. The global economy is now experiencing the deepest recession since the Great Depression in the 1930s, with GDP declines of more than 20% in many countries during lockdowns, with a surge in unemployment.[28]

On the regulatory front, RBC-type solvency frameworks are already embedded, or are in the process of being introduced or enhanced, in many Asian markets. China's C-ROSS Phase II and Hong Kong's upcoming RBC framework are in various stages of implementation, while Malaysia is reviewing its RBC framework and relevant legislations. Singapore and Thailand have implemented revised RBC2 frameworks.

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.

On 25 June, 2020, the International Accounting Standards Board (IASB) proposed amendments to IFRS17 in response to the feedback received from the shareholders on the standard. In order to ease the transition, the IASB has proposed to delay the implementation of IFRS17 to 2023. Previously, the target effective date for implementation was set as January 2021. Due to the delay in international implementation, Asian markets have also postponed their implementation dates.

In this publication, we focus on EV results as at financial year-end 2019[29]. 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.

[28] Economic Outlook for Southeast Asia, China and India 2020 (OECD Development Centre).

[29] For India and Japan, the financial year-end 2019 is 31 March 2020.

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[30].

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. The 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 take into account 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.

[30] 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[31] or Market Consistent EEV[32] (MC-EEV). 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	2	-	4
North American MNC	1	-	-	-	1
China	6	-	-	-	6
Hong Kong	1	-	-	-	1
India	1	-	9	-	10
Japan	-	-	6	10	16
South Korea	4	-	-	-	4
Taiwan	6	-	-	-	6
Thailand	1	-	-	-	1
Vietnam	1	-	-	-	1
Total	23	2	17	10	52

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.

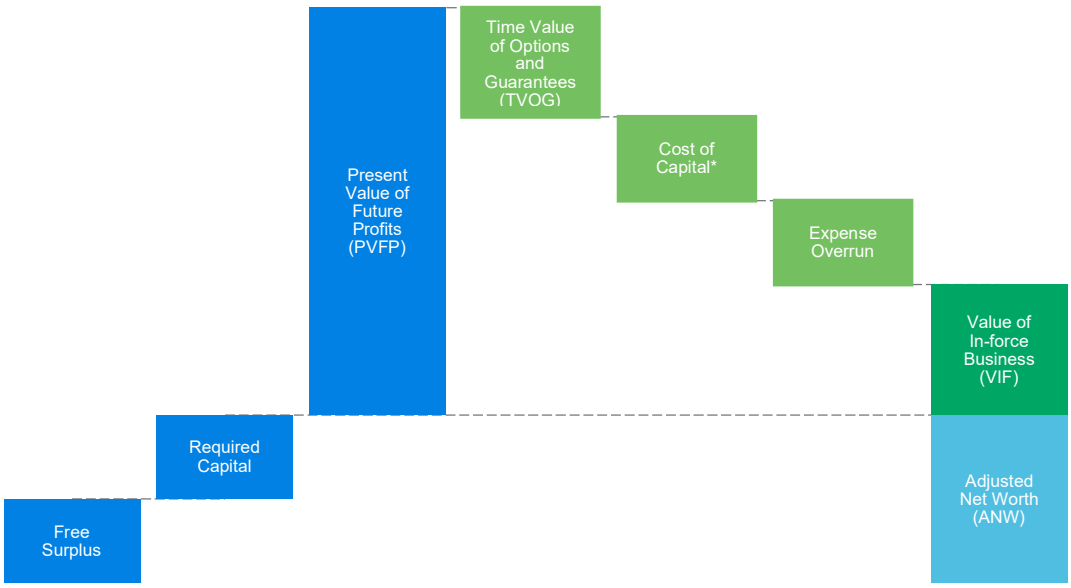
A majority of insurers in the rest of the Asia still use a TEV methodology. The prevalence of so many different EV reporting methodologies across Asia brings major challenges in comparing EV results, making a good understanding of the differences between the methodologies critical. In the next section,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

[31] Including AXA and Prudential.

[32] 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.

The **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
PVFP	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.
TVOG	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.
Cost of Capital	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.
Discount Rate	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.
Expenses	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.
Investment Returns	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

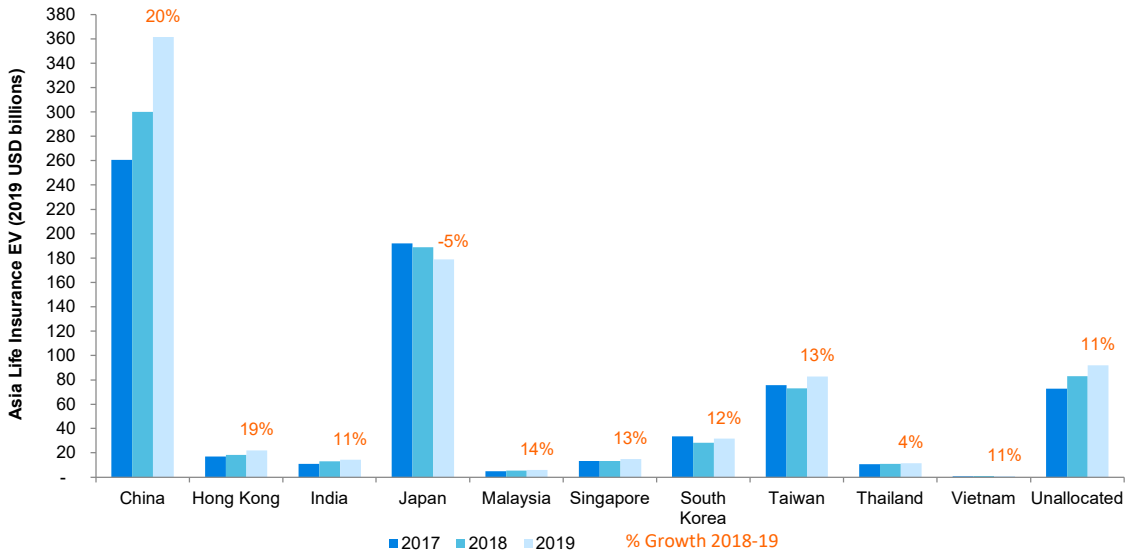
A summary of the changes in company-level disclosures in each market over the past year is provided below:

MARKET	
China	Manulife has not reported EV/VNB results for China this year.
Indonesia	Manulife has not reported EV/VNB results for Indonesia this year.
Malaysia	Hong Leong Assurance (HLA) disclosed its EV and VNB results this year.
Singapore	Manulife has not reported EV/VNB results for Singapore this year.
Thailand	Bangkok Life has not reported ANW, VIF and new business margin this year. Bangkok Life also stopped disclosing its APE numbers in 2016.
Vietnam	Manulife has not reported EV/VNB results for Vietnam this year. Dai-ichi Life has not reported APE results.
India	Max Life has not disclosed the required capital

EV IN ASIA

In 2019, reported Asian life insurance EV grew by 11.1% on a comparable basis[33] to USD 816 billion, up from USD 734 billion in 2018. The companies reporting the largest Asian EV at the 2019 year-end continue to be China Life, Ping An Life and AIA, at USD 135 billion, USD 109 billion and USD 62 billion, respectively. Figure 19 sets out the total EV growth by market (to the extent that such a breakup has been disclosed by companies).

FIGURE 19: COMPARABLE ASIAN LIFE INSURANCE COVERED EV,[34] [35] 2017 TO 2019



Besides Japan, all other Asian markets posted positive EV growth in USD terms in 2019. China reported the highest comparable EV growth in 2019 of 20%, followed by Hong Kong with 19% growth. However, it is important to note that AIA Hong Kong is currently the only company which discloses EV results in Hong Kong. All insurers in China recorded a double-digit growth in EV results in 2019, mainly due to improved investment performance and strong VNB growth, which was driven by both APE growth and improvement in VNB margins. Japan recorded a decline of 5% in EV results in 2019; with the largest companies recording a decrease in EV. This is discussed further in the respective market sections below.

It should be noted that the results in Figure 19 are based on converting results in local currency to USD using prevailing exchange rates at the same (financial year-end 2019) 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.

[33] As at the data cutoff date, some insurers have not yet disclosed their 2019 EV figures. Hence, this chart and subsequent commentary only include insurers that have a complete set of 2017, 2018 and 2019 EV figures. The results of the remaining companies will be included in our '2020 Mid-year Embedded Value Results – Asia' report. The missing companies include Exide Life, PNB MetLife, Reliance Nippon Life, Meiji Yasuda Life, Samsung Fire & Marine and Hanwha Life.

[34] To provide comparability and eliminate FX effects, results for all years have been converted to USD using the prevailing FX rate as at the 2019 reporting date.

[35] 'Unallocated' indicates EV figures that are reported by insurers to relate to their Asian operations, but have not been allocated to specific countries.

FIGURE 20: COMPARABLE ASIAN LIFE INSURANCE COVERED ANW, 2017 TO 2019

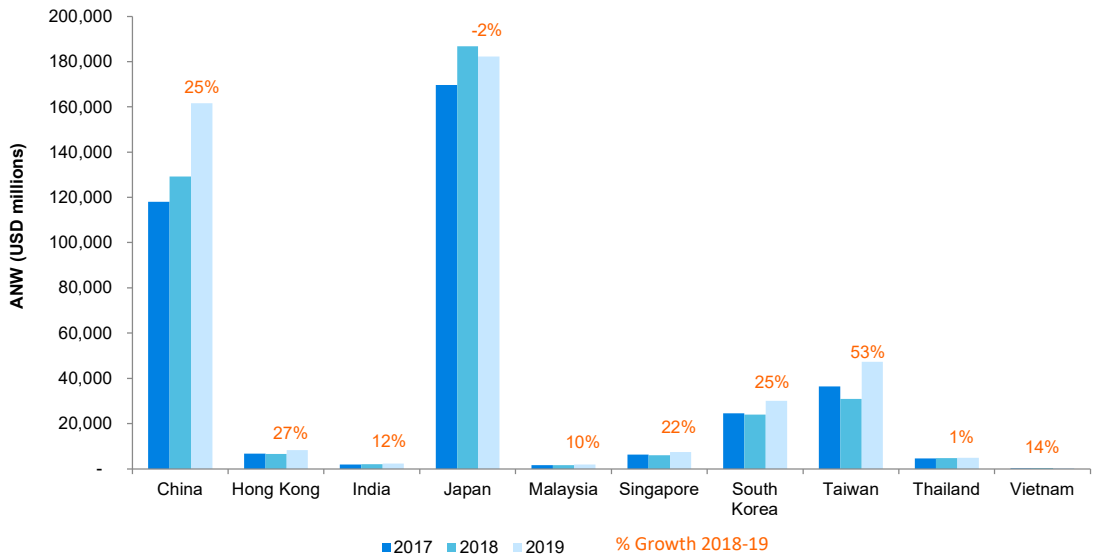
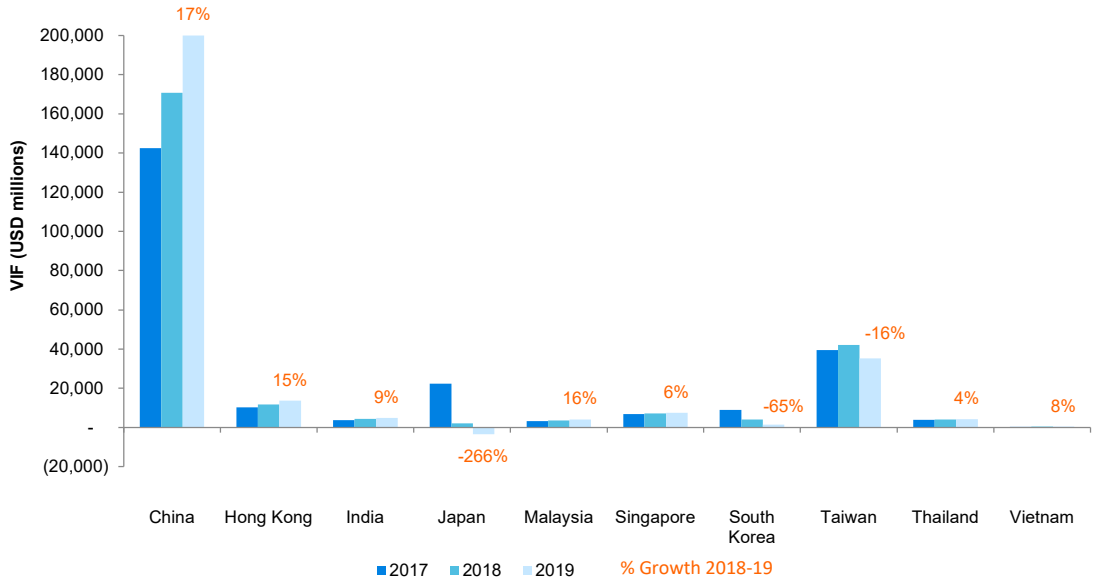


FIGURE 21: COMPARABLE ASIAN LIFE INSURANCE COVERED VIF, 2017 TO 2019

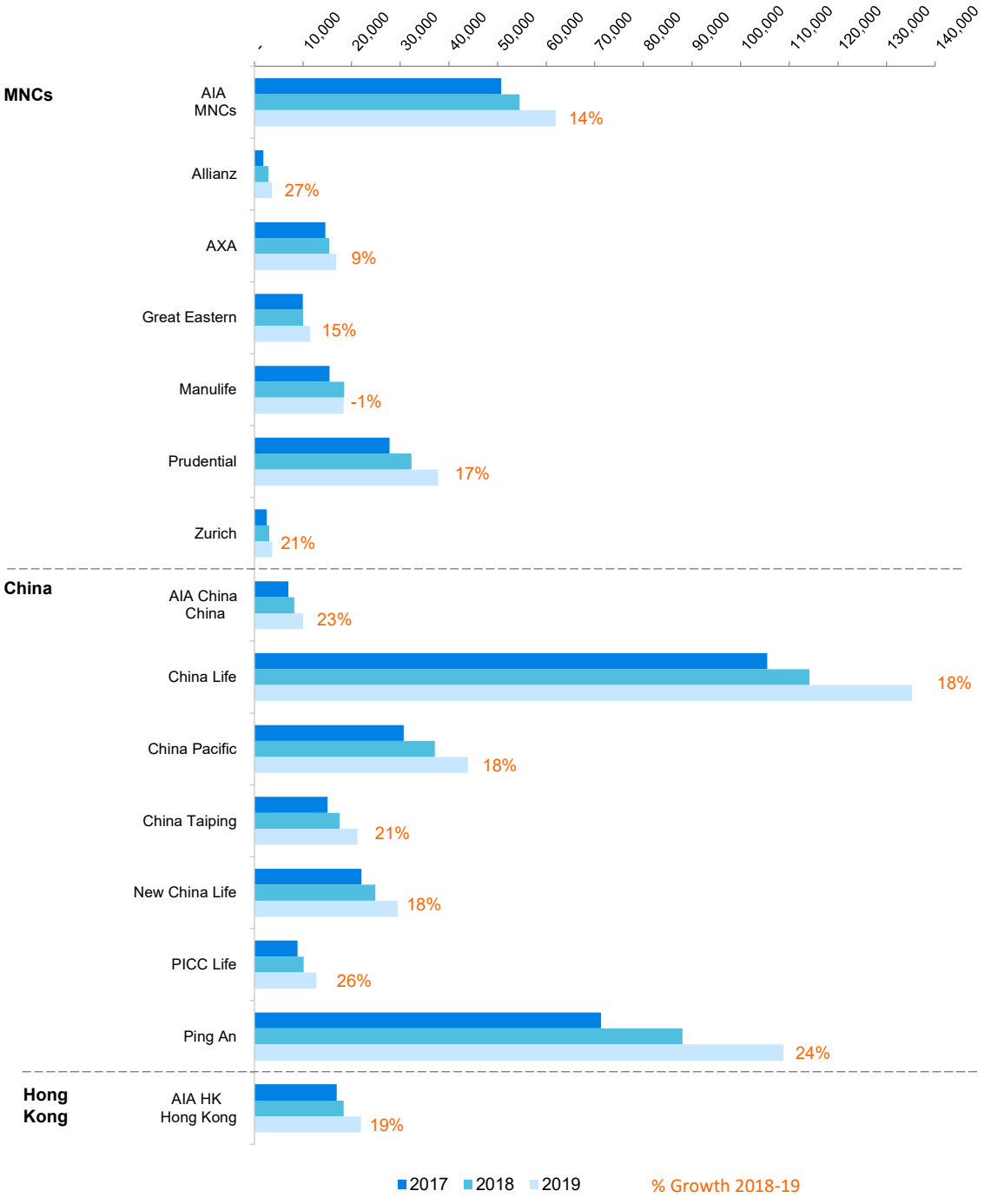


The aggregate ANW for the Asian life insurance sector increased in 2019, with only Japan reporting a fall last year. Taiwan reported the highest increase of 53% in ANW, followed by Hong Kong with a 27% growth. The ANW growth for Taiwanese insurers can be attributed to the increase in unrealised gains from financial assets and real estate. Japan reported a fall of 2% in ANW mainly driven by a decrease in unrealized gains on domestic securities.

With the exceptions of Japan, South Korea and Taiwan, VIF growth was positive for all markets. China recorded the highest increase of 17% in 2019, followed by Malaysia with a 16% growth. Japan recorded the greatest fall in VIF of 266% in 2019, where the total life insurance sector VIF, on a comparable basis, turned negative in 2019. Taiwan also saw a decline in VIF of 16% in 2019, driven mainly from reduced investment return assumptions for all insurers. In South Korea, Samsung Life was the only company which disclosed VIF results in 2019. The company recorded a 65% fall in VIF, citing fall in investment rate assumptions and a change in operating assumptions as the main causes. The decline in Japan can be attributed to lower/negative risk-free rates, making it challenging for insurers to meet the guarantees embedded in traditional products.

EV BY COMPANY

FIGURE 22: ASIAN LIFE INSURANCE COVERED BUSINESS EV BY COMPANY,[36] [37] [38] 2017 TO 2019



[36] To provide comparability and eliminate FX effects, results for all years have been converted to USD using the prevailing FX rate as at the 2019 reporting date.

[37] Please note that some companies have not yet disclosed their 2019 EV results as at the data cutoff date of this report. The 2019 results for these companies have consequently been left blank. The insurers that have not yet published their 2019 results as at the data cutoff date include Exide Life, PNB MetLife, Reliance Nippon Life, Meiji Yasuda Life, Samsung Fire & Marine and Hanwha Life.

[38] 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, 2017 TO 2019 (CONTINUED)

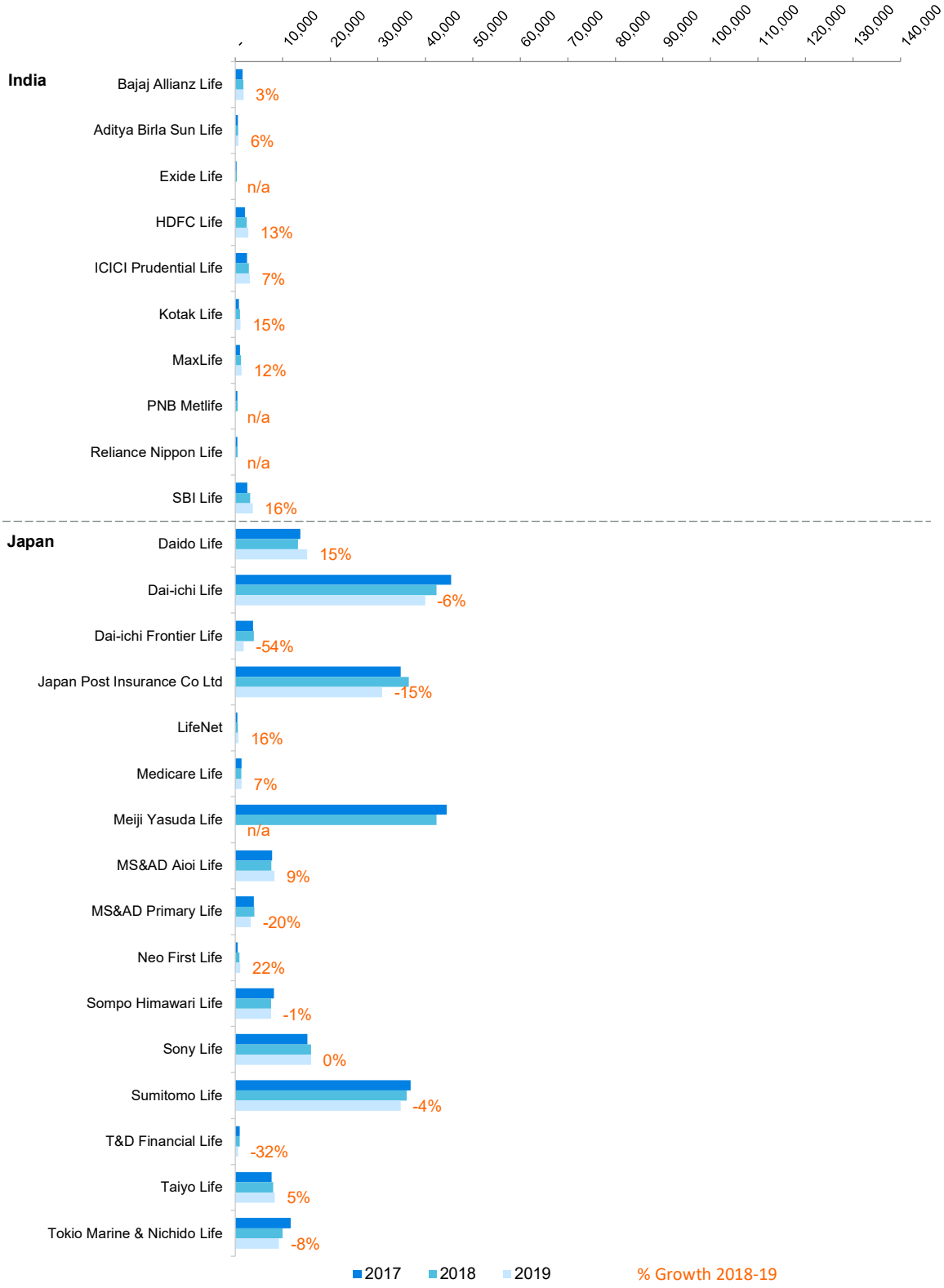


FIGURE 22: ASIAN LIFE INSURANCE COVERED BUSINESS EV BY COMPANY, 2017 TO 2019 (CONTINUED)

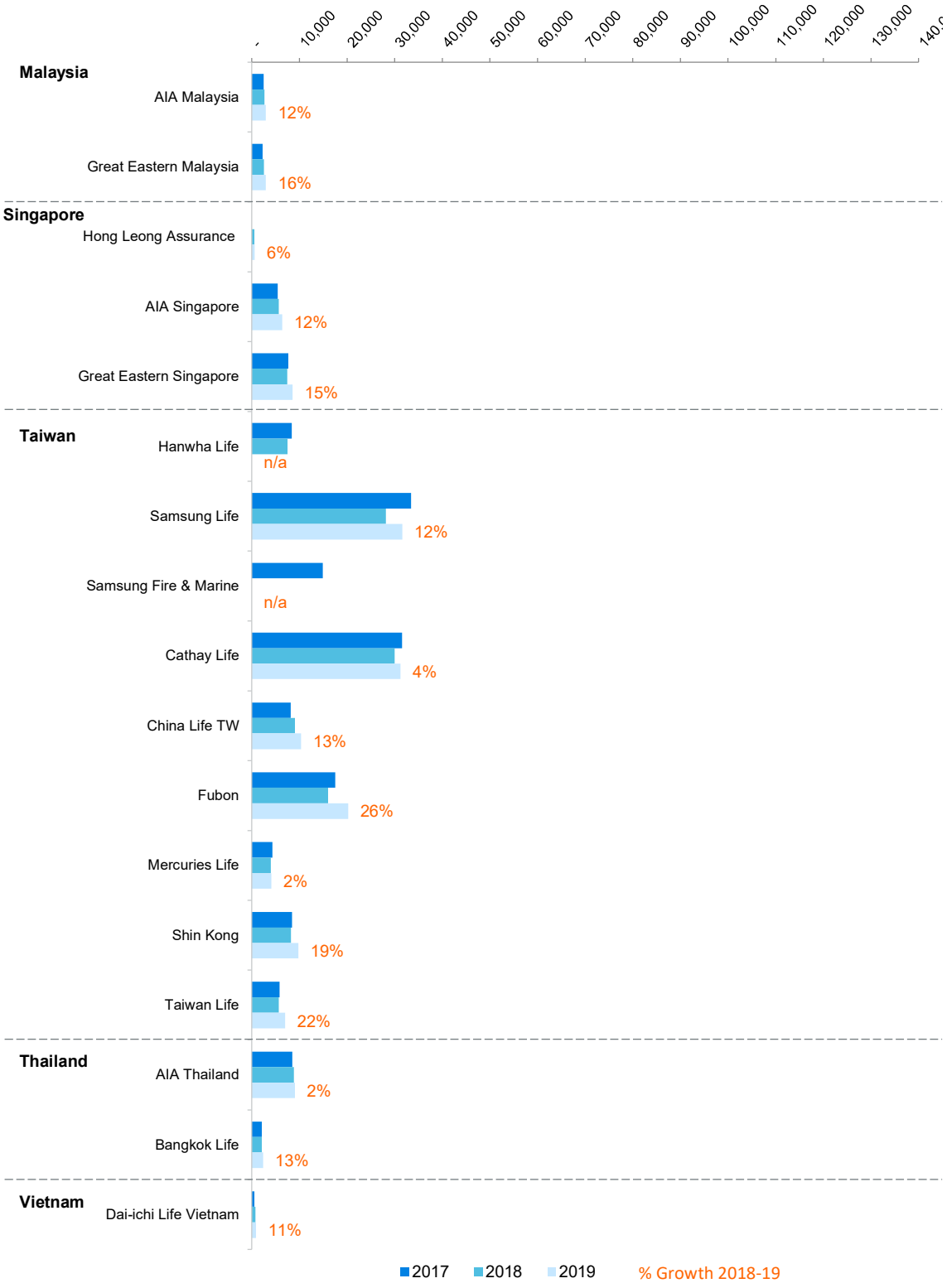


FIGURE 23: SPLIT OF 2019 ASIAN LIFE INSURANCE EV BETWEEN VIF AND ANW BY COMPANY

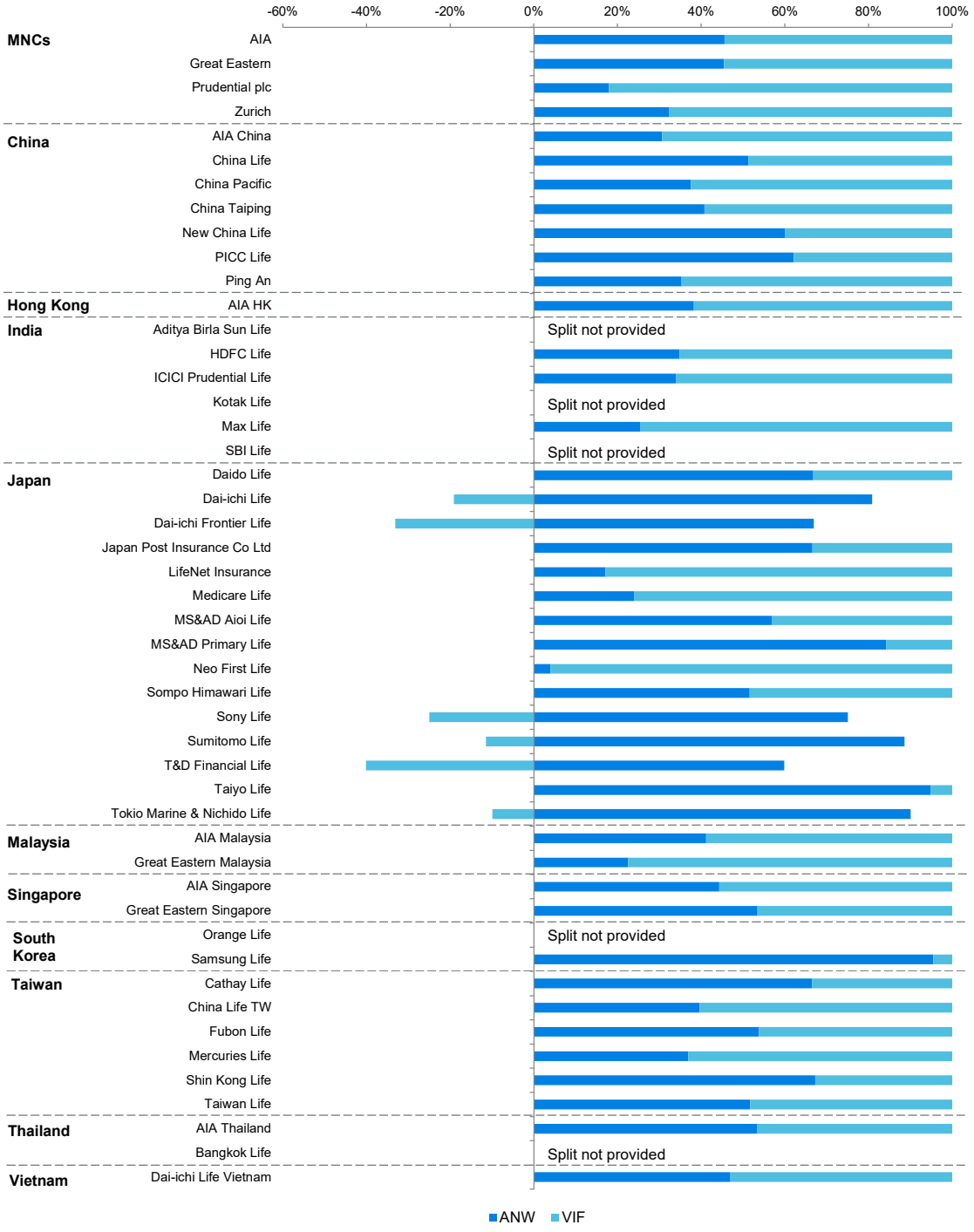


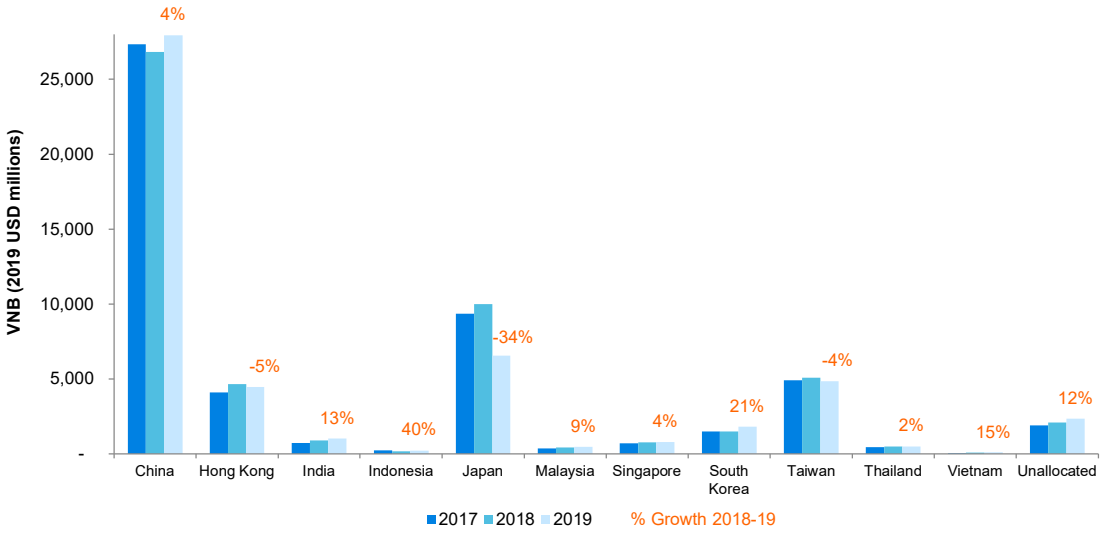
Figure 22 above shows the growth in EV by individual company. Allianz Asia reported significant EV growth of 27%. Allianz attributed the EV growth to favourable economic movements and stronger Asian currencies. All Chinese life insurers posted double-digit growth in EV in 2019.

Figure 23 breaks down reported EV for 2019 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, is the persistent low interest rate environment and, for some markets, the predominantly non-participating in-force portfolios.

VNB IN ASIA

Total reported VNB for Asia stood at USD 51.1 billion in 2019, compared with USD 52.9 billion in 2018, representing a decline of 3.5%[39]. Figure 24 provides a market-by-market comparison of growth in VNB based on the respective disclosures.

FIGURE 24: REPORTED VNB OF ASIAN OPERATIONS ON A COMPARABLE BASIS,[40] 2017 TO 2019



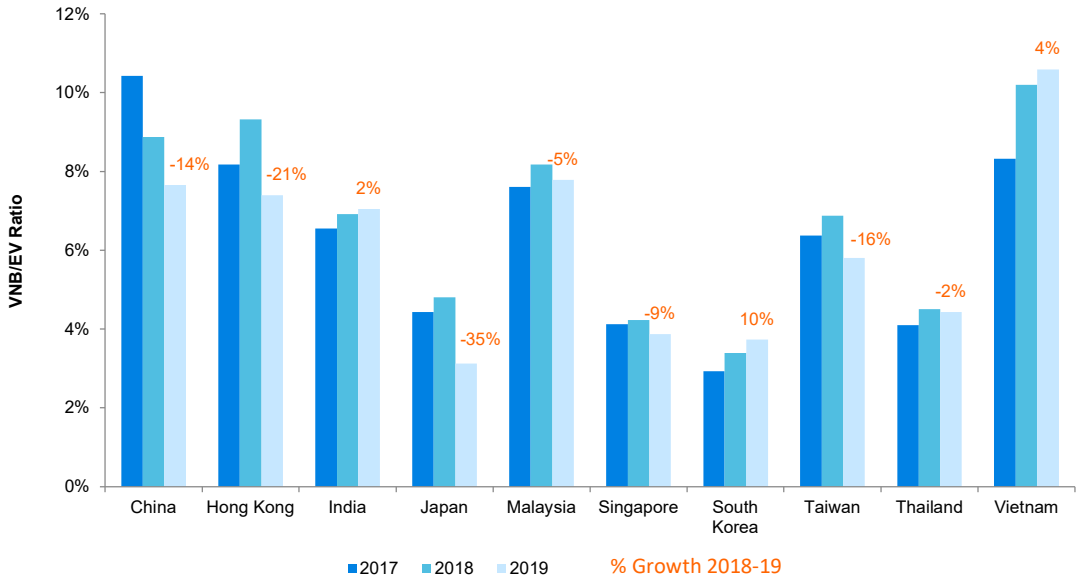
Indonesia and South Korea reported the highest growth in VNB on a constant currency basis, largely driven by significantly higher new business volumes (on an APE basis). For Indonesia, our VNB analysis was only based on one data point, Prudential Indonesia, who attributed the growth to the broadening of its product range and increased agent productivity. Hong Kong and Taiwan experienced minor reductions in VNB in USD terms. Japan witnessed the highest drop in VNB, reporting a fall of 34% in 2019. Many insurers suffered from both declining sales and declining margins on savings products. The significant decline in new business sales volumes was mainly due to the temporary suspension of the sale of tax-favoured COLI products following a change in regulation. Further, the declining interest rate trend internationally made it challenging for the insurers to offer a meaningful return on foreign currency denominated products, resulting in diminished sales.

[39] This percentage has been calculated on a comparable basis, i.e., only companies that have disclosed a full set of 2017, 2018 and 2019 numbers have been included here.

[40] As at the data cutoff date, some insurers have not yet disclosed their 2019 EV figures. Hence, this chart and subsequent commentary only includes insurers that have a complete set of 2017, 2018 and 2019 EV figures. The performance of the remaining companies will be included in our mid-year EV update report. The missing companies include Exide Life, PNB MetLife, Reliance Nippon Life, Meiji Yasuda Life, Samsung Fire & Marine and Hanwha Life.

When analysing VNB, it is sometimes instructive to examine the ratio of VNB to EV over time, as this can provide an indication of the relative maturity of the market.

FIGURE 25: VNB/EV RATIO,[41] 2017 TO 2019



Except for India, South Korea and Vietnam, all markets saw a fall in VNB/EV ratio over the past year.

South Korea witnessed the highest increase in VNB/EV ratio in 2019, primarily as a result of strong new business sales on an APE basis and lower growth in EV. The fall in VNB/EV ratio for China and Singapore is due to a greater rise in EV compared to a smaller increase in VNB, while a large increase in EV combined with a small fall in VNB has resulted in a drop in VNB/EV ratio for Hong Kong and Taiwan.

[41] 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 2017 to 2019.

FIGURE 26: ASIAN VNB BY COMPANY, 2017 TO 2019

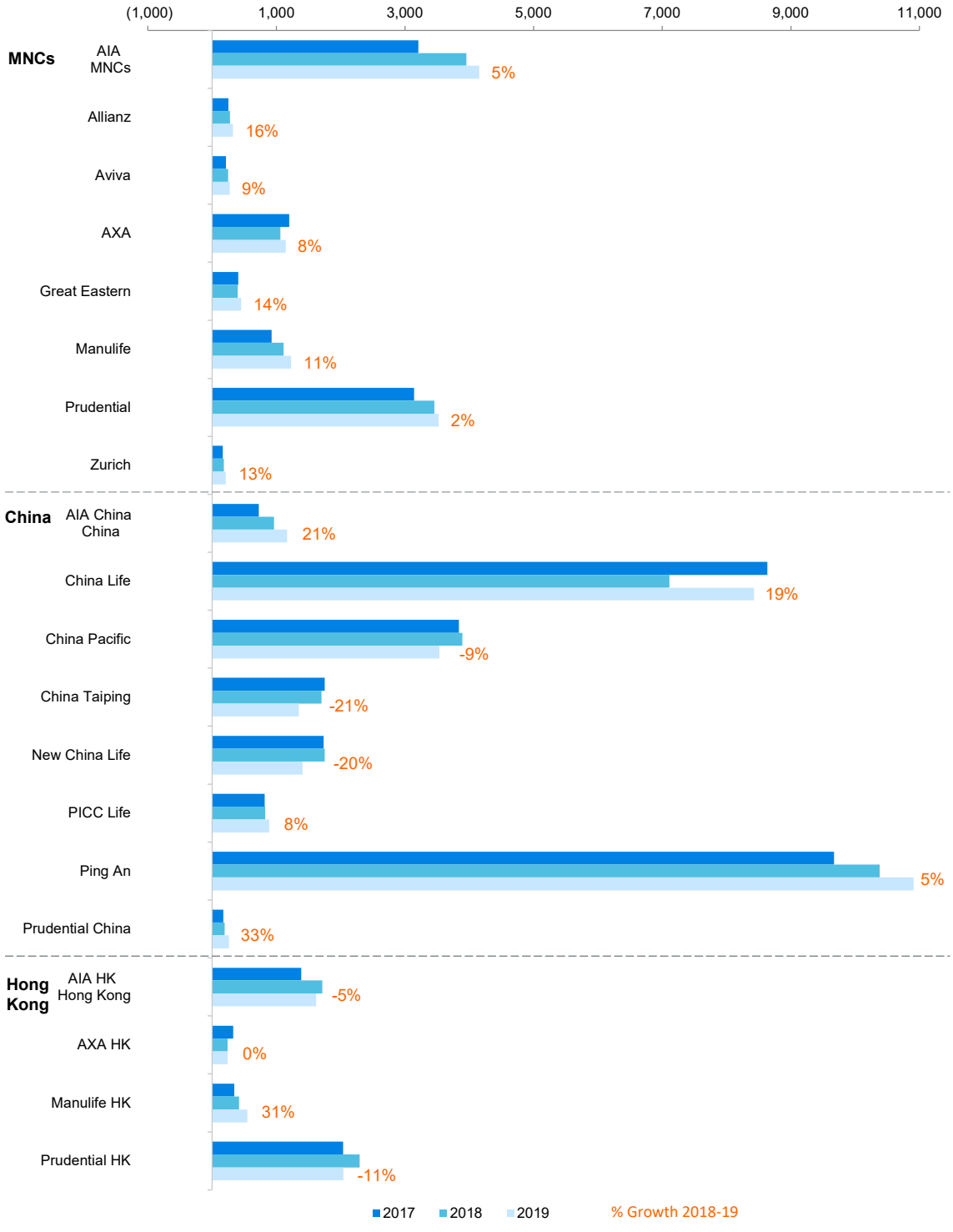


FIGURE 26: ASIAN VNB BY COMPANY, 2017 TO 2019 (CONTINUED)

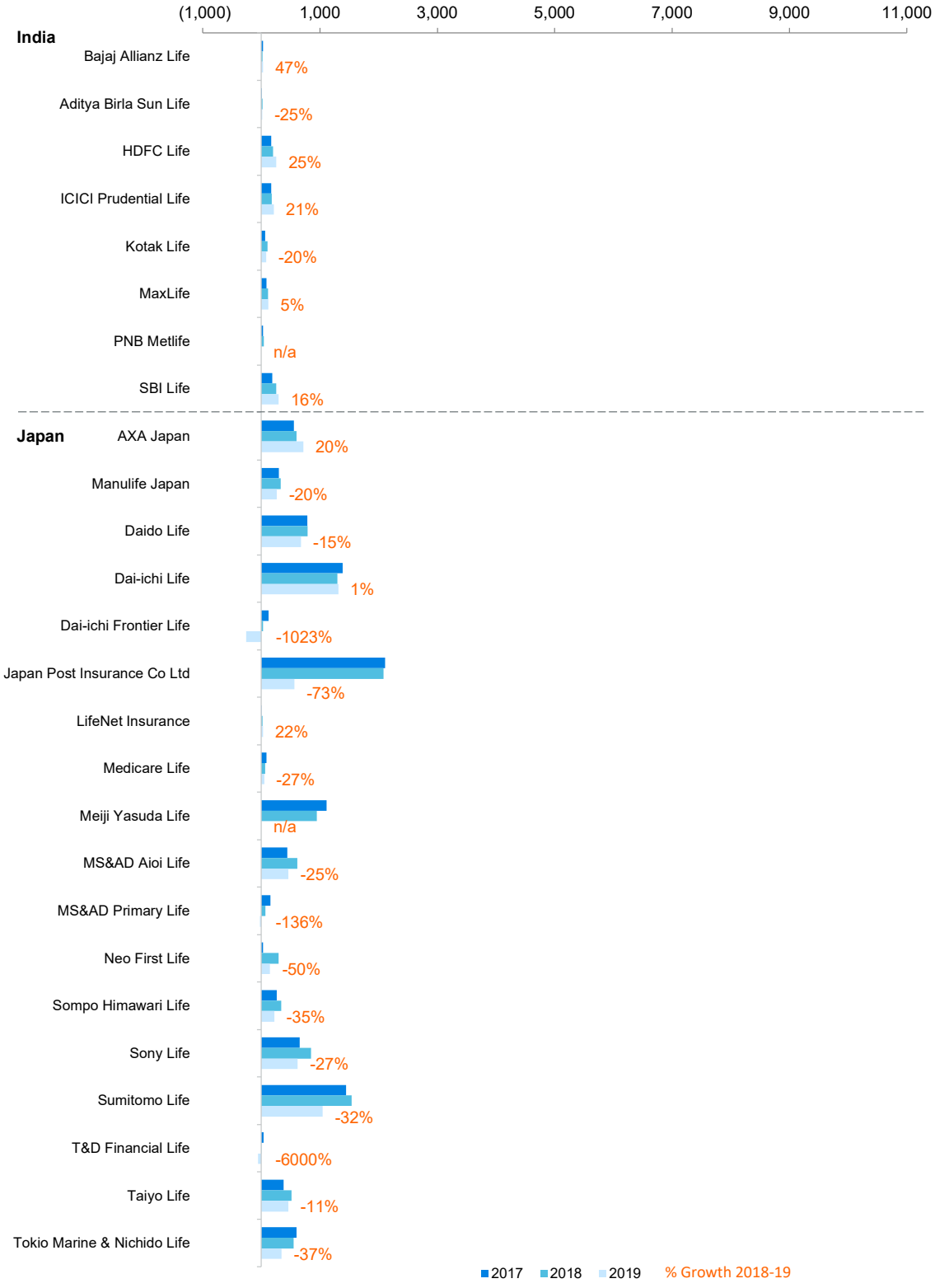
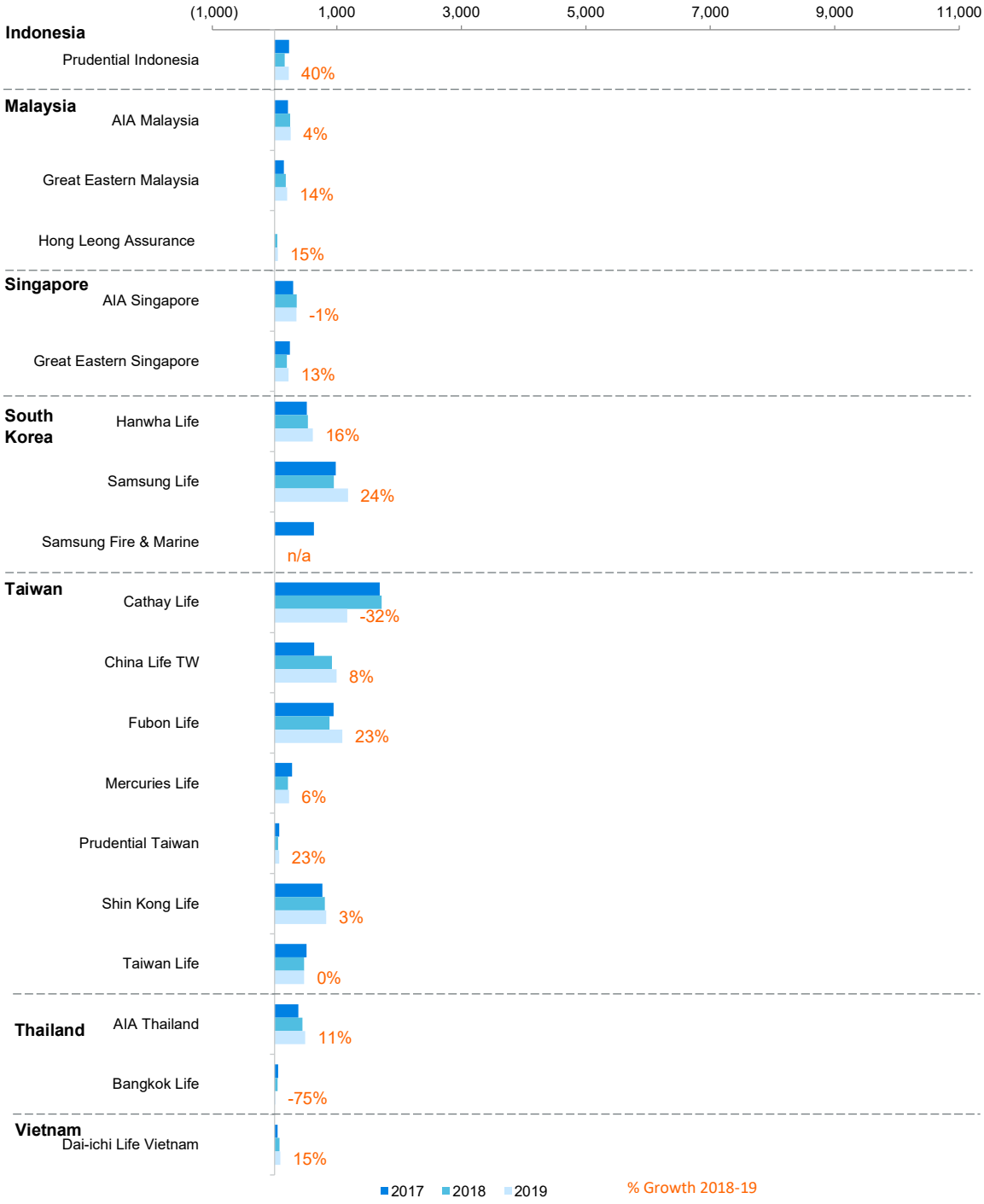


FIGURE 26: ASIAN VNB BY COMPANY, 2017 TO 2019 (CONTINUED)



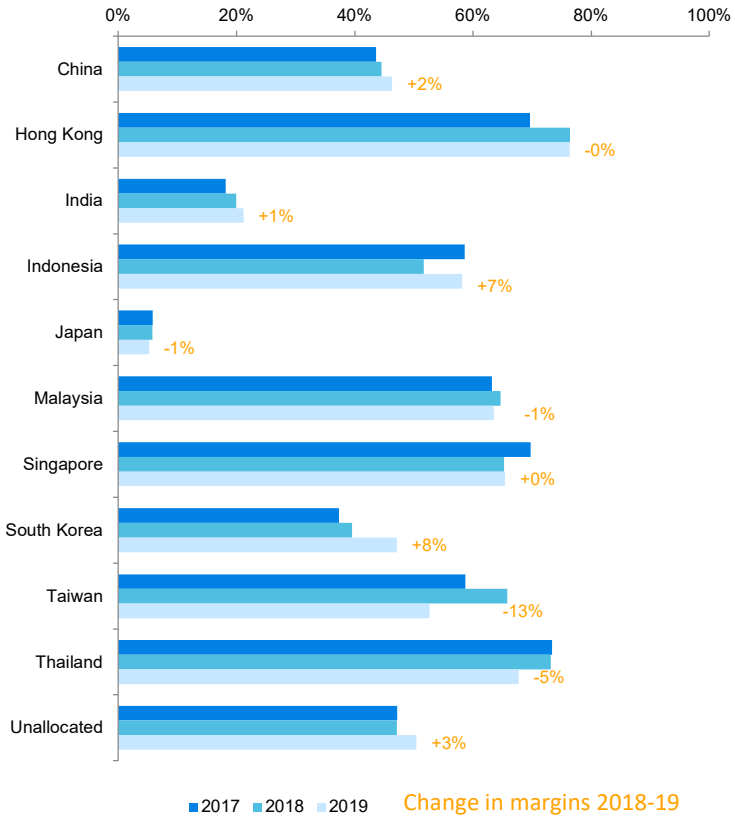
The highest increases in 2019 VNB were posted by Bajaj Allianz Life at 47% and Prudential Indonesia at 40%.

At AIA, the Group's total VNB (excluding Hong Kong) grew strongly at 16% compared to 2018, while Hong Kong reported a 5% reduction in VNB in 2019, mainly attributed to the substantial decline in VNB from Mainland Chinese visitors owing to social unrest in the second half of 2019, which broadly tracked the reduction in visitor arrivals from Mainland China, as reported by the Hong Kong Tourism Board.[42]

[42] Source: AIA 2019 Annual Report.

NEW BUSINESS MARGINS[43] IN ASIA

FIGURE 27: IMPLIED NEW BUSINESS MARGINS[44] BY MARKET, 2017-2019



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. Based solely on companies' EV disclosures, Indonesia and South Korea exhibited the highest growth in new business margins in the region, with Taiwan and Thailand posting a significant drop in new business margins in 2019. However, as mentioned earlier, the new business margin for Indonesia was only based on one data point, Prudential Indonesia. The insurer cited broadening of its product offering as the cause of rise in new business profitability. Slight growth in India was driven largely increasing share of protection business in product mix.

[43] New business margin has been defined as the ratio of VNB and 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.

[44] This chart has been calculated by taking the sum of all disclosed VNB in each market besides Japan, 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 countries 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 (2017, 2018 and 2019)[45]. This is in contrast to 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 2019. As a result of exchange rate differences, the 2019 growth rates for each MNC's subsidiary may not be the same as those presented in the previous sections.

[45] Please note that not all the financial years of insurers coincide with calendar years. In this report, we have defined 2019 results to be the financial year results that contain the majority of 2019 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 2020. Hence, when referring to Indian and Japanese insurers, FY2019 refers to the year ending 31 March 2020.

China

FIGURE 28: REPORTED EV OF CHINESE INSURANCE OPERATIONS, 2017-2019

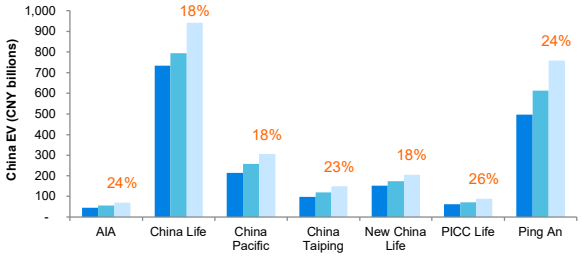


FIGURE 29: REPORTED ANW OF CHINESE INSURANCE OPERATIONS, 2017-2019

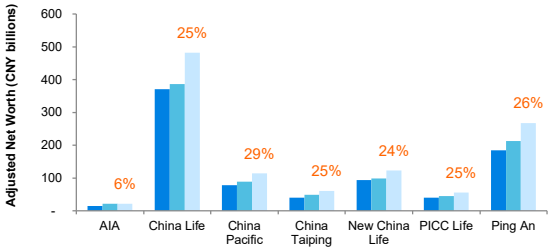


FIGURE 30: REPORTED VIF OF CHINESE INSURANCE OPERATIONS, 2017-2019

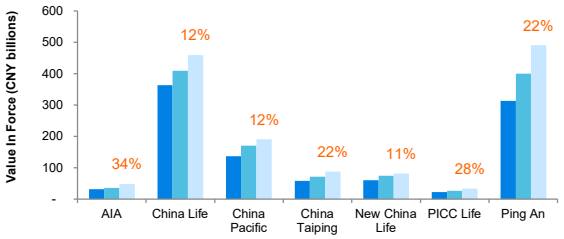


FIGURE 31: REPORTED VIF/ANW SPLIT OF CHINESE INSURANCE OPERATIONS, 2019

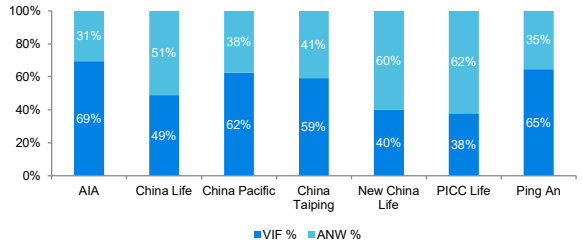


FIGURE 32: REPORTED VNB OF CHINESE INSURANCE OPERATIONS, 2017-2019

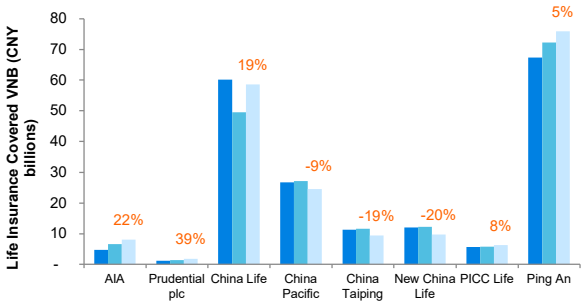


FIGURE 33: REPORTED APE[46] [47] OF CHINESE INSURANCE OPERATIONS, 2017-2

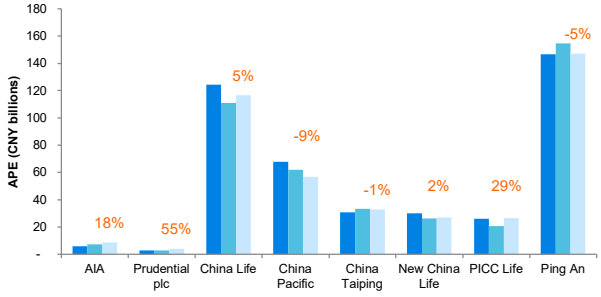
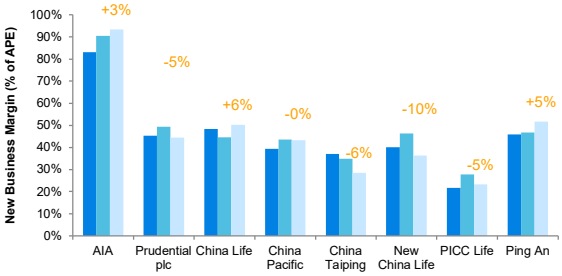


FIGURE 34: REPORTED NEW BUSINESS MARGINS[48] OF CHINESE INSURANCE OPERATIONS, 2017-2019



[46] 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.

[47] APE figures include short-term insurance premiums as life insurers write both short-term and long-term business for both life and health insurance.

[48] Note that the margins are calculated as the disclosed VNB divided by the calculated APE in Figure 34, and may not represent actual margins of the respective companies.

Seven companies reported 2019 EV results in China, all of which managed double-digit growth for the year with the contribution of one-time tax refund and favourable investment performance. PICC Life reported the highest growth in EV at 26% in 2019, followed by AIA China and Ping An, both recording EV growth of 24%. Prudential only disclosed VNB and APE results for its China joint venture, which have also been included in the analysis (on an EEV basis, with the rest of the market reporting TEV).

The growth in VNB was mixed in 2019, with Prudential China posting the highest VNB growth of 39%, followed by AIA China recording a 22% increase in 2019. AIA China's differentiated Premier Agency strategy supported this double-digit growth. New China Life reported the highest fall in VNB at 20% in 2019, followed by China Taiping, with a reduction in VNB of 19%. The fall in VNB for New China Life is due to decrease in VNB margin from 48.1% in 2018 to 36.5% in 2019, driven by adverse movements in its product mix and channel mix. New China Life's single premiums from bancassurance increased from RMB 4 million in 2018 to RMB 6 billion in 2019 and the long term new business premiums from the agency channel decreased from RMB 16 billion in 2018 to RMB 15 billion in 2019.

Prudential China reported the highest rise of 55% in APE, attributing this to strong growth in its agency and bancassurance channels, in turn leading to the high VNB growth.

The majority of insurers have kept their discount rate assumptions unchanged from 2018. However, Prudential China increased its discount rate from 8.1% in 2018 to 8.2% in 2019. All life insurers have maintained their investment return assumptions in 2019, with the only exception being Prudential China. 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 5%, with RDRs of around 11%.

In June 2019, the CBIRC highlighted that the aggregate solvency ratio of the insurance sector rose for the first time in three years since the implementation of C-ROSS.

In accordance with CBIRC's agenda of allowing more overseas insurers to establish businesses in China, the CBIRC has removed the insurance company foreign shareholding limits, permitting foreign investors to have a shareholding of 100% in life insurance firms starting from 1 January 2020.

Hong Kong

FIGURE 35: REPORTED EV OF HONG KONG INSURANCE OPERATIONS, 2017-2019[49]

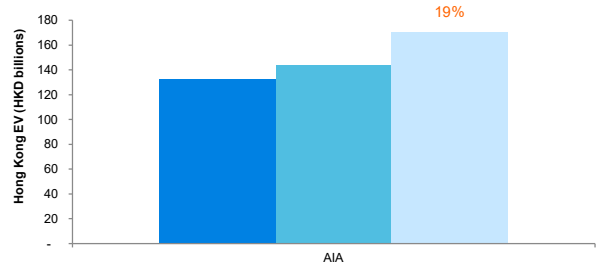


FIGURE 36: REPORTED ANW OF HONG KONG INSURANCE OPERATIONS, 2017-2019

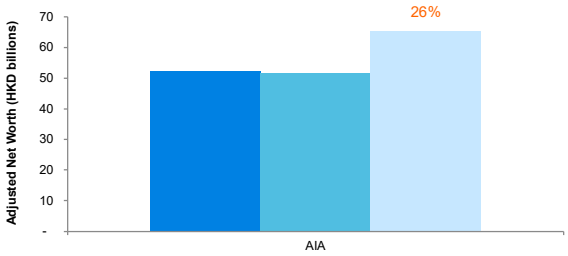


FIGURE 37: REPORTED VIF OF HONG KONG INSURANCE OPERATIONS, 2017-2019

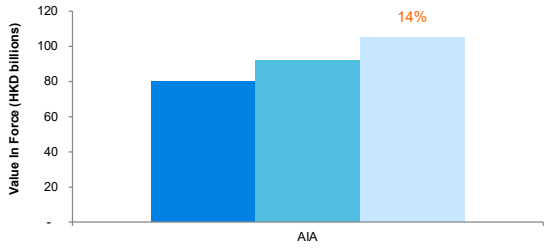


FIGURE 38: REPORTED VIF/ANW SPLIT OF HONG KONG INSURANCE OPERATIONS, 2019

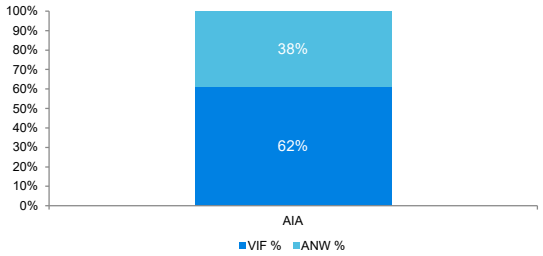


FIGURE 39: REPORTED VNB OF HONG KONG INSURANCE OPERATIONS, 2017-2019

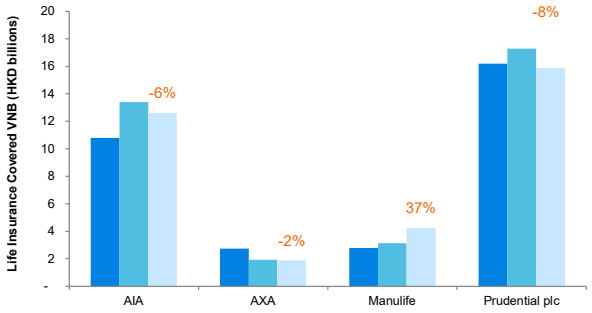


FIGURE 40: APE OF HONG KONG INSURANCE OPERATIONS, 2017-2019

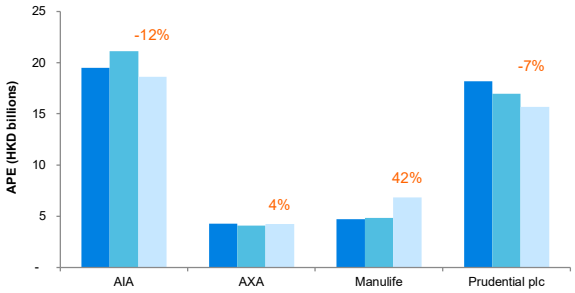
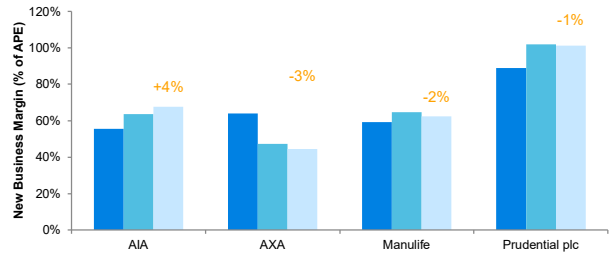


FIGURE 41: REPORTED NEW BUSINESS MARGIN (% OF APE) OF HONG KONG INSURANCE OPERATIONS, 2017-2019



[49] The FX rates used for conversion to local currency (for all charts) are listed in Appendix B.

AIA is the only company that continues to disclose EV results for its Hong Kong operation.

Our analysis covers AIA, AXA, Manulife and Prudential; the latter three companies reporting new business related results. All insurers, except Manulife, recorded declines in VNB. Manulife posted impressive VNB growth of 37%. AIA and Prudential recorded falls of 6% and 8%, respectively. The companies attributed this to social unrest and a decline in sales to Mainland Chinese visitors in the second half of 2019 in particular.

The growth in APE was mixed in local currency terms[50]. Manulife reported the highest growth in APE 42%, while AXA recorded a growth of 4% in 2019. Manulife's APE growth was driven by the success of their tax deductible solutions including Voluntary Health Insurance Scheme (VHIS) and Qualified Deferred Annuity Policy (QDAP) products, as well as participating products launched during the year. On the contrary, AIA recorded the highest fall in APE growth of 12%, followed by Prudential Hong Kong reporting a fall of 7%.

New business margins declined for all insurers except AIA, with AXA reporting the largest reduction of 3%. Manulife and Prudential Hong Kong reported falls of 2% and 1% in new business margins in 2019, respectively. AXA's reduced new business margin was mainly driven by a change in distribution mix (towards agency), combined with low interest rates. AIA recorded an increase of 4% in new business margin, mainly driven by enhanced profitability in the long-term savings and protection products.

According to the Hong Kong IA, Hong Kong's overall individual non-linked business premiums increased by 15.3% to HKD 457.1 billion, whereas linked business premiums decreased by 20.5% to HKD 27.7 billion over the course of 2019. In respect of Mainland Chinese visitor sales, new office premiums in 2019 decreased by 8.8% to HKD 43.4 billion when compared with 2018. Sales to Mainland Chinese visitors represented 25.2% of the total new individual business last year.

With the stated aim of reinforcing Hong Kong as an international financial centre, Hong Kong government gazetted the Insurance (Amendment) Bill 2020 and the Insurance (Amendment) (No.2) Bill 2020 in March 2020. The Insurance (Amendment) Bill 2020 provides a new regulatory regime for the issuances of insurance-linked securities business through the formation of special purpose insurers, and expands the scope of insurable risks for captive insurers set up in Hong Kong. The second bill, the Insurance (Amendment) (No.2) Bill 2020, introduces the formation of a consolidated and clear legal basis for the IA to exercise direct regulatory power over the holding companies of multinational insurance groups incorporated in Hong Kong, with the aim of ensuring that Hong Kong's insurance regulatory system aligns with international standards. The IA has directed efforts towards developing a framework for group-wide supervision, with a view to establishing Hong Kong as a preferred base for large insurance groups in Asia Pacific.

Effective 23 September 2019, the IA took over from the three existing SROs and became responsible for all aspects of the regulation of insurance intermediaries in Hong Kong, including granting licenses, conducting inspections and investigations, and imposing disciplinary sanctions where applicable. The IA has circulated consultation papers on and formulated various rules, guidelines and new codes of conduct for insurance brokers and agents, for instance, Insurance (Maximum Number of Authorized Insurers) Rules (CAP 41K) and Insurance (Financial and Other Requirements for Licensed Insurance Broker Companies) Rules (CAP 41L)[51].

In addition to this, the IA has decided to delegate its inspection and investigation powers pertaining to insurance-related businesses of authorised institutions (AIs) to the MA, with a view to improve efficiency and minimise possible regulatory overlap.

The IA is in the process of developing a new RBC framework for the industry. The regulator has completed three QIS so far and is now finalising the rules on Pillar 1 capital requirements, with a further consultation process continuing until the middle of 2021, followed by the proposed submission of a legislative proposal, and the introduction of an amendment bill into Legislative Council in 2022-2023. The target effective date is currently expected to be 2024, with the first pro-forma report position as at 31 December 2023, while Group-wide Supervision framework is expected to be enacted during 2020.

[50] APE throughout this section have been converted to local currency using the prevailing exchange rates applicable at each reporting date (2017, 2018 and 2019). These figures are different to the disclosed APE in reported currency terms.

[51] https://www.ia.org.hk/en/infocenter/consultation_documents.html

The IA has finalised the rules on Pillar 2 requirements and introduced Guideline 21 (GL21) – Guideline on ERM, which is effective from 1 January 2020. The first ORSA report is required to be submitted to the IA for financial year ending on or after 31 December 2020, within six months of the valuation date.

In view of the COVID-19 pandemic, the IA has announced temporary facilitative measures that allow insurers and intermediaries to distribute different types of life insurance products through non-face-to-face methods to minimise the risk of infection during the selling process, with immediate effect until 30 June 2020. The products which can be sold through non-face-to-face methods include QDAP, VHIS, protection type products, including term policies, and certain refundable or renewable policies that provide insurance protection (such as hospital cash, medical, critical illness, personal accident, disability or long-term care cover).

In order to foster the competitiveness of the insurance industry in Hong Kong and encourage Hong Kong citizens to protect their day-to-day health from risks and accidents through insurance, the FSDC has proposed several tax measures (e.g. tax exemption on interest income from all fixed income of insurance funds, tax deduction for the increase in statutory reserves required by the regulator, etc.) for both insurance companies and individual policyholders.

India

FIGURE 42: REPORTED EV OF INDIAN INSURANCE OPERATIONS, 2017-2019[52] [53]

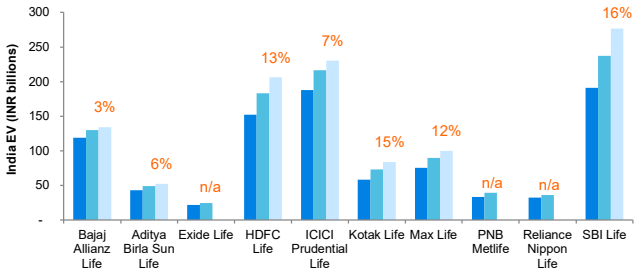


FIGURE 43: REPORTED ANW OF INDIAN INSURANCE OPERATIONS, 2017-2019[54]

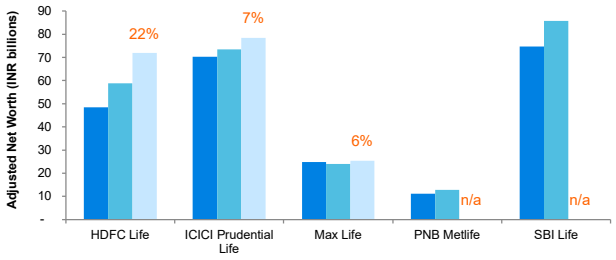


FIGURE 44: REPORTED VIF OF INDIAN INSURANCE OPERATIONS, 2017-2019

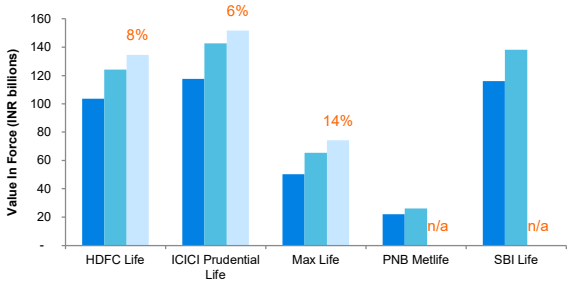


FIGURE 45: REPORTED VIF/ANW SPLIT OF INDIAN INSURANCE OPERATIONS, 2019

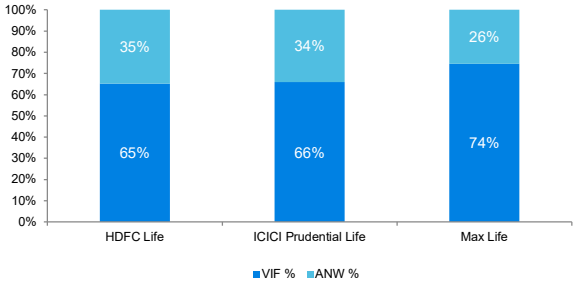


FIGURE 46: REPORTED VNB[55] OF INDIAN INSURANCE OPERATIONS, 2017-2019

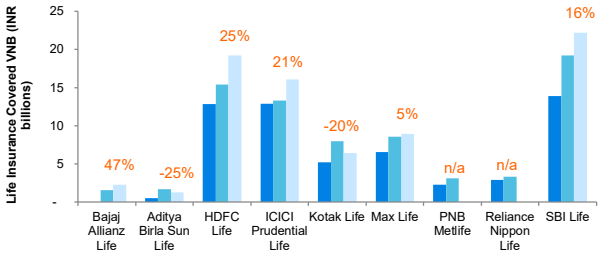


FIGURE 47: REPORTED APE[56] OF INDIAN INSURANCE OPERATIONS, 2017-2019

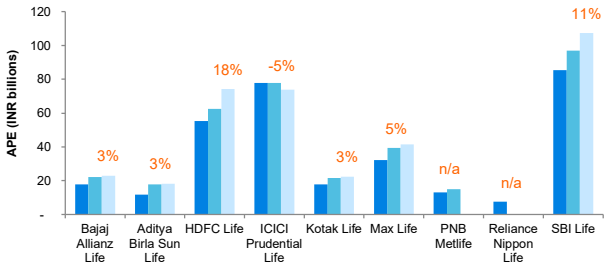
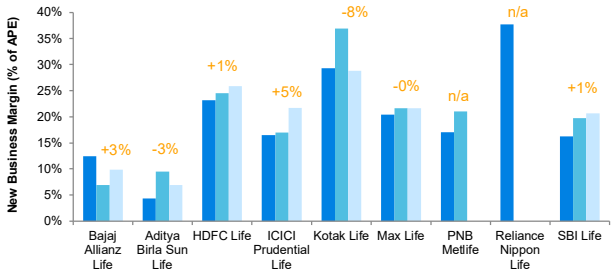


FIGURE 48: REPORTED NEW BUSINESS MARGIN OF INDIAN INSURANCE OPERATIONS, 2017-2019



[52] For the purposes of this report, FY2019 for India insurers represents the financial year ending 31 March 2020.

[53] Exide Life, PNB MetLife and Reliance Nippon Life have not disclosed their FY2019 results before the cutoff date for this report, i.e., 12 June 2020.

[54] In figure 43, 44 and 45, Aditya Birla Sun Life, Bajaj Allianz Life and Kotak Life have been excluded, as their split of EV for FY2019 has not been disclosed.

[55] For comparability, the VNB and new business margin figures are after the impact of expense overruns. This year, Bajaj Allianz Life disclosed post-expense overrun results for the first time for FY2019 and FY2018.

[56] 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.

Embedded values in India continue to increase, with four companies disclosing double-digit growth.

EV/VNB methodology in India has also largely converged to a market-consistent approach. All insurers use either MCEV or IEV, except for Reliance Nippon Life, which last disclosed its results as at 31 March 2019 using TEV methodology.

Reported new business margins are in the range of 7% to 29% after allowing for the impact of expense overruns. All insurers recorded increases in VNB results in FY2019, except Aditya Birla Sun Life and Kotak Life, which recorded falls of 25% and 20%, respectively. Kotak Life's VNB margins declined in 2019, mainly due to the fall in interest rates, which affected the company's non-par portfolio, and increased expenses from the agency channel. Bajaj Allianz Life recorded the highest VNB growth of 47% in FY2019, attributing its growth to a more balanced channel mix, aided by sales through newly acquired distribution relationship of Axis Bank. An increasing share of protection business in the product mix has contributed to improving the VNB margins for all insurers.

In view of the emerging adverse market conditions due to the impact of the COVID-19 pandemic, and to conserve capital to protect policyholders' interests, the regulator has directed insurers to refrain from paying dividends to their shareholders until further notice. Milliman has published an e-Alert on the challenges faced by the Indian life insurers resulting from the COVID-19 impact on capital markets, interest rates and adverse business outlook. The e-Alert is available here.

In recent years, capital has typically become more of a constraint for Indian life insurers. Milliman conducted a short survey of 17 (out of 24) life insurers to understand how they are managing the risks associated with high guaranteed savings products. Milliman has published an e-Alert discussing the key results of the survey; the e-Alert is available here.

Indonesia

FIGURE 49: REPORTED VNB[57] OF INDONESIAN INSURANCE OPERATIONS, 2017-2019[58]

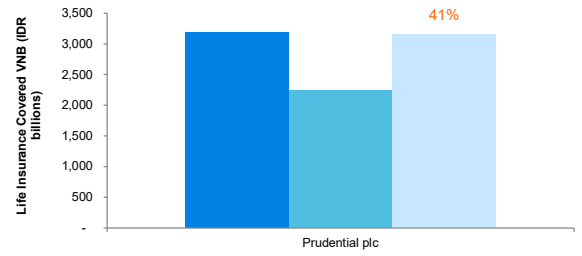


FIGURE 50: REPORTED APE[59] OF INDONESIAN INSURANCE OPERATIONS, 2017-2019

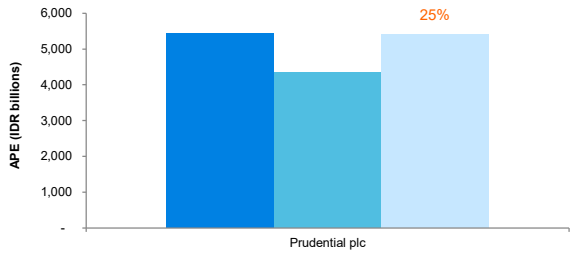
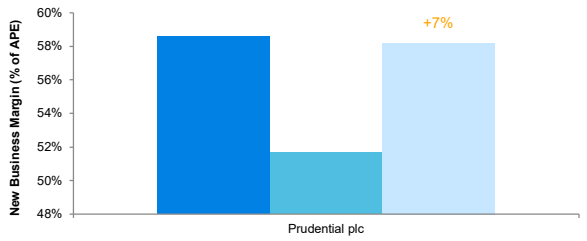


FIGURE 51: REPORTED NEW BUSINESS MARGINS OF INDONESIAN INSURANCE OPERATIONS, 2017-2019



No insurers publicly disclose EV figures for their Indonesian operations. Prudential Indonesia remains the only insurer to report VNB and new business margins for Indonesia in 2019. Although AIA's results are not disclosed (it is part of an aggregated classification), some of the underlying EV assumptions are provided. For 2019, Prudential reported a rise in APE in local currency terms[60], from IDR 4,333 billion to IDR 5,415 billion, an increase of 25%. In local currency terms, the VNB increased by 41%. Prudential Indonesia has attributed the rise in new business volumes and profits to the broadening of its product offering.

The RDR for AIA Indonesia has remained unchanged at 13.0% in 2019, while for Prudential Indonesia it has decreased from 12.4% in 2018 to 10.8% in 2019. AIA Indonesia's 2019 investment return assumptions remained unchanged from 2018 at 12.0% for equity returns and 7.5% for 10-year government bond yields. Prudential Indonesia reduced its 10-year government bond yield assumption by 100bps to 7.2%. The 10-year government bond yield in Indonesia as at 31 December 2019 was approximately 7.05%.

The Indonesia Life Insurance Association published life insurance industry statistics for 2019, with total premium income increasing by 5.8%, from IDR 185.88 trillion in 2018 to IDR 196.69 trillion in 2019. The increase was mainly attributed to growth in the bancassurance channel of 5.4% (IDR 79.77 trillion to IDR 84.08 trillion) and agency channel of 6.6% (IDR 73.36 trillion to IDR 78.21 trillion), contributing 42.7% and 39.8% respectively of total premium income of the life industry. New business premium amounted to IDR 124.17 trillion, representing an increase of 5.8% over 2018 with regular premium and single premium business increasing by 14% and 3.7%, respectively.

[57] VNB and APE throughout this section have been converted to local currency using the prevailing exchange rates applicable at each reporting date (2017, 2018 and 2019). These figures are different to 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.

[58] The FX rates used for conversion to local currency (for all charts) are listed in Appendix B.

[59] Ibid.

[60] The disclosed 2019 VNB and APE growth for Prudential in GBP terms are different from the values shown in Figure 49 and 50. Please refer to footnotes 56 and 57 for further explanation.

New government regulation PP No. 3/2020 (effective from January 2020) removed the requirement for Indonesian nationals or entities fully owned by Indonesian nationals to contribute at least 20% of any increase in issued share capital. As a result, foreign shareholders can acquire a shareholding of above 80% when the relevant insurance company increases its issued share capital. However, the foreign shareholders cannot exceed the existing percentage foreign ownership when increasing share capital. PP No. 3/2020 clarifies that the foreign shareholding cap applicable to the new standalone Syariah companies to be spun-off from a Syariah window will follow the foreign ownership cap of its parent company. This means that, where applicable, a spun-off company will be able to benefit from the same exemption from the 80% foreign ownership cap as its parent company.

In light of the COVID-19 outbreak, the regulator has relaxed certain requirements for allowable assets in solvency calculations.

Japan

FIGURE 52: REPORTED EV OF JAPANESE INSURANCE OPERATIONS, 2017-2019[61]

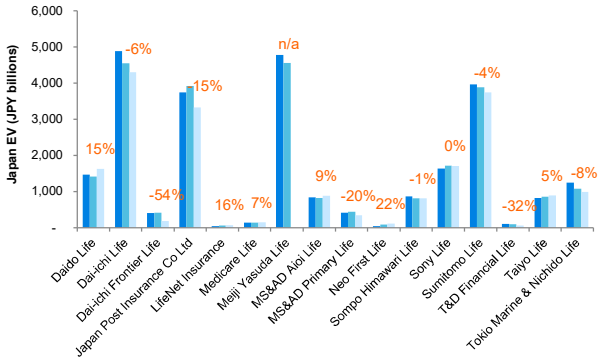


FIGURE 53: REPORTED ANW[62] OF JAPANESE INSURANCE OPERATIONS, 2017-2019

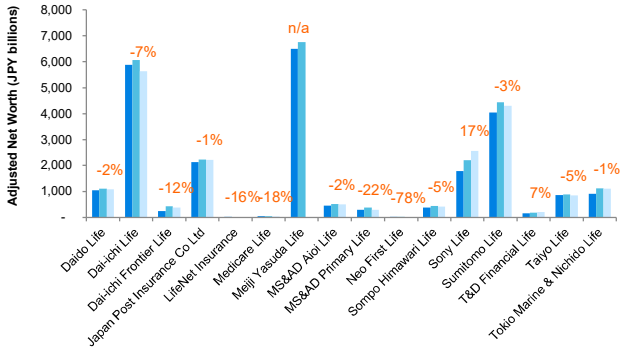


FIGURE 54: REPORTED VIF[63] OF JAPANESE INSURANCE OPERATIONS, 2017-2019

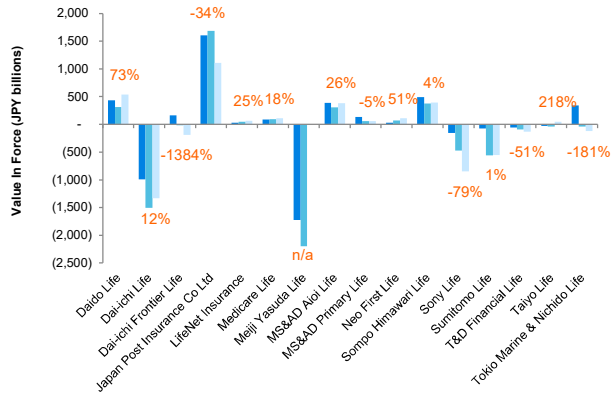


FIGURE 55: REPORTED VIF/ANW SPLIT OF JAPANESE INSURANCE OPERATIONS, 2019

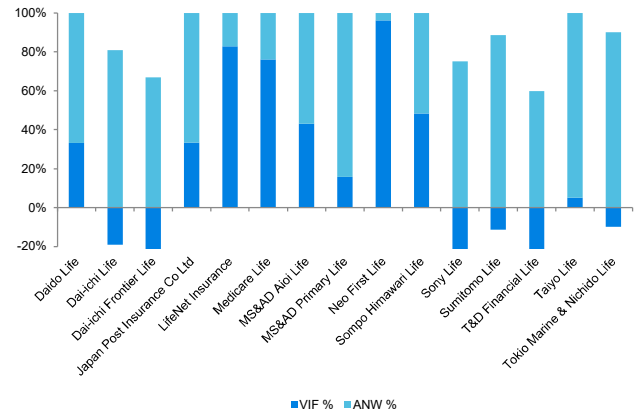


FIGURE 56: REPORTED VNB OF JAPANESE INSURANCE OPERATIONS, 2017-2019

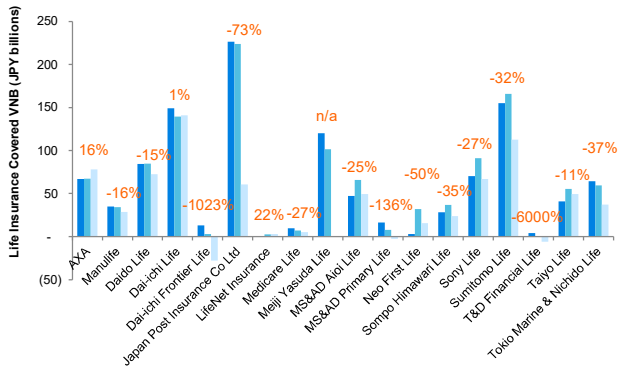
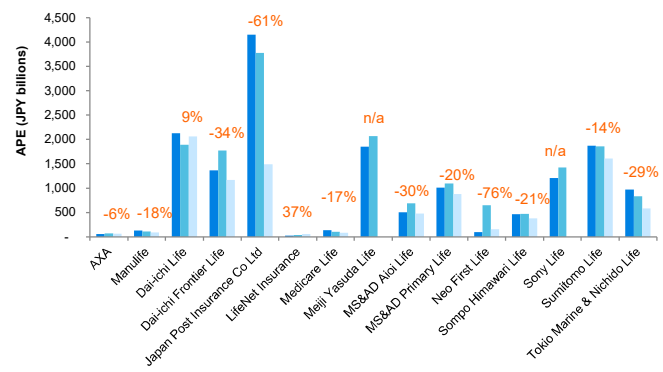


FIGURE 57: REPORTED PVNBP[64] OF JAPANESE INSURANCE OPERATIONS, 2017-2019



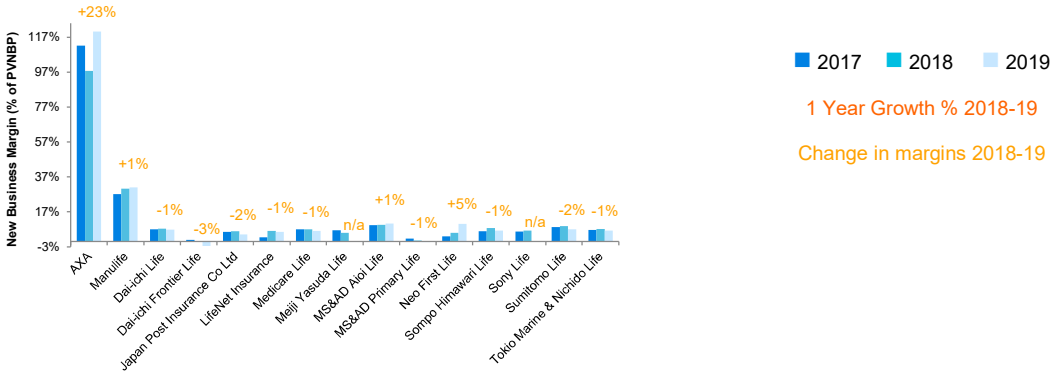
[61] Meiji Yasuda Life did not disclose their FY2019 results before the cut-off date for this report, i.e., 12 June 2020.

[62] In 2019, Japan Post Insurance Co Ltd and MS&AD Primary Life have included unrealized gains on assets backing liabilities in VIF, instead of ANW.

[63] Ibid.

[64] AXA and Manulife have been excluded from this graph as they do not disclose PVBNP numbers.

FIGURE 58: REPORTED NEW BUSINESS MARGINS OF JAPANESE INSURANCE OPERATIONS, 2017-2019



Low and negative interest rates continue to pose severe challenges for Japan's economy and the nation's life insurers. Profit margins have eroded due to a flattening of the yield curve over the past year. The effect has been particularly notable in the case of long-term business, due to declining rates at the longer end of the yield curve. For in-force business, this has been partially offset by gains on long-term bonds. On the other hand, companies have seen a drop in the value of their short or medium-term bond holdings, due to a rise in rates at the shorter end of the curve.

In addition, new business sales volumes declined significantly for many companies. One notable cause was the temporary suspension of sales of tax-favoured COLI following a change in regulation. Even after the resumption of sales, monthly sales volumes have not returned to prior levels. Further, the declining interest rate trend internationally has made it challenging to offer a meaningful return on foreign currency denominated products, resulting in diminished sales. In the latter part of the fiscal year, COVID-19 has led to even lower rates abroad, further impairing sales.

Fifteen companies based in Japan reported EVs in 2019. Results varied considerably by company, depending on the type of business sold or in force. The largest companies recorded declines in EV. Among the smaller niche players, those focusing on savings/investment products had a difficult year. On the other hand, Neo First Life and LifeNet Insurance posted EV increases of 22% and 16%, respectively. These two companies sell primarily term life and medical business, which are less affected by the difficult economic conditions.

VNB declined for most companies in 2019. While many companies suffered from both lower sales and declining margins on savings products, the affect was particularly notable for T&D Financial Life and Dai-ichi Frontier Life. Both of these companies are smaller niche players focusing on savings/investment products including foreign currency savings products.

T&D Insurance Group changed its EV methodology by using a different interest rate extrapolation method employed in the calculation of FY2019 MCEV and VNB. The new method is based on International Capital Standard (ICS) Version 2.0 as adopted by the International Association of Insurance Supervisors (IAIS). Under this method, the UFR set to 3.8%, with the last liquid data point for Japanese Yen set at the 30th year. To determine forward rates for the 31st and later years, the Group extrapolated the yield curve to the UFR over a convergence period of 30 years using the Smith-Wilson method. FY2018 results were restated using the new approach. However, for the analysis in this report, we did not employ the restated FY2018 numbers.

Japan Post Insurance Co Ltd reported a large decline in VNB in FY2019, primarily due to refraining from proactive sales proposals beginning mid-July 2019 and a business suspension from January 2020. Similar to many other companies, the decline in VNB was also due to further declining interest rates.

For their Japanese subsidiaries, AXA and Manulife only disclose VNB and APE results. In 2019, AXA reported an APE of EUR 531 million in Japan, while Manulife reported CAD 1,109 million. All other Japanese companies disclose PVNBP instead of APE.

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 Japanese Government Bonds (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 five percent. 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[65]. On a percentage basis, this VIF is normally very sensitive to changes in interest environment. However, due to the market consistent approach, and asset liability management efforts, changes in VIF are often substantially offset by changes in ANW. As a result, overall embedded value, though sensitive to changing market yields, is far less sensitive than the VIF and ANW components. Nevertheless, as stated above, FY2019 market conditions were extraordinarily challenging. As a result of the yield curve flattening, many companies suffered a decrease in both of VIF and ANW depending on their level of durational mismatch.

The reduction and flattening of the yield curve between March 2019 and March 2020 had a severe impact on many companies. In order to understand and compare results, it is critical to look at differences in the underlying methodologies. As one would expect, embedded values at companies employing an UFR were less severely impacted than were those at companies applying a constant forward rate. The impact of the interest rate extrapolation methodology difference can be significant, but only a few companies disclose sensitivities that quantify the impact of employing the UFR or a change in the level of UFR. Also, a few companies that use JGB rates as reference rates disclose the difference in value that arises due to the use of JGBs instead of swaps. In the COVID-19 market conditions at March 31, 2020, this difference is larger than in prior years.

Although most companies continue to generate significant value from new sales, in many cases this was not enough to offset the impact of the flattening yield curve and declining equity values. As a result, most Japanese companies reported overall declines in EV during FY2019.

Looking forward, there are many uncertainties linked to the COVID-19 turmoil. Since Japan has managed COVID-19 relatively well so far, no significant claims increases are currently expected. However, the effect of the virus on sales volumes will be more severe in FY2020 than it was in FY2019. Conditions should gradually stabilise over the next few years. However, the current crisis may hasten industry change in many areas. Questions from prior years remain. How long will low interest rates persist, in Japan and in other key global markets? What impact will trade pressures and a possible trade war have on Japan's economy? Japanese life insurers are increasingly exposed to the vagaries of global trade and finance-in part due to explicit expansion efforts in Asia, North America, and elsewhere, but also due to the significance of sales of foreign denominated products in the domestic market. Yen versus US or Australian dollar spreads have been quite volatile, making the design, sale, and hedging of these products challenging. Growing international exposure and diversification makes EV analysis more critical than ever, yet more complex to interpret. The anticipated adoption of an ICS-type solvency regulation several years from now should facilitate the harmonization of MCEV-oriented performance measurement tools with risk and capital management. In this environment, reporting with greater detail and transparency, coupled with effective corporate communications, will be essential if Japanese companies are to achieve appropriate market recognition.

[65] 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 59: REPORTED EV OF MALAYSIAN INSURANCE OPERATIONS, 2017-2019[66] [67] [68]

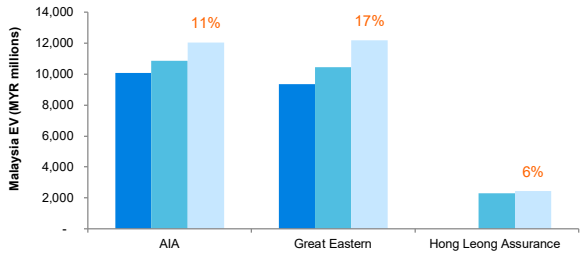


FIGURE 60: REPORTED ANW OF MALAYSIAN INSURANCE OPERATIONS, 2017-2019

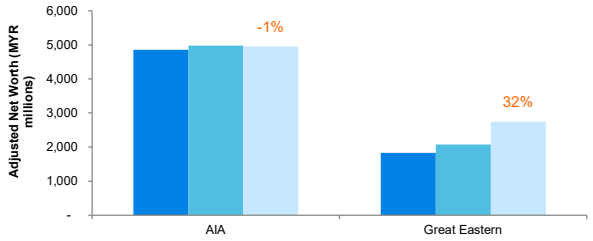


FIGURE 61: REPORTED VIF OF MALAYSIAN INSURANCE OPERATIONS, 2017-2019

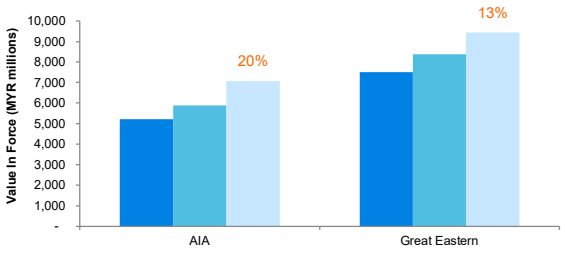


FIGURE 62: REPORTED VIF/ANW SPLIT OF MALAYSIAN INSURANCE OPERATIONS, 2019

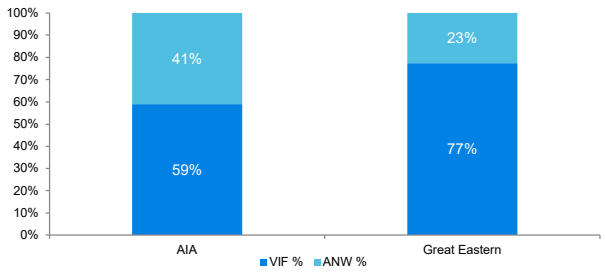


FIGURE 63: REPORTED VNB[69] OF MALAYSIAN INSURANCE OPERATIONS, 2017-2019[70]

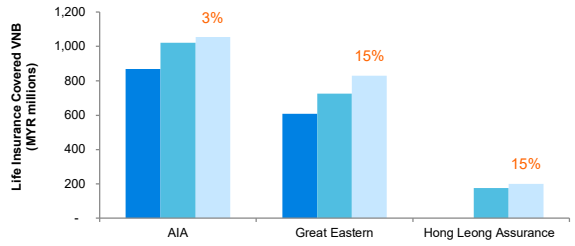


FIGURE 64: REPORTED APE[71] OF MALAYSIAN INSURANCE OPERATIONS, 2017-2019

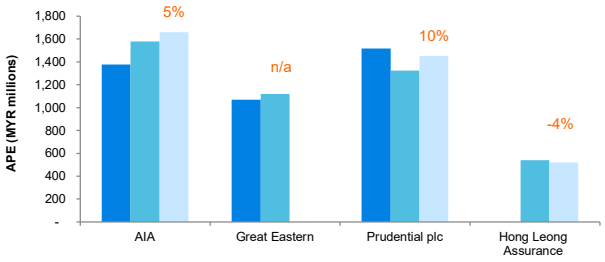
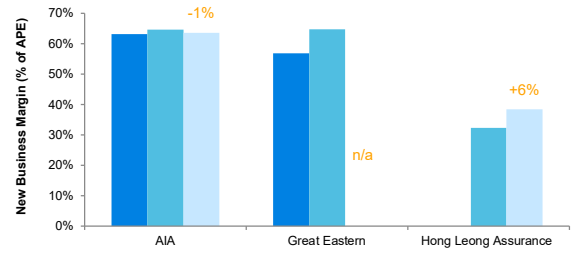


FIGURE 65: REPORTED NEW BUSINESS MARGIN OF MALAYSIAN INSURANCE OPERATIONS, 2017-2019



[66] Great Eastern Malaysia's EV (ANW plus VIF) figure includes Great Eastern Takaful Berhad (GETB).

[67] The FX rates used for conversion to local currency (for all charts) are listed in Appendix B.

[68] Hong Leong Assurance (HLA) is also included under Malaysian Insurance Operations for 2019.

[69] AIA's VNB and APE figures exclude pension business. For HLA, APE has been calculated.

[70] Great Eastern Malaysia's VNB figure excludes GETB.

[71] 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 (2017, 2018 and 2019). These figures are different to 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.

Hong Leong Assurance (HLA) disclosed its EV and VNB results for the first time, as at 30 June 2018 and 2019. Prudential Malaysia's results are not disclosed (as it is part of an aggregated classification), although some of the underlying EV assumptions are provided.

The RDR for Great Eastern remained unchanged from 2018, at 8.75%, while AIA decreased its RDR by 20 bps to 8.55%. Great Eastern did not disclose its investment return assumptions for 2019. AIA Malaysia's 2019 investment return assumptions reduced by 20bps for both equity and bonds, to 8.6% for equity and 4.0% for 10-year government bond yields. Prudential Malaysia's RDR assumption decreased for new business and in-force business from 6.6% (for both new business and in-force business) in 2018 to 5.8% and 5.9%, respectively, in 2019. Prudential Malaysia's 10-year bond yield assumption reduced from 4.1% to 3.3% in 2019, while the equity return assumption dropped from 7.9% to 7.3%. For comparison, the 10-year government bond yield in Malaysia as at 31 December 2019 was 3.3%.

In 2019, AIA recorded a 5% increase in its new business APE and 3% in its VNB, with a drop in new business margin of 1% over the same period. Its VNB margin remained strong at 63.5%. The growth in APE and VNB was supported by increased sales from both agency and in-branch bancassurance channels. Its strategic partnership with Public Bank Berhad generated strong VNB growth from in-branch distribution and the launch of a new quality digital recruitment platform supported the VNB growth in the agency channel. AIA's Takaful business continues to be an important strategic focus, delivering a double-digit VNB growth in 2019.

Great Eastern reported healthy growth in 2019, with an increase in VNB of 15% in 2019. Great Eastern Malaysia's Takaful business recorded double-digit growth. Great Eastern Takaful Berhad ventured in to the universal Takaful space by launching two universal Takaful fund products in 2019.

HLA recorded a strong double-digit growth in VNB in 2019 of 14.7%, with a VNB margin of 38.5%. The growth in VNB was credited to the continued execution of its strategy to enhance the agency and bancassurance distribution channels, as well as driving VNB through a more profitable product mix. Over 90% of its new business premiums were from non-participating and investment-linked business.

Bank Negara Malaysia (the insurance regulator, BNM) introduced Minimum Allocation Rates and strengthened disclosure requirements for policyholder illustrations for investment-linked products, in order to improve business conduct and protect the interest of policyholders.

As part of the review of the overall capital adequacy framework, in December 2019, BNM has also issued an Exposure Draft on the 'Valuation of Insurance and Takaful Liabilities', which sets out proposed requirements on the valuation of insurance and Takaful liabilities. The enhancements are aimed to ensure that liabilities are valued in a manner that are adequately reflective of the underlying cash-flow obligations of the insurance and Takaful contracts, and are consistent and comparable across different insurance and Takaful products. The exposure draft also takes into account the developments in global regulatory and accounting standards, such as IFRS17.

In addition, a revised 'Takaful Operational Framework' was issued in June 2019. The revisions seek to strengthen Takaful fund management practices, and spur greater innovation in Takaful products while further safeguarding Takaful participants.

Singapore

FIGURE 66: REPORTED EV OF SINGAPOREAN INSURANCE OPERATIONS, 2017-2019[72]

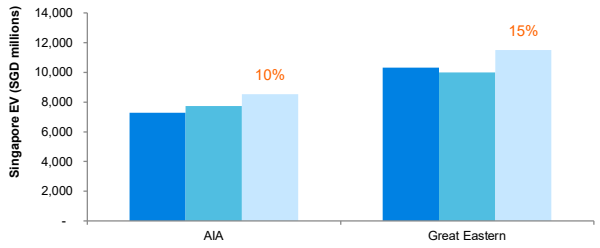


FIGURE 67: REPORTED ANW OF SINGAPOREAN INSURANCE OPERATIONS, 2017-2019[73]

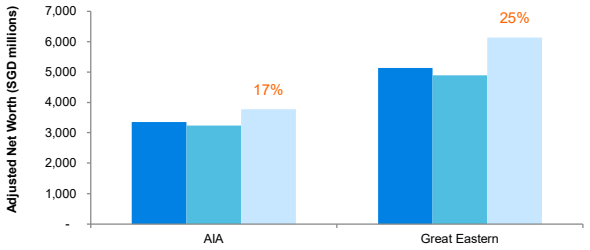


FIGURE 68: REPORTED VIF OF SINGAPOREAN INSURANCE OPERATIONS, 2017-2019

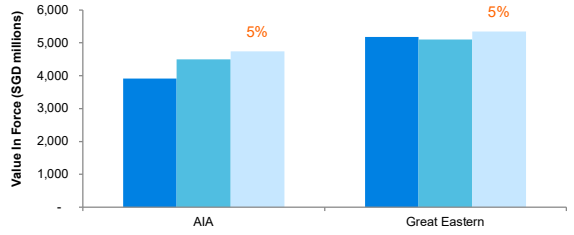


FIGURE 69: REPORTED VIF/ANW SPLIT OF SINGAPOREAN INSURANCE OPERATIONS, 2019

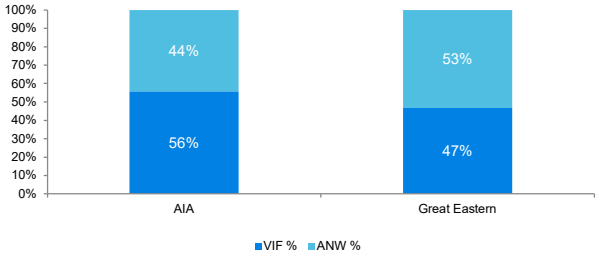


FIGURE 70: REPORTED VNB OF SINGAPOREAN INSURANCE OPERATIONS, 2017-2019

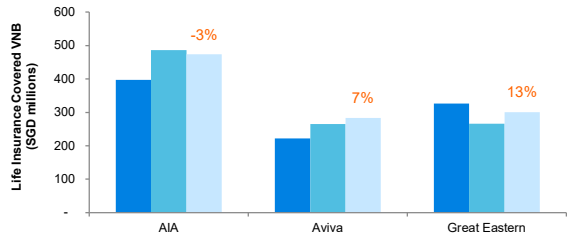


FIGURE 71: REPORTED APE[74] OF SINGAPOREAN INSURANCE OPERATIONS, 2017-2019

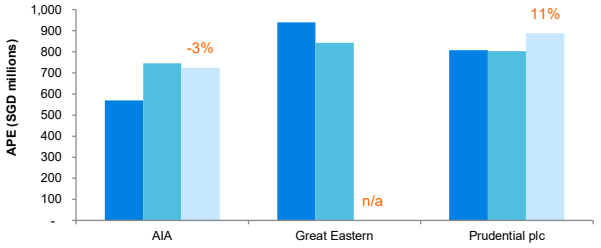
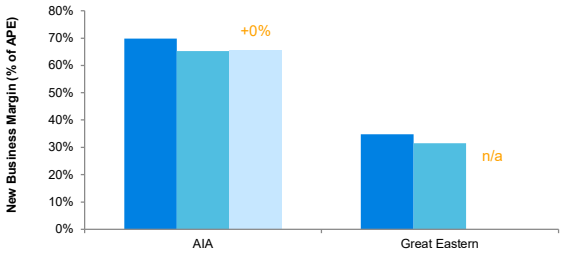


FIGURE 72: REPORTED NEW BUSINESS MARGIN OF SINGAPOREAN INSURANCE OPERATIONS, 2017-2019



[72] Great Eastern Singapore's EV include its businesses in Brunei, Hong Kong and Indonesia.

[73] Great Eastern Singapore's ANW include its businesses in Brunei, Hong Kong and Indonesia.

[74] 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 to 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.

Only Great Eastern and AIA disclose EV results for Singapore. Prudential Singapore's results are not disclosed (it is part of an aggregated classification), although some of the underlying EV assumptions are provided. The RDR for Great Eastern has remained unchanged at 7.0% in 2019, while for AIA, it has decreased to 6.9% in 2019 from 7.1% in 2018. There was a decrease in the in-force business RDR used by Prudential for EEV reporting from 4.2% in 2018 to 3.9% in 2019, further increasing the gap against the rates adopted by TEV reporting Great Eastern and AIA. Great Eastern did not disclose its investment return assumptions for 2019. AIA Singapore's 2019 investment return assumptions decreased from 2018 by 20bps for both equity and bonds, to 7.0% for equity and 2.5% for 10-year government bond yields. Prudential decreased its equity return and 10-year government bond yield assumption to 5.7% and 1.7% in 2019, respectively. For comparison, the 10-year government bond yield in Singapore as at 31 December 2019 was approximately 1.74%.

AIA recorded a 3% fall in its VNB and APE in SGD terms[75], primarily driven by lower single premium sales in the partnership distribution channel, as the company continued to maintain disciplined pricing approach for single premium high net worth products amid intensifying competition. Great Eastern reported a 13% increase in VNB as a result of the product mix shift to more protection focused products. Aviva recorded a 7% rise in VNB, attributed to the company's continued lead in the financial advisor channel. Prudential Singapore reported a rise in APE in SGD terms by 11%, attributed to the retirement product named PruActive, which marked the company's venture into the annuity market.

In February 2020, the MAS issued revised legislations that formalised the implementation of the enhanced Singapore RBC 2 framework, effective 31 March 2020. After multiple years of consultation and quantitative impact studies, since it was first introduced by the MAS in 2012, the final RBC2 framework includes more comprehensive risk requirements (e.g. the introduction of insurance catastrophe and operational risk), removal of the LTRFDR used to discount liabilities, introduction of UFR, allowance for matching adjustment, and allowance for diversification of risk requirements, among others. Insurers were expected to submit the results of a parallel run for 31 December 2019 valuation date by the end of June 2020.

With the Singapore government bond yields dropping to historically low levels in the first quarter of 2020 (leading to a significant increase in liabilities) and an increase in financial market volatility (in equity markets and credit spreads) as a result of the COVID-19 pandemic, in March 2020 the MAS introduced transitional measures to help insurance companies deal with the financial fallout of the pandemic. Under these new measures, the difference between SGD-denominated liabilities derived using the previous RBC risk free discount rate (where LTRFDR applies) and that derived using the RBC2 risk free discount rates will be recognised as a financial resource adjustment (effectively increasing the capital available to meet risk requirement). This adjustment will decrease proportionally until the end of 2021.

[75] The values shown in Figure 71 for 2019 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 73: REPORTED EV OF SOUTH KOREAN INSURANCE OPERATIONS, 2017-2019[76] [77]

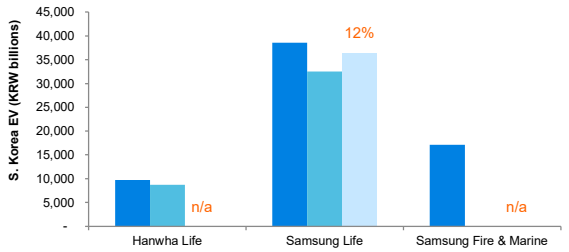


FIGURE 74: REPORTED ANW OF SOUTH KOREAN INSURANCE OPERATIONS, 2017-2019

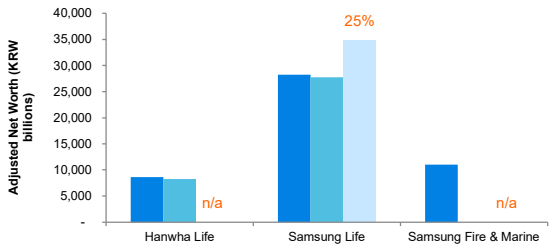


FIGURE 75: REPORTED VIF OF SOUTH KOREAN INSURANCE OPERATIONS, 2017-2019

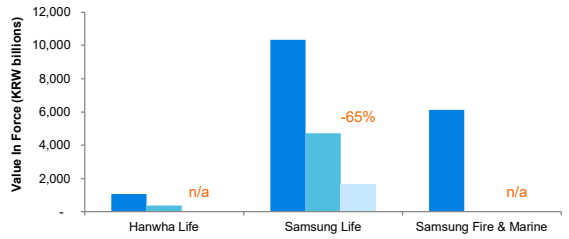


FIGURE 76: REPORTED VIF/ANW SPLIT OF SOUTH KOREAN INSURANCE OPERATIONS, 2019

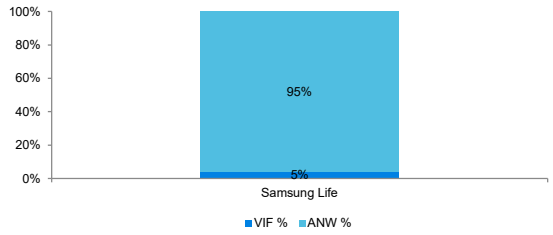


FIGURE 77: REPORTED VNB OF SOUTH KOREAN INSURANCE OPERATIONS, 2017-2019

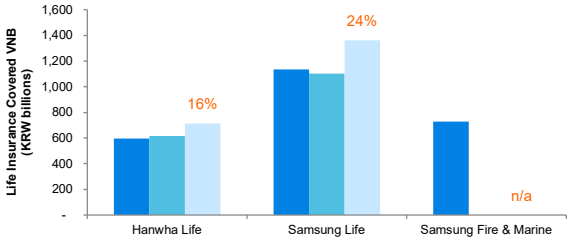


FIGURE 78: REPORTED APE OF SOUTH KOREAN INSURANCE OPERATIONS, 2017-2019[78]

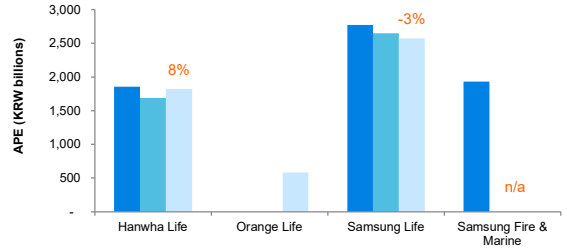
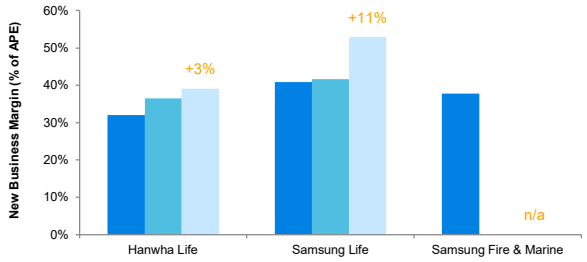


FIGURE 79: REPORTED NEW BUSINESS MARGIN OF SOUTH KOREAN INSURANCE OPERATIONS, 2017-2019



[76] It is important to note that Hanwha Life's EV figure for 2018 is before dividend payout, while past figures are after dividend payout.

[77] Samsung Fire & Marine and Hanwha Life did not disclose their 2019 EV results. Hence, the results are not included in the analysis.

[78] Orange Life is also included under South Korean Insurance Operations for 2019.

Our South Korea analysis includes the EV and VNB results of Samsung Life, as Samsung Fire & Marine and Hanwha Life have not disclosed their 2019 EV results. The RDRs were reduced from 8.60% to 8.10% for AIA and from 8.50% to 7.50% for Samsung Life, in 2019. AIA South Korea's 2019 investment return assumptions reduced from 7.20% to 6.50% for equity and from 2.70% to 2.20% for 10-year government bond yields. Samsung Life has also decreased its investment return assumptions from 3.40% to 3.10%. For comparison, the 10-year government bond yield in South Korea, as at 31 December 2019 was 1.672%, down from 1.956% as at 31 December 2018.

Samsung Life recorded a 65% fall in VIF, citing fall in investment rate assumptions and a change in operating assumptions as the main causes, and a 24% rise in VNB, attributed mainly to increased sales of high margin health products.

One of South Korea's largest life insurers, Orange Life, reported its APE results for the first time. These results have been included in the graphs above.

South Korea's FSC announced the adoption of the new accounting standards laid out by IFRS 17 will been delayed by one year to 2023.

The FSC has asked insurers to establish financial soundness reserves in consideration of additional reserves for liability, government bond yields, cumulative earnings surplus or net profits of insurance companies, in accordance with Article 6-11-2. The method of accumulation and repayment is as follows.

- The insurance company accumulates financial soundness reserves in retained earnings determined by subtracting the greater of insurance liability adequacy value and insurance contract liability at the end of year from the target insurance liability adequacy evaluation amount.
- Notwithstanding the provisions of above paragraph, if an insurance company has an outstanding loss, the financial soundness reserve is accumulated from the time the outstanding loss is handled, and if the previously accumulated financial soundness reserve exceeds the financial soundness reserve to be accumulated as of the settlement date, the excess amount cannot be reversed.

The regulator is working on improving the RBC regime during year 2020, including the following areas:

- Coinsurance will be adopted and will be reflected in the calculation of interest and credit risk.
- Derivatives for hedging purpose will be reflected in the calculation of interest risk.
- Internal models can be used for the calculation of liability interest sensitivity with FSS approval.

Taiwan

FIGURE 80: REPORTED EV OF TAIWANESE INSURANCE OPERATIONS, 2017-2019

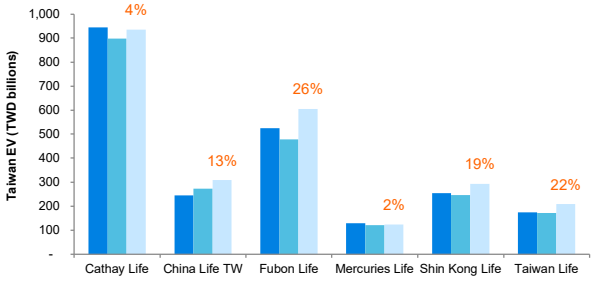


FIGURE 81: REPORTED ANW OF TAIWANESE INSURANCE OPERATIONS, 2017-2019

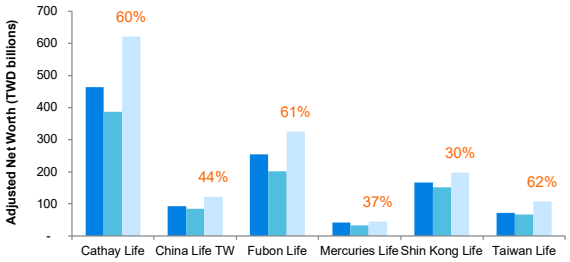


FIGURE 82: REPORTED VIF OF TAIWANESE INSURANCE OPERATIONS, 2017-2019

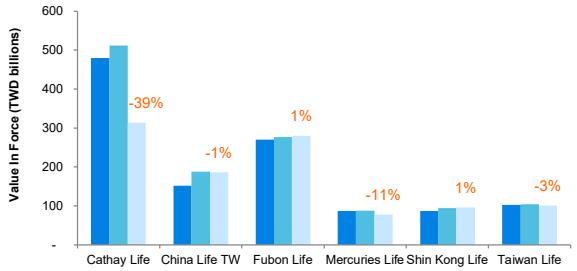


FIGURE 83: REPORTED VIF/ANW SPLIT OF TAIWANESE INSURANCE OPERATIONS, 2019

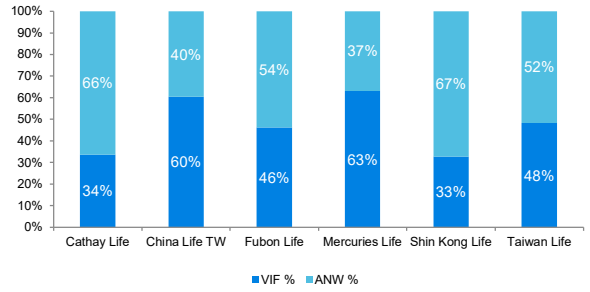


FIGURE 84: REPORTED VNB OF TAIWANESE INSURANCE OPERATIONS, 2017-2019

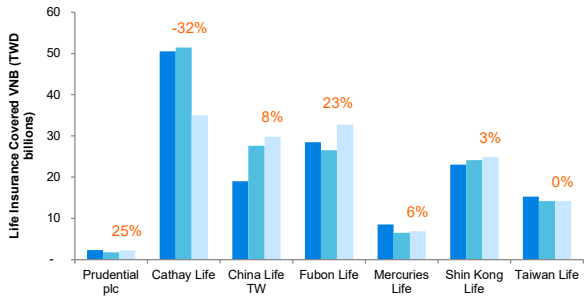


FIGURE 85: REPORTED APE[79] OF TAIWANESE INSURANCE OPERATIONS, 2017-2019

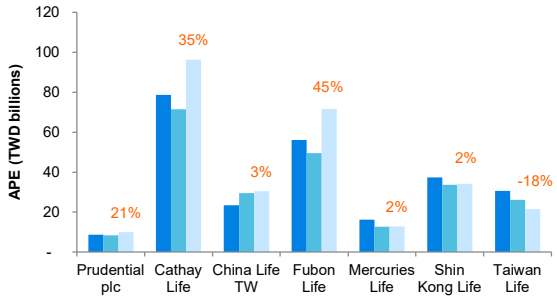
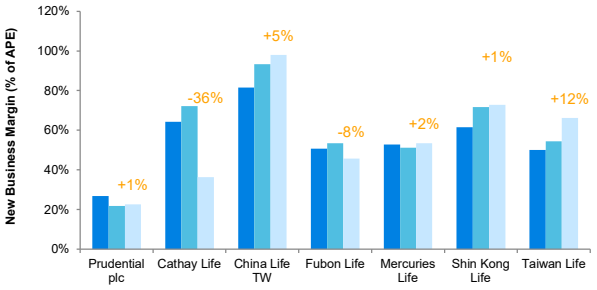


FIGURE 86: REPORTED NEW BUSINESS MARGIN OF TAIWANESE INSURANCE OPERATIONS, 2017-2019



[79] 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.

EVs of all insurers in Taiwan increased over 2019, with Fubon Life reporting the highest increase of 26%, followed by Taiwan Life, reporting an increase of 22% in 2019. A significant increase in ANW was observed among all insurers, of which Taiwan Life recorded the highest increase of 62% closely followed by Fubon Life with 61% increase in ANW. While the VIF numbers for most Taiwanese insurers showed modest changes from those reported in 2018, Cathay Life reported a fall of 39% in VIF, mainly driven by changes in investment yield assumptions.

Whereas most insurers reported an increase in VNB compared to the previous year, Taiwan Life's VNB remained largely unchanged, and Cathay Life's VNB fell by 32%. Prudential plc and Fubon Life reported a VNB growth of 25% and 23% respectively in 2019.

In 2019, Prudential plc decreased its RDR assumption for in-force business from 4.4% to 3%, and new business from 4.5% to 3.4%. Its 10-year government bond yield assumption was also reduced by 20 bps. The domestic life insurers in 2019 typically assumed short-term investment returns between 3.1% and 4.8%, and long-term investment rates of around 4.3% to 6.0%, with RDRs of around 10.5%. For comparison, the 10-year government bond yield stood at approximately 0.65% at the end of 2019, down from 0.87% at the end of 2018. The full set of economic assumptions disclosed in the market is set out in Figure 103 below.

For the implementation of IFRS17, and to improve low equity-to-asset ratios of insurers, Taiwan's Financial Supervisory Commission (FSC) has decided to strengthen regulations for Taiwanese life insurers later this year. The regulator is also seeking to promote traditional products and discourage use of insurance as a wealth management option for the insured. As the international implementation of IFRS17 has been postponed to 2023, the expected IFRS17 implementation date agreed by Taiwan regulator is also postponed by a year to January 2026.

With the aim to strengthen insurers' capital base, FSC is looking to add a new metric to the existing RBC measure, whereby insurers will be required to strengthen their capital if their net assets to total assets ratio falls below 3% consecutively for two six-month periods.

A new regulation for Taiwanese life insurers' investment-linked policies became effective on 1 March 2020, barring target maturity bond funds linked to these policies from investing in bonds rated below Baa1 from Moody's or equivalent ratings from other rating agencies.

Thailand

FIGURE 87: REPORTED EV[80] OF THAILAND INSURANCE OPERATIONS, 2017-2019[81]

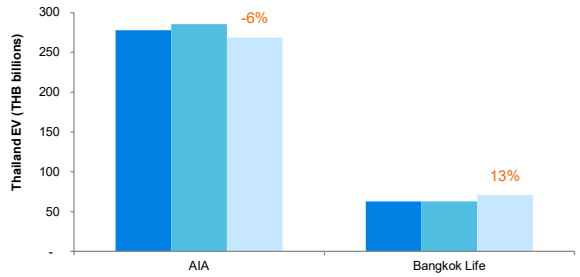


FIGURE 88: REPORTED ANW OF THAILAND INSURANCE OPERATIONS, 2017-2019[82]

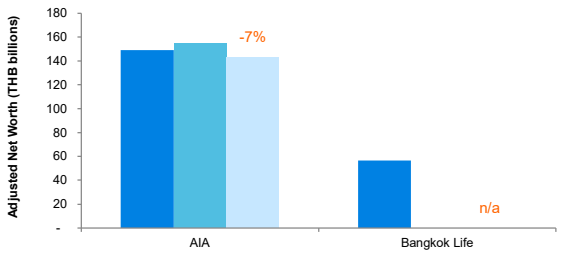


FIGURE 89: REPORTED VIF OF THAILAND INSURANCE OPERATIONS, 2017-2019[81]

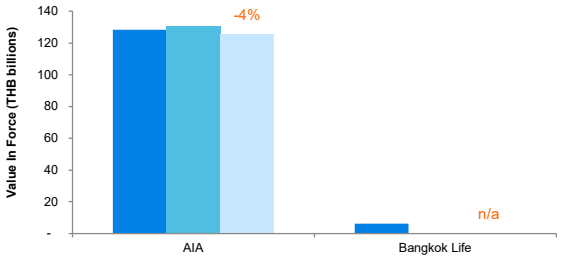


FIGURE 90: REPORTED VIF/ANW SPLIT OF THAILAND INSURANCE OPERATIONS, 2019

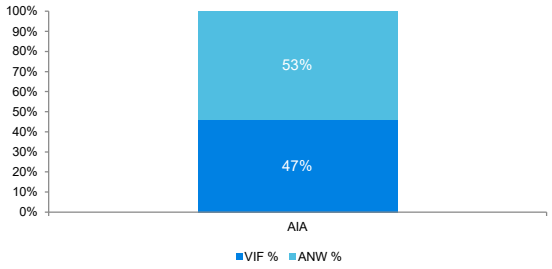


FIGURE 91: REPORTED VNB OF THAILAND INSURANCE OPERATIONS, 2017-2019

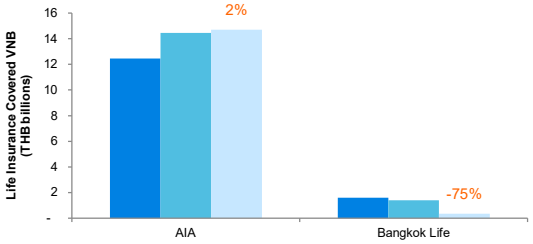


FIGURE 92: REPORTED APE OF THAILAND INSURANCE OPERATIONS, 2017-2019[83]

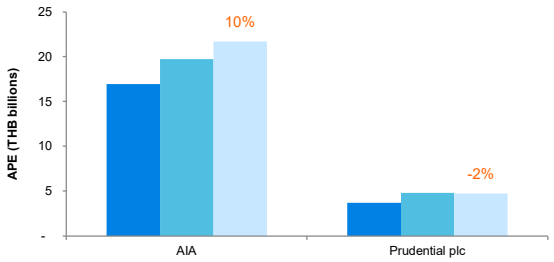
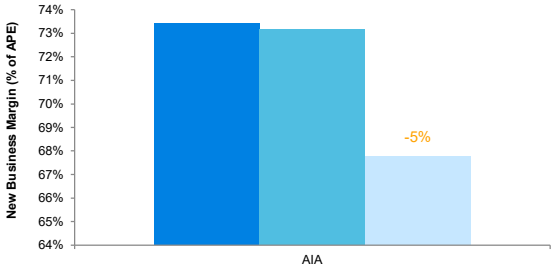


FIGURE 93: REPORTED NEW BUSINESS MARGIN OF THAILAND INSURANCE OPERATIONS, 2017-2019



[80] EV, VNB and APE throughout this section have been converted to local currency using the prevailing exchange rates applicable at each reporting date (2017, 2018 and 2019).

[81] The FX rates used for conversion to local currency (for all charts) are listed in Appendix B.

[82] Bangkok Life 2018 and 2019 ANW and VIF has not been disclosed.

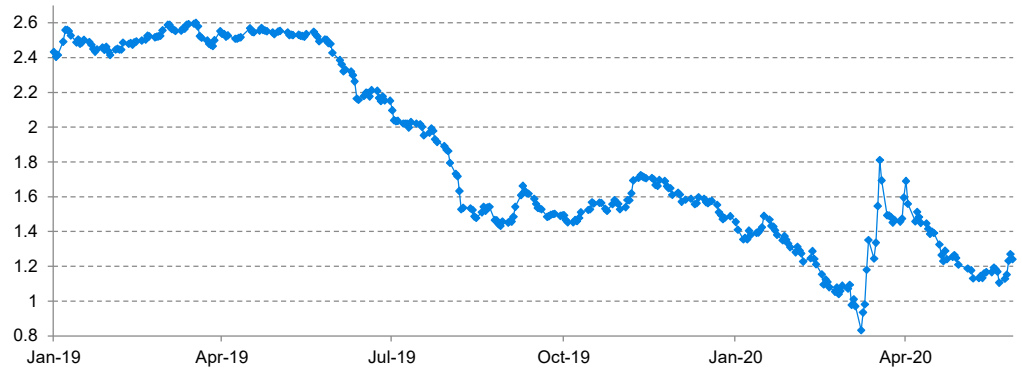
[83] Bangkok Life stopped disclosing APE in 2016 and therefore is excluded from the list. Prudential plc only discloses APE for its Thailand operations.

AIA and Bangkok Life are the only life insurance companies have disclosed their EV and VNB results in recent years in Thailand. The 2019 EV results for Prudential are not disclosed (they are part of an aggregated classification), but there is some information provided on the underlying EV assumptions. Prudential Thailand reduced its RDR and long-term 10-year government bond yield assumptions to 9.2% and 1.5%, respectively, in 2019.

Bangkok Life reported a significant decline in VNB of 75% in 2019. The company attributed the decrease to a decline in first year premium (FYP) from the bancassurance channel and a reduction in investment return and RDR assumptions to 3.50% and 8.30% in 2019 from 4.25% and 9.00% in 2018, respectively.

Medium and longer-dated Thai government bond yields fell further in 2019. The 10-year Thai government bond yield declined sharply over 2Q 2019 and 3Q 2019, with an overall drop of almost 100bps in the year, ending 2019 at 1.5%. The directional movement in government bond yields in 1H2020 has been downwards, with 10-year government bond yields falling below 1% at one point. Such economic conditions are challenging as lower local government bond yields result in increased gross premium valuation reserves and higher interest rate risk charges for many insurers, reducing profitability of many savings-oriented products.

FIGURE 94: HISTORICAL 10-YEAR THAILAND GOVERNMENT BOND YIELDS



Source: the Thai Bond Market Association

AIA Thailand's 2019 year-end assumptions for long-term equity return, 10-year government bond yield and RDR reduced to 7.7%, 2.7% and 7.9%, respectively. On a constant currency basis, AIA Thailand's EV grew by 2% over 2019. After converting AIA's EV disclosure to local currency terms using exchange rates as at the valuation date, its EV fell by 6% over 2019. AIA Thailand recorded APE growth of 10% in 2019, which the company attributed to the promotion and expansion of additional critical illness products. AIA Thailand's VNB increased by 2% in local currency terms (6% in USD terms), mainly supported by robust sales momentum in its 'Financial Adviser' (FA) agency channel and positive development with its strategic long-term partnership with Bangkok Bank. Overall, its VNB margin remained very strong, at 67.7%.

Industry life insurance total unweighted premium has been experiencing decelerating growth rates since 2015, with negative growth rate of 2.6% in 2019 to a level of THB 611 billion. Although total unweighted new business (NB) sales dropped by 1.1% in 2019, the growth in weighted NB premium (NB APE, i.e., 10% of single premium + 100% of first year premium from the Thai Life Assurance Association (TLAA) statistics) grew by 11% in 2019 (after falls of 5% in 2018 and 5% in 2017), mainly due to a 18% drop in single premium sales.

The revised RBC framework, RBC2, has replaced the old RBC1 framework effective from year-end 2019. The key changes under the new framework include:

- The valuation of policy loans
- Revised provision for adverse deviation
- Recalibration of risk charge parameters
- Introduction of operational risk

The initial implementation of RBC2 is at the 95% confidence interval level, and most industry players have not been significantly affected by the change to the new regime.

In response to the continuing falls in interest rates and fixed interest yields, the OIC, the regulating body of the Thai insurance industry, has lowered the minimum pricing interest rate from 2% to 1%.

The OIC has also provided several temporary relief measures in response to the COVID-19 pandemic, which include extending the grace period for premium payment and policy loan payment, and giving companies the option to cut interest rates on policy loans during the relief period.

Vietnam

FIGURE 95: REPORTED EV OF VIETNAM INSURANCE OPERATIONS, 2017-2019

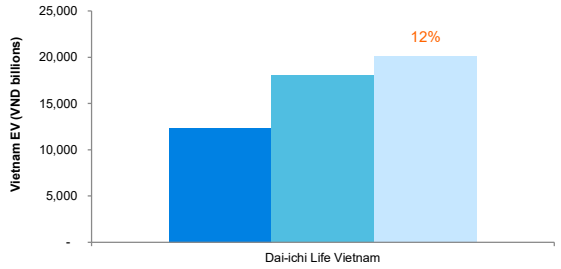


FIGURE 96: REPORTED ANW OF VIETNAM INSURANCE OPERATIONS, 2017-2019

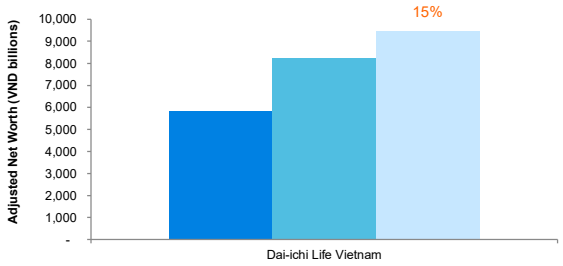


FIGURE 97: REPORTED VIF OF VIETNAM INSURANCE OPERATIONS, 2017-2019

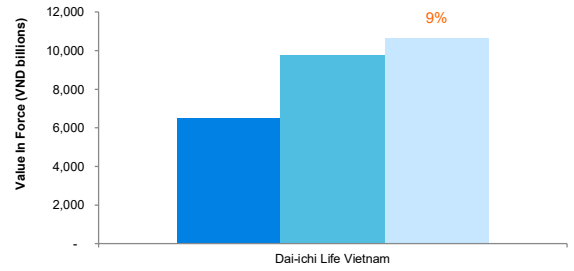


FIGURE 98: REPORTED VIF/ANW SPLIT OF VIETNAM INSURANCE OPERATIONS, 2019

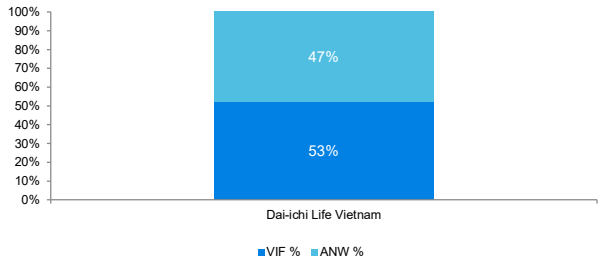


FIGURE 99: REPORTED VNB OF VIETNAM INSURANCE OPERATIONS, 2017-2019

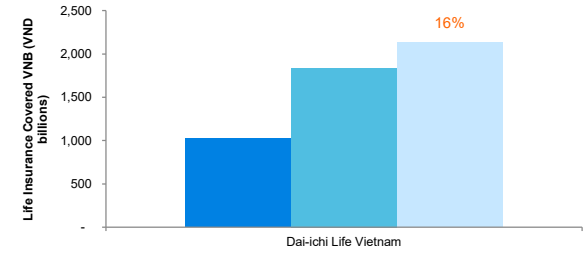


FIGURE 100: REPORTED PVNBP[84] OF VIETNAM INSURANCE OPERATIONS, 2017-2019

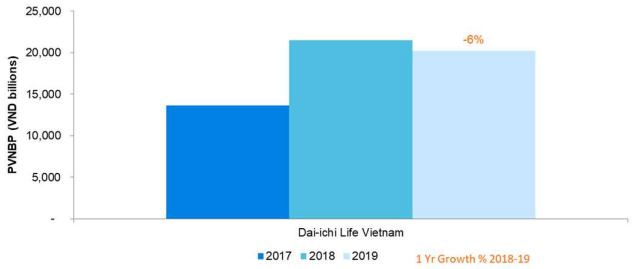
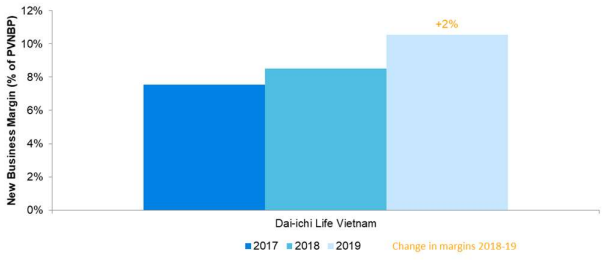


FIGURE 101: REPORTED NEW BUSINESS MARGIN OF VIETNAM INSURANCE OPERATIONS, 2017-2019



[84] Prudential plc has been excluded from this graph as they do not disclose PVBNP numbers.

Dai-ichi Life is the only company that discloses separate 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 12% in 2019 on a constant currency basis[85].

Dai-ichi Life Vietnam discloses a RDR of 10.0% but no investment return assumptions. The 2019 EV results for AIA and Prudential 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 100bps for 2019, to 10.8% and 5.0% in 2019, respectively. Noticeably, Prudential Vietnam reduced its RDR for in-force business significantly from 12.6% at year-end 2018 to 5.5% at year-end 2019, and also decreased its long-term 10-year government bond yield assumption from 5.1% at year-end 2018 to 3.4% at year-end 2019. The reduction in RDR was said by the company to be due to 'refinements in methodology to reflect a more granular assessment of the underlying market risks within the calculation basis.'

The reduction in long-term government bond yields assumptions noted above is consistent with continued downward pressure on the yield curve in Vietnam during 2019 and continuing into 1H2020. The local 10-year government bond yield was 3.38% at the end of 2019, and dropped below 2.3% for a period during March 2020 before recovering to over 3% at the end of May 2020[86]. In an industry event hosted by Milliman for senior executives in Ho Chi Minh City in late November 2019, 83% of participants thought that the 10-year local government bond yield would be no higher than 4% in 12 months' time. Milliman published an e-Alert briefing of this event, which is available here.

The low interest environment continues to present significant challenges for life insurers in managing non-participating and participating portfolios with more material financial guarantees. Some insurers have deviated from strategic asset allocations to invest more assets 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. We have also seen several players increasing their holdings of corporate bonds. There has been a shift from participating business to universal life business for several insurers, including for companies selling through bancassurance, which continues to grow as a channel in Vietnam.

In general, the Vietnam life market showed robust growth in 2019, with total GWP increasing by 25.1% to VND 106.9 trillion and new business premium growing by 18.6% to VND 34.5 trillion.

[85] To provide comparability and eliminate FX effects, results for all years for all MNCs/markets have been converted to USD using the prevailing FX rate as at the 2019 reporting date.

[86] 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
- 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

COMPANY	EV PRINCIPLE	RDR	INVESTMENT RETURNS
AIA	TEV	China: 9.75% Hong Kong: 7.20% Indonesia: 13.00% Korea: 8.10% Malaysia: 8.55% Philippines (Philam Life): 11.80% Singapore: 6.90% Sri Lanka: 15.70% Taiwan: 7.55% Thailand: 7.90 % Vietnam: 10.80%	China: Equities 9.30%, 10Y Gov't Bonds 3.70% Hong Kong: Equities 7.50%, 10Y Gov't Bonds 2.70% 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 7.00%, 10Y Gov't Bonds 2.50% Sri Lanka: Equities 12.00%, 10Y Gov't Bonds 10.00% Taiwan: Equities 5.90%, 10Y Gov't Bonds Current 0.67%, Long Term 1.30% Thailand: Equities 7.70%, 10Y Gov't Bonds 2.70% Vietnam: Equities 10.30%, 10Y Gov't Bonds 5.00%
ALLIANZ	MCEV/SII	Risk-free interest rate curves, allowing for volatility adjustment	Risk-free interest rate curves, allowing for volatility adjustment
AVIVA	SII	Risk-free interest rate curves, allowing for credit risk adjustment, volatility adjustment and matching adjustment.	Risk-free interest rate curves, allowing for credit risk adjustment, volatility adjustment and matching adjustment.
AXA	EEV	Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment. The volatility adjustment applied for 2019 was: JPY: 2bps, HKD: 29bps	Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment. The volatility adjustment applied for 2019 was: JPY: 2bps, HKD: 29bps
GREAT EASTERN	TEV	Singapore: 7.00% Malaysia: 8.75% Indonesia: 13.5%	Not disclosed
MANULIFE	TEV	Not disclosed	Not disclosed
PRUDENTIAL PLC	EEV	China: 8.20% (NB), 8.20% (IF) Hong Kong: 3.70% (NB), 3.70% (IF) Indonesia: 10.80% (NB), 10.80% (IF) Malaysia: 5.80% (NB), 5.90% (IF) Philippines: 12.30% (NB), 12.30% (IF) Singapore: 3.30% (NB), 3.90% (IF) Taiwan: 3.40% (NB), 3.00% (IF) Thailand: 9.20% (NB), 9.20% (IF) Vietnam: 5.30% (NB), 5.50% (IF)	China: Gov't Bonds 3.20% Hong Kong: Gov't Bonds 1.90%, Equities 4.80% Indonesia: Gov't Bonds 7.20% Malaysia: Gov't Bonds 3.30%, Equities 7.30% Philippines: Gov't Bonds 4.60% Singapore: Gov't Bonds 1.70%, Equities 5.70% Taiwan: Gov't Bonds 0.70% Thailand: Gov't Bonds 1.50% Vietnam: Gov't Bonds 3.40%
ZURICH	MCEV	Swap rates, allowing for volatility adjustment	Swap rates, 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. Despite their contrasting methodologies (TEV versus EEV), their government bond yield assumptions are quite similar for some markets (e.g., Indonesia, China) but diverge sharply for other markets (e.g., Vietnam, Thailand, Hong Kong and Singapore).

FIGURE 103: RDR AND INVESTMENT ASSUMPTIONS OF INSURERS BY MARKET[87] [88]

MARKET	COMPANY	EV PRINCIPLE	RDR	INVESTMENT RETURNS
China	Chinese 10-year government bond yield at 31 December 2019: 3.173%			
	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	11.50%	Year 1: 4.50% (non-linked), 7.60% (linked) Year 2: 4.60% (non-linked), 4.7% (universal life), 7.60% (linked) Year 3: 4.80% (non-linked), 5.00% (universal life), 7.80% (linked) Year 4+: 5.00% (non-linked), 5.10% (universal life), 7.90% (linked)
	PICC Life	TEV	10.00%	5.25%
	Ping An	TEV	11.00%	Non-investment-linked: 4.75% in Year 1 and 5.00% thereafter Investment-linked: slightly higher than non-investment-linked
	Prudential	EEV	8.20%	Gov't Bonds 3.2%
Hong Kong	Hong Kong 10-year government bond yield at 31 December 2019: 1.822%			
	AIA	TEV	7.20%	Equities 7.50%, 10Y Gov't Bonds 2.70%
	AXA	EEV	Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment.	Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment.
	Tahoe Life	TEV	Not disclosed	Not disclosed
	Manulife	TEV	Not disclosed	Not disclosed
	Prudential	EEV	3.70%	Equity return 4.80%, Gov't Bonds 1.90%
India	Indian 10-year government bond yield at 31 March 2020 : 6.138%			
	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
	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

[87] Entries shaded in blue indicate that the 2019 RDR and investment assumptions have not yet been disclosed, and that the assessment has been based on 2018 disclosures instead.

[88] Source for the 10-year government bond yields for all markets is at https://www.investing.com.

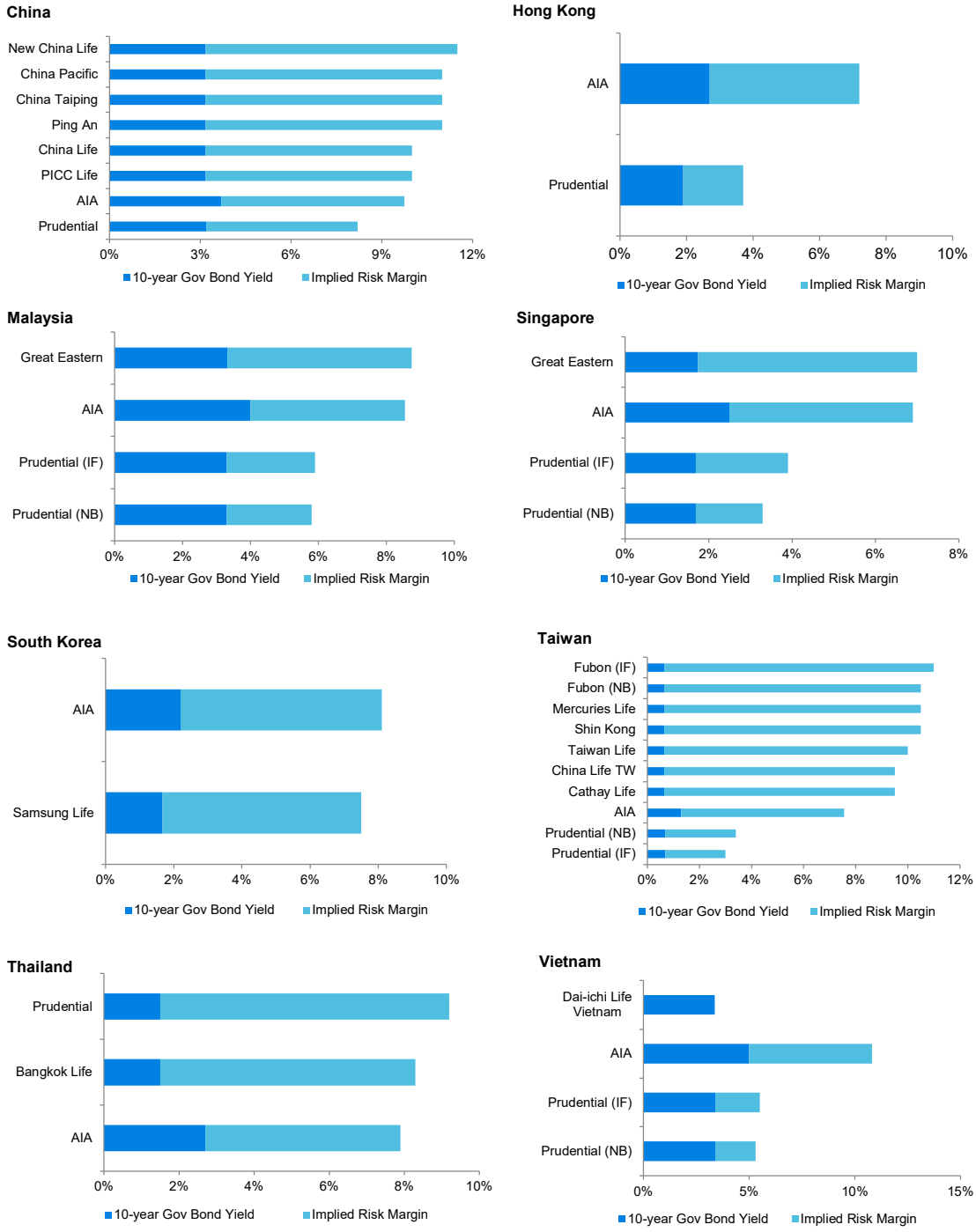
MARKET	COMPANY	EV PRINCIPLE	RDR	INVESTMENT RETURNS
	Reliance Nippon Life	TEV	Not disclosed	Not disclosed
	SBI Life	IEV	Risk-free yield curve	Risk-free yield curve
Japan	**Japanese 10-year government bond yield at 31 March 2020 : .004%**			
	AXA	MCEEV	Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment.	Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment.
	Manulife	TEV	Japan: 5.75%	Japan: 5.75%
	Daido Life	MCEV	Risk-free rate: Based on JGB and UFRs. Risk-free rate (Foreign currencies): Based on swap rates extrapolated by assuming that forward rates in after the latest market data point available are flat.	Risk-free interest rate curves
	Dai-ichi Life	MC-EEV	Risk-free rate (JPY): Based on JGB and UFRs. Foreign currencies: Based on swap rates extrapolated by assuming forward rates in the 31st year and beyond were equal to those in the 30th year.	Risk-free interest rate curves
	Dai-ichi Frontier Life	MC-EEV	Risk-free rate (JPY): Based on JGB and UFRs. Foreign currencies: Based on swap rates extrapolated by assuming forward rates in the 31st year and beyond were equal to those in the 30th year.	Risk-free interest rate curves
	Japan Post Insurance Co Ltd	MC-EEV	Risk-free rate (based on JGB and UFRs).	Risk-free interest rate curves
	LifeNet Insurance	MC-EEV	Risk-free rate (based on swap rates and UFRs).	Risk-free interest rate curves
	Medicare Life	MC-EEV	Risk-free rate (Based on Japanese, U.S. and Australian Government Bond and 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
	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

MARKET	COMPANY	EV PRINCIPLE	RDR	INVESTMENT RETURNS
	T&D Financial Life	MCEV	Risk-free rate (JPY): Based on JGB and UFRs. Risk-free rate (Foreign currencies): Based on swap rates extrapolated by assuming that forward rates in after the latest market data point available are flat.	Risk-free interest rate curves
	Taiyo Life	MCEV	Risk-free rate (JPY): Based on JGB and UFRs. Risk-free rate (Foreign currencies): Based on swap rates extrapolated by assuming that forward rates after the latest market data point available are flat.	Risk-free interest rate curves
	Tokio Marine & Nichido Life	MCEV	Risk-free rate (JPY): Based on JGB and 41st year and thereafter are set to the 40-year spot rate adjusted based on historical interest rate movements. Risk-free rate (Foreign currencies): Based on swap rates extrapolated by assuming that forward rates in the 31st year and beyond were equal to those in the 30th year.	Risk-free interest rate curves
Indonesia	**Indonesian 10-year government bond yield at 31 December 2019: 7.047%**			
	AIA	TEV	13.00%	Equities 12.00%, 10Y Gov't Bonds 7.50%
	Prudential	EEV	10.80%	10Y Gov't Bonds 7.20%
Malaysia	**Malaysian 10-year government bond yield at 31 December 2019: 3.316%**			
	AIA	TEV	8.55%	Equities 8.60%, 10Y Gov't Bonds 4.00%
	Great Eastern	TEV	8.75%	Not disclosed
	Hong Leong Assurance	Not disclosed	Not disclosed	Not disclosed
	Prudential	EEV	5.80% (NB), 5.90% (IF)	Equities 7.30%, Gov't Bonds 3.30%
Philippines	**Philippines 10-year government bond yield at 31 December 2019: 4.483 %**			
	AIA	TEV	11.80%	Equities 10.50%, 10Y Gov't Bonds 5.30%
	Prudential	EEV	12.30%	Gov't Bonds 4.60%
Singapore	**Singaporean 10-year government bond yield at 31 December 2019: 1.740%**			
	AIA	TEV	6.90%	Equities 7.00%, 10Y Gov't Bonds 2.50%
	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	7.00%	Not disclosed
	Prudential	EEV	3.30% (NB), 3.90% (IF)	Equities: 5.70%, Gov't Bonds 1.70%
South Korea	**Korean 10-year government bond yield at 31 December 2019: 1.672%**			
	AIA	TEV	8.10%	Equities 6.50%, 10Y Gov't Bonds 2.20%
	DB Insurance	TEV	8.50%	3.20%
	Hanwha Life	TEV	8.50%	3.35%
	Orange Life	Not disclosed	Not disclosed	Not disclosed
	Samsung Life	TEV	7.50%	3.10%
	Samsung Fire & Marine	TEV	8.50%	3.30%
Taiwan	**Taiwan 10-year government bond yield at 31 December 2019: 0.652%**			
	AIA	TEV	7.55%	Equities 5.90%; 10Y Gov't Bonds Current 0.67%, Long term 1.30%

MARKET	COMPANY	EV PRINCIPLE	RDR	INVESTMENT RETURNS
	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: 2.41% ~ 4.35% (2039+) USD Products: 3.86% ~ 5.15% (2039+) VIF TWD Products: 3.57% ~ 4.61% (2039+) USD Products : 4.36% ~ 5.24% (2039+)
	China Life TW	TEV	9.50%	TWD Policies: Year 1 ~ Year 19: 3.50% ~ 4.88% Year 20+: 4.88% Non-TWD Policies: Year 1 ~ Year 19: 4.30% ~ 5.20% Year 20+: 5.20%
	Fubon	TEV	VNB: 10.50% VIF: 11.00%	VNB NTD Traditional Policies: Year 2019 to Year 2048 at 2.91% ~ 4.91% (2049+) USD Policies: Year 2019 to Year 2042 at 3.51% ~ 5.50% (2043+) VIF NTD Traditional Policies: Year 2020 to Year 2044 at 3.47% ~ 5.00% (2045+) USD Policies: Year 2020 to Year 2042 at 4.32% ~ 5.52% (2043+)
	Mercuries Life	TEV	10.50%	VNB TWD Products: 3.20% ~ 5.00% (2041+) USD Products: 3.90% ~ 6.00% (2033+) VIF TWD Products: 3.50% ~ 5.00% (2046+) USD Products : 4.20% ~ 6.00% (2044+)
	Prudential	EEV	3.40% (NB), 3.00% (IF)	10-Year Gov't Bonds 0.7%
	Shin Kong	TEV	10.50%	VNB TWD Products: 3.12% ~ 4.47% USD Products: 4.13% ~ 5.00% VIF TWD Products: 3.30% ~ 4.62% USD Products: 4.59% ~ 5.09%
	Taiwan Life	TEV	10.00%	TWD Policies: Year 2020 to Year 2039 at 3.52% ~ 4.00% (2040+) USD Policies: Year 2020 to Year 2039 at 4.60% ~ 5.03% (2040+)
Thailand	**Thailand 10-year government bond yield at 31 December 2019: 1.495%**			
	AIA	TEV	7.90%	Equities 7.70%, 10Y Gov't Bonds 2.70%
	Bangkok Life	TEV	8.30%	3.50%
	Prudential	EEV	9.20%	Gov't Bonds 1.50%
Vietnam	**Vietnamese 10-year government bond yield at 31 December 2019: 3.378%**			
	AIA	TEV	10.80%	Equities 10.30%, 10Y Gov't Bonds 5.00%
	Dai-ichi Life Vietnam	TEV	10.00%	Not disclosed
	Prudential	EEV	5.30% (NB), 5.50% (IF)	Gov't Bonds 3.40%

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.

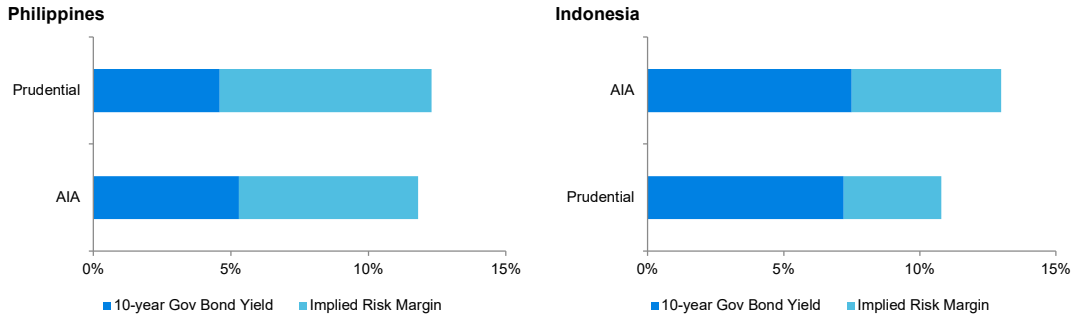
FIGURE 104: 2019 PROXY RISK-FREE RATES AND IMPLIED RISK MARGINS[89] [90] BY COMPANY[91] FOR EACH MARKET



[89] 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 2019 reporting date.

[90] The 10-year government bond yields have been extracted from http://www.investing.com.

[91] 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.



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[92] 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, in particular, 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 is in contrast to 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.

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). Cost of capital 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.

[92] 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.

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 2018, 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 also taking into consideration the results from their internal models.

An important assumption behind EV calculations is the level of solvency margin 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 solvency margin assumed by insurers for their Asian operations.

FIGURE 105: SUMMARY OF SOLVENCY MARGIN REQUIREMENTS BY COMPANY[93]

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: 180% 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	EEV	150% for other entities outside European Economic Area (EEA) with limitations on soft capital to half of the target solvency capital.
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 Philippines: 125% RBC Singapore: 160% CAR Vietnam: 100% minimum SM Hong Kong: 150% minimum SM
MNC	Prudential plc	EEV	At least equal to local statutory notification requirements

[93] Shaded entries indicate that the 2019 required solvency capital information has not yet been disclosed, and that the assessment has been based on 2018 disclosures instead.

CATEGORY	COMPANY	EV METHODOLOGY	REQUIRED CAPITAL
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	200% RBC
CHINA	China Pacific	TEV	Not disclosed
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	150% of factor-based solvency requirements
INDIA	Kotak Life	IEV	Not disclosed
INDIA	Max Life	MCEV	170% of RSM
INDIA	PNB MetLife	IEV	170% of RSM
INDIA	Reliance Nippon Life	TEV	Not disclosed
INDIA	SBI Life	IEV	180% of factor-based solvency requirements
JAPAN	Daido Life	MCEV	Sum of Japanese regulatory minimum capital requirement and 133% of economic capital.
JAPAN	Dai-ichi Life	MC-EEV	Capital required to maintain 400% Solvency Margin Ratio
JAPAN	Dai-ichi Frontier Life	MC-EEV	Capital required to maintain 400% Solvency Margin Ratio
JAPAN	Japan Post Insurance Co Ltd	MC-EEV	Capital required to maintain 600% Solvency Margin Ratio
JAPAN	LifeNet Insurance	MC-EEV	Capital required to maintain 500% Solvency Margin Ratio
JAPAN	Medicare Life	MC-EEV	Not disclosed
JAPAN	Meiji Yasuda Life	MC-EEV	Capital required to maintain 350% regulatory solvency margin ratio
JAPAN	MS&AD Aioi Life	MC-EEV	Capital required to maintain 600% Target Solvency Margin Ratio
JAPAN	MS&AD Primary Life	MC-EEV	Capital required to maintain 600% Target Solvency Margin Ratio
JAPAN	Neo First Life	MC-EEV	Capital required to maintain 400% Solvency Margin Ratio
JAPAN	Sompo Himawari Life	MCEV	Capital required to maintain 600% statutory solvency margin ratio
JAPAN	Sony Life	MCEV	Higher of Japanese regulatory minimum capital requirement (200% Solvency Margin Ratio) or internal target
JAPAN	Sumitomo Life	MC-EEV	Not disclosed
JAPAN	T&D Financial Life	MCEV	Higher of Japanese regulatory minimum capital requirement and 133% of economic capital
JAPAN	Taiyo Life	MCEV	Higher of Japanese regulatory minimum capital requirement 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	Not disclosed

CATEGORY	COMPANY	EV METHODOLOGY	REQUIRED CAPITAL
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 solvency margin at which they believe regulatory intervention will occur. The exceptions to this are as follows:

- In Singapore, where AIA uses 180% while Manulife uses 160% (Great Eastern did not disclose the minimum regulatory level for 2019)
- In Malaysia, where AIA uses 170% and Manulife uses 160% (Great Eastern did not disclose the minimum regulatory level for 2019)
- In Taiwan, where AIA uses 250% compared with the 200% used by all domestic insurers

A few companies notably do not disclose their required solvency margin 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[94] 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.

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 1,000 economic scenarios on a market-consistent basis.

[94] 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.

FIGURE 106: SUMMARY OF TVOG APPROACHES

COMPANY TYPE	COMPANY	OPTIONS AND GUARANTEES	SCENARIOS	USE OF DYNAMIC POLICYHOLDER BEHAVIOUR	CALCULATED FOR ASIAN OPERATIONS? (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	Yes (EUR 423 million for VNB)
MNC	Prudential	Stochastic	Not disclosed	Not disclosed	Yes (USD 493 million)
MNC	Zurich	Market-consistent, stochastic	1,000	Yes	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	Yes (INR 0.97 billion)
India	HDFC Life	Not disclosed	Not disclosed	Not disclosed	Not disclosed
India	SBI Life	Not disclosed	Not disclosed	Not disclosed	Yes (INR 0.9 billion)
India	Kotak Life	Not disclosed	Not disclosed	Not disclosed	Not disclosed
India	Max Life	Stochastic	5,000	Not disclosed	Yes (INR 0.6 billion)
Japan	Dai-ichi Life	Market-consistent, stochastic	5,000	Yes	Yes (JPY 126 billion)
Japan	Dai-ichi Frontier Life	Market-consistent, stochastic	5,000	Yes	Yes (JPY 14 billion)
Japan	Japan Post Insurance Co Ltd	Market-consistent, stochastic	5,000	Yes	Yes (JPY 456 billion)
Japan	Neo First Life	Market-consistent, stochastic	5,000	Yes	Yes
Japan	LifeNet Insurance	TVOG is zero.	Not used	No	Set as NIL
Japan	Medicare Life	Market-consistent, stochastic	5,000	Yes	Yes (JPY 0.1 billion)
Japan	Meiji Yasuda Life	Market-consistent, stochastic	5,000	Yes	Yes (JPY 153.6 billion)
Japan	MS&AD Aioi Life	Market-consistent, stochastic	5,000	Yes	Yes (JPY 45.3 billion)
Japan	MS&AD Primary Life	Market-consistent, stochastic	5,000	Yes	Yes (JPY 52.8 billion)
Japan	Sompo Himawari Life	Market-consistent, stochastic	1,000	Yes	Yes (JPY 9.9 billion)
Japan	Sony Life	Market-consistent, stochastic	1,000	Yes	Yes (JPY 125 billion)
Japan	Sumitomo Life	Market-consistent, stochastic	5,000	Yes	Yes (JPY 95 billion)
Japan	Tokio Marine & Nichido Life	Market-consistent, stochastic	1,000 or 2,000	Yes	Yes (JPY 21.9 billion)
Japan	T&D Financial Life	Market-consistent, stochastic	5,000	Yes	Yes (JPY 0.2 billion)
Japan	Taiyo Life	Market-consistent, stochastic	5,000	Yes	Yes (JPY 35.7 billion)
Japan	Daido Life	Market-consistent, stochastic	5,000	Yes	Yes (JPY 43.9 billion)

Figure 106 discloses the TVOG approaches at a group level. For example, Prudential 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, 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 2019[95]

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	EEV	✓		✓	✓	✓	✓	✓	✓	✓
	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 Himawari Life	MCEV	✓	✓		✓	✓	✓	✓	✓	✓
	Sony Life	MCEV	✓	✓		✓	✓	✓	✓	✓	✓
	Sumitomo Life	MC-EEV	✓	✓		✓	✓	✓	✓	✓	✓
	T&D Financial Life	MCEV	✓	✓		✓	✓	✓	✓		
	Taiyo Life	MCEV	✓	✓		✓	✓	✓	✓		

[95] Blue shaded entries indicate that the 2019 EV results have not yet been disclosed, and that the assessment has been based on 2018 disclosures instead.

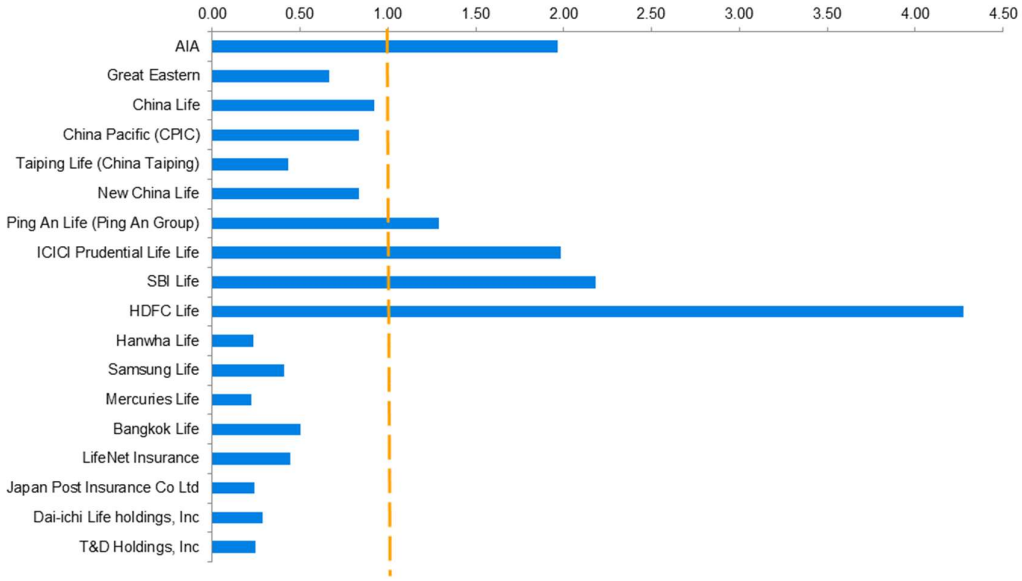
TYPE	COMPANY	EV PRINCIPLE	EVIDENCE OF INDEPENDENT REVIEW OF EV RESULTS	ANALYSIS OF EV MOVEMENT	RECONCILIATION OF ANW TO IFRS NET ASSETS	COST OF CAPITAL/ REQUIRED CAPITAL	RDR ASSUMPTIONS	INVESTMENT RETURN ASSUMPTIONS	EXPENSE INFLATION ASSUMPTIONS	NEW BUSINESS MARGIN INFORMATION	EV AND VNB SENSITIVITIES
	Tokio Marine & Nichido Life	MCEV	✓	✓		✓	✓	✓	✓	✓	✓
KOREA	Hanwha Life	TEV		✓		✓	✓	✓	✓	✓	✓
	Samsung Life	TEV		✓			✓		✓	✓	✓
TAIWAN	Cathay Life	TEV	✓			✓	✓	✓		✓	✓
	China Life TW	TEV	✓			✓	✓	✓		✓	
	Fubon	TEV	✓	✓		✓	✓	✓		✓	✓
	Mercuries Life	TEV	✓	✓		✓	✓	✓			✓
	Shin Kong Life	TEV	✓	✓		✓	✓	✓	✓		✓
	Taiwan Life	TEV	✓	✓	✓	✓	✓	✓			✓
THAILAND	Bangkok Life	TEV	✓								
VIETNAM	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 2019 REPORTING DATES



* 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 return on embedded value is calculated as the EV operating profit for the year expressed as a percentage of opening EV.

Figure 109 tabulates the ROEV disclosed by selected companies in Asia for 2018 and 2019.

FIGURE 109: ROEV FOR 2018 AND 2019

COMPANY TYPE	COMPANY	EV METHODOLOGY	ROEV (2018)	ROEV (2019)
MNC	AIA	TEV	16.30%	15.90%
MNC	Prudential plc	EEV	19.00%	16.00%
MNC	T&D Holdings, Inc.	MCEV	0.30%	0.90%
China	Ping An	TEV	30.80%	25.00%
India	Aditya Birla Sun Life	MCEV	15.00%	13.20%
India	HDFC Life	IEV	20.10%	18.10%
India	ICICI Prudential Life	IEV	20.20%	15.20%
India	Max Life	MCEV	21.90%	20.30%
India	SBI Life	IEV	17.40%	20.50%
Japan	Japan Post Insurance Co Ltd	MC-EEV	8.60%	-2.80%
South Korea	Hanwha Life	TEV	8.60%	Not disclosed
South Korea	Orange Life	Not Disclosed	8.80%	Not disclosed
South Korea	Samsung Life	TEV	6.40%	2.30%

IFRS17

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 IFRS4 standards (called 'Phase I,' implemented in 2004) focusing on a current view of assets and liabilities together with current profit generation compared with embedded value, 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: IFRS17. 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 and reported information based on current estimates.

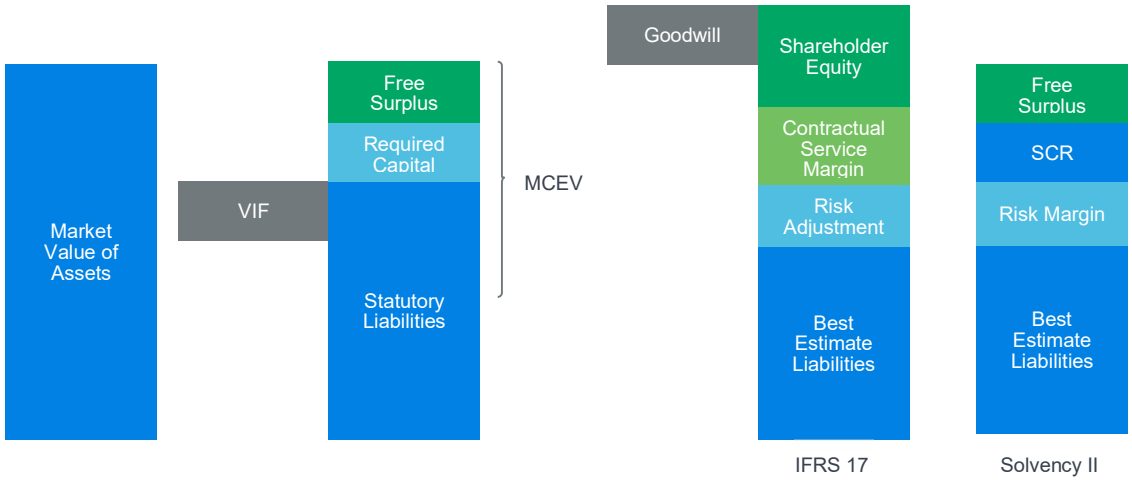
In summary, the principle-based standard requires an assessment of the profitability of insurance contracts when they are first issued and, if positive, recognition of that value over the lifetime of the contracts in a manner that reflects the timing of the insurance services provided by the insurer. 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 so that it is consistent with observable market prices of financial instruments comparable with the cash flow of the insurance liabilities, but should exclude those factors in market prices which do not affect the future cash flows of the insurance contracts (for example, default risk).
- 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 in the same year.

- 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 IFRS17 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, IFRS17, EV remains an important metric to showcase insurers' financial performances and their business strategies to investors, analysts and customers.

An improvement in overall embedded value results over 2019, 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 IFRS17 of 1 January 2023, 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 embedded value will continue evolving in order 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[96] [97])

TYPE	COMPANY	EV PRINCIPLE	CHINA	HONG KONG	INDIA	JAPAN	KOREA	MALAYSIA	SINGAPORE	TAIWAN	THAILAND	INDONESIA	PHILIPPINES	VIETNAM	UNALLOCATED	TOTAL
MNC	AIA	TEV	10,042	21,897	-	-	-	2,942	6,334	-	9,034	-	-	-	11,736	61,985
	Allianz	MCEV / SII	-	-	-	-	-	-	-	-	-	-	-	-	3,623	3,623
	Aviva	SII	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	AXA	EEV	-	-	-	-	-	-	-	-	-	-	-	-	16,841	16,841
	Great Eastern	TEV	-	-	-	-	-	2,978	8,546	-	-	-	-	-	-	11,524
	Manulife	TEV	-	-	-	-	-	-	-	-	-	-	-	-	18,385	18,385
	Prudential plc	EEV	-	-	-	-	-	-	-	-	-	-	-	-	37,843	37,843
	Zurich	MCEV	-	-	-	-	-	-	-	-	-	-	-	-	3,669	3,669
CHINA	China Life	TEV	135,298	-	-	-	-	-	-	-	-	-	-	-	-	135,298
	China Pacific	TEV	43,878	-	-	-	-	-	-	-	-	-	-	-	-	43,878
	China Taiping	TEV	21,242	-	-	-	-	-	-	-	-	-	-	-	-	21,242
	New China Life	TEV	29,447	-	-	-	-	-	-	-	-	-	-	-	-	29,447
	PICC Life	TEV	12,794	-	-	-	-	-	-	-	-	-	-	-	-	12,794
	Ping An	TEV	108,787	-	-	-	-	-	-	-	-	-	-	-	-	108,787
INDIA	Bajaj Allianz Life	MCEV	-	-	1,783	-	-	-	-	-	-	-	-	-	-	1,783
	Aditya Birla Sun Life	MCEV	-	-	688	-	-	-	-	-	-	-	-	-	-	688
	Exide Life	MCEV	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	HDFC Life	IEV	-	-	2,740	-	-	-	-	-	-	-	-	-	-	2,740
	ICICI Prudential Life	IEV	-	-	3,056	-	-	-	-	-	-	-	-	-	-	3,056
	Kotak Life	IEV	-	-	1,113	-	-	-	-	-	-	-	-	-	-	1,113
	Max Life	MCEV	-	-	1,324	-	-	-	-	-	-	-	-	-	-	1,324
	PNB MetLife	IEV	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Reliance Nippon Life	TEV	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SBI Life	IEV	-	-	3,667	-	-	-	-	-	-	-	-	-	-	3,667
JAPAN	Daido Life	MCEV	-	-	-	15,126	-	-	-	-	-	-	-	-	-	15,126
	Dai-ichi Life	MC-EEV	-	-	-	39,968	-	-	-	-	-	-	-	-	-	39,968
	Dai-ichi Frontier Life	MC-EEV	-	-	-	1,779	-	-	-	-	-	-	-	-	-	1,779
	Japan Post Insurance Co Ltd	MC-EEV	-	-	-	30,924	-	-	-	-	-	-	-	-	-	30,924
	LifeNet Insurance	MC-EEV	-	-	-	683	-	-	-	-	-	-	-	-	-	683
	Medicare Life	MC-EEV	-	-	-	1,364	-	-	-	-	-	-	-	-	-	1,364
	Meiji Yasuda Life	MC-EEV	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	MS&AD Aioi Life	MC-EEV	-	-	-	8,281	-	-	-	-	-	-	-	-	-	8,281
	MS&AD Primary Life	MC-EEV	-	-	-	3,241	-	-	-	-	-	-	-	-	-	3,241
	Neo First Life	MC-EEV	-	-	-	1,067	-	-	-	-	-	-	-	-	-	1,067
	Sompo Life	MCEV	-	-	-	7,532	-	-	-	-	-	-	-	-	-	7,532

[96] EV results have been converted at the prevailing USD exchange rate as at the reporting date.

[97] Blue-shaded entries indicate that the 2019 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
	Sony Life	MCEV	-	-	-	15,940	-	-	-	-	-	-	-	-	-	15,940
	Sumitomo Life	MC-EEV	-	-	-	34,814	-	-	-	-	-	-	-	-	-	34,814
	T&D Financial Life	MCEV	-	-	-	619	-	-	-	-	-	-	-	-	-	619
	Taiyo Life	MCEV	-	-	-	8,333	-	-	-	-	-	-	-	-	-	8,333
	Tokio Marine & Nichido Life	MCEV	-	-	-	9,214	-	-	-	-	-	-	-	-	-	9,214
KOREA	DB Insurance	TEV	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Hanwha Life	TEV	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Orange Life	Not disclosed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Samsung Life	TEV	-	-	-	-	31,602	-	-	-	-	-	-	-	-	31,602
	Samsung Fire & Marine	TEV	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MALAYSIA	Hong Leong Assurance	Not disclosed	-	-	-	-	-	598	-	-	-	-	-	-	-	598
TAIWAN	Cathay Life	TEV	-	-	-	-	-	-	-	31,225	-	-	-	-	-	31,225
	China Life TW	TEV	-	-	-	-	-	-	-	10,313	-	-	-	-	-	10,313
	Fubon	TEV	-	-	-	-	-	-	-	20,211	-	-	-	-	-	20,211
	Mercuries Life	TEV	-	-	-	-	-	-	-	4,101	-	-	-	-	-	4,101
	Shin Kong	TEV	-	-	-	-	-	-	-	9,775	-	-	-	-	-	9,775
	Taiwan Life	TEV	-	-	-	-	-	-	-	6,973	-	-	-	-	-	6,973
THAILAND	Bangkok Life	TEV	-	-	-	-	-	-	-	-	2,382	-	-	-	-	2,382
VIETNAM	Dai-ichi Life Vietnam	TEV	-	-	-	-	-	-	-	-	-	-	-	869	-	869

Appendix B: Exchange rates

FIGURE 112: EXCHANGE RATES USED IN THE REPORT

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

CURRENCY	3/31/2020	12/31/2019	3/31/2019	12/31/2018	3/31/2018	12/31/2017	3/31/2017
CAD	0.7083	0.7715	0.7495	0.7329	0.7754	0.7953	0.7507
CHF	1.0391	1.0333	1.0049	1.0169	1.0485	1.0259	1.0000
CNY	0.1412	0.1436	0.1490	0.1454	0.1594	0.1537	0.1452
EUR	1.1024	1.1227	1.1221	1.1455	1.2325	1.1999	1.0698
GBP	1.2455	1.3268	1.3043	1.2760	1.4011	1.3503	1.2534
HKD	0.1290	0.1284	0.1274	0.1277	0.1274	0.1280	0.1287
INR	0.0133	0.0140	0.0144	0.0144	0.0154	0.0157	0.0154
IDR	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
JPY	0.0093	0.0092	0.0090	0.0091	0.0094	0.0089	0.0090
KRW	0.0008	0.0009	0.0009	0.0009	0.0009	0.0009	0.0009
MYR	0.2318	0.2445	0.2449	0.2419	0.2588	0.2471	0.2259
SGD	0.7034	0.7437	0.7320	0.7340	0.7627	0.7478	0.7159
THB	0.0306	0.0336	0.0315	0.0309	0.0320	0.0306	0.0291
TWD	0.0331	0.0334	0.0324	0.0327	0.0344	0.0337	0.0329
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 2020 is 0.0000431282.

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

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