

MILLIMAN REPORT

2021 embedded value results: Asia

Largely positive results as lockdowns ease and interest rates rise

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Opening remarks

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

As most Asian countries transitioned from stringent COVID-19 related restrictions to 'living with the virus' type strategies during 2021, economic activity started to pick up, leading to positive growth in many markets. EV results increased in most markets, but overall growth typically lagged behind 2020. This was mainly due to lower EV growth in China and Japan driven by a resurgence of COVID-19 in China and higher interest rates in Japan. With restrictions easing across most of Asia, higher sales volumes increased value of new business (VNB) results for most insurers outside of China and Taiwan.

Globally, bond yields increased over 2021, as the global economy was released from the effects of widespread COVID-19 related lockdowns. The rising yield curve situation has led many Asian insurers to increase their interest rate and discount rate assumptions for 2021, with the major exception of China where bond yields have fallen. In the second quarter of 2022, sharply higher inflation led to tighter monetary policy and significant increases in interest rates, largely due to supply chain issues, which were exacerbated by the Russian-Ukraine crisis. The impact of the recent increases in interest rates is visible in the results for India and Japan, which have a financial year-end and EV valuation date of 31 March 2022. For other markets, the impact will be seen in the mid-year 2022 results.

Our report compares and contrasts the various approaches taken to EV reporting across Asian markets and insurers. A subsequent report containing commentary on the reported mid-year 2022 EV results, as well as any 2021 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 Autumn 2022.

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

Best regards,

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Executive summary

BACKGROUND

Economic activity in Asia increased during 2021, with regional gross domestic product (GDP)¹ rising by 6.5%, which was higher than the global GDP increase of 6.0%. China, India, and Singapore posted the highest 2021 real GDP growth rates of 8.8%, 8.5%, and 7.9%, respectively.

Total life insurance gross written premium (GWP)² for the markets covered in our report decreased by 2.3% in 2021. Philippines reported the largest percentage increase in GWP (an increase of USD 1.3 billion in absolute terms), while Taiwan recorded the largest percentage fall in GWP.

VNB results for most of Asian life insurers increased in 2021 due to the reduction in government-imposed restrictions across the region which aided the sales activity across the region. However, in China, continued restrictions contributed to a significant fall in new business.

EV increased for all markets except Indonesia and Japan in 2021, however, growth was lower than 2020. China and Japan saw weaker growth in EV, driven by a resurgence of COVID-19 in China and higher interest rates in Japan.

On a comparable basis,³ the overall new business annual premium equivalent (APE) increased in the region by 1.7% in 2021. Malaysia, Singapore, and India reported the highest growth in new business APE, growing 24.8%, 23.1%, and 21.8% respectively. The growth in new business APE for Malaysia and Singapore is attributed to improved access to customers via enhancements in digital tools and platforms which allowed agents to better serve customers, and to their earlier emergence from the COVID-19 pandemic.

Japan and South Korea recorded significant growth in value of in-force (VIF) results during 2021. Increases in the Japanese Yen (JPY) and United States Dollar (USD) yield curves were the main causes of the rise in VIF in Japan, while insurers in South Korea attributed the growth in VIF to increases in investment return assumptions and contributions from higher margin new business sales.

The EV methodologies used in the region remain varied, including Traditional Embedded Value (TEV), European Embedded Value (EEV), Market-Consistent Embedded Value (MCEV)⁴, and Indian Embedded Value (IEV). As mentioned in last year's report, the number of European multinational corporations (MNCs) reporting EV has reduced since 2016, as their parent companies have switched to using Solvency II (SII) as their primary shareholder value reporting metric. Insurers in China, South Korea, and Taiwan continue to report on a TEV basis, although South Korean insurers use stochastic methods to determine the time value cost of options and guarantees, for certain lines of variable business. In contrast, all insurers in Japan adopt MCEV or a Market-Consistent EEV (MC-EEV) approach. In India, almost all companies⁵ 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 2021, is the only company in India 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 2021 total GWPs as at the date of publication of this report. A more precise update will be presented in our report '2022 Mid-Year Embedded Value Results – Asia.' The GWP figures are estimated in USD terms.

³ 'Comparable basis' refers to comparing the results only for those companies that have reported 2019, 2020, and 2021 EV results for Asia.

⁴ The MCEV principles are a copyright of the Stichting CFO Forum Foundation 2008.

⁵ Companies covered under this report only.

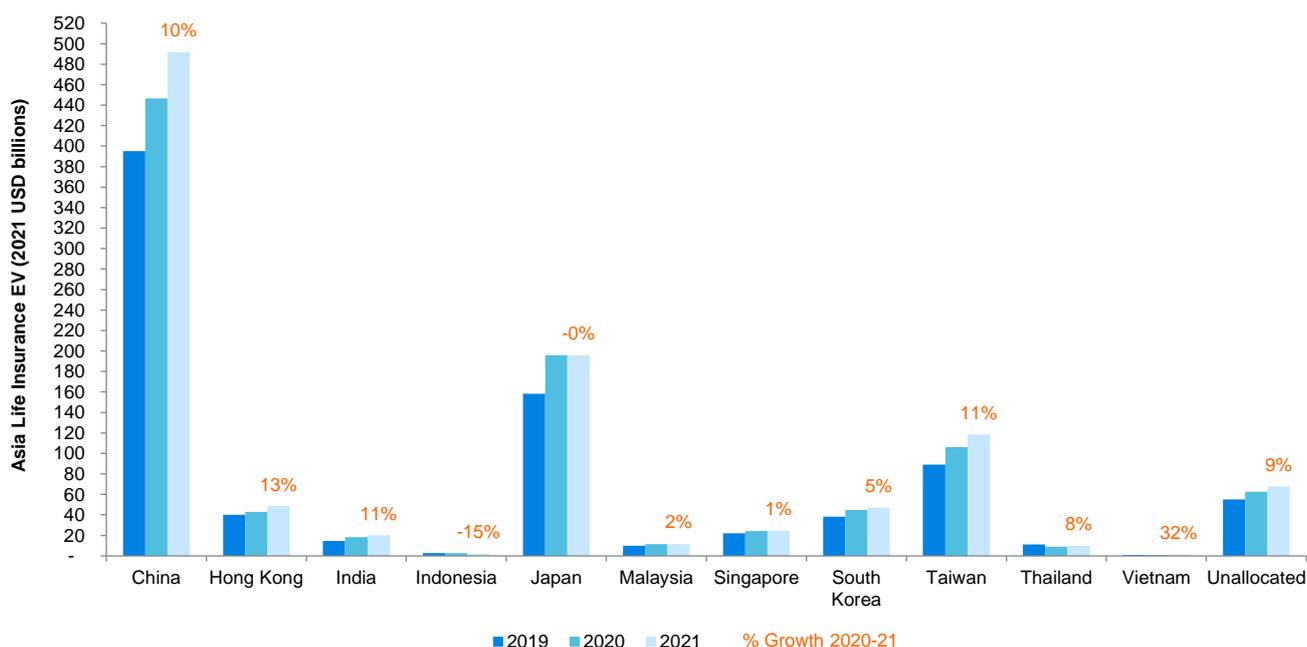
EV RESULTS

This report examines the EV results published by MNCs and domestic life insurers operating in Asia.⁶

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 the results only for those companies that have reported 2019, 2020, and 2021 EV results for Asia.

In 2021, total reported Asian EV grew by 7.6% on a comparable basis⁷ to USD 1,039 billion, up from USD 965 billion in 2020. The companies reporting the largest Asian EV at the 2021 year-end continue to be China Life, Ping An Life, and AIA, at USD 189 billion, USD 138 billion, and USD 73 billion, respectively.

FIGURE 1: COMPARABLE ASIAN LIFE INSURANCE COVERED EV BY MARKET,^{8,9} 2019 TO 2021



All markets, except Indonesia and Japan, posted positive EV growth in 2021. Many markets achieved double-digit EV growth in 2021, although overall EV growth was lower than 2020, primarily driven by lower growth in China and Japan. Vietnam reported the highest comparable EV growth in 2021 of 31.8%, followed by Hong Kong with a growth of 12.7%, and Taiwan and India, which grew at 11.5% and 11.2%, respectively. Vietnam's substantial growth in EV results in 2021 was driven by positive economic variances resulting from an increase in equity markets and lower interest rates. As Indonesia emerged from a major wave of COVID-19 infections towards the end of 2021, EV declined, primarily due to adverse COVID-19 impacts such as worsening of persistency experience, lower new business sales, and higher-than-expected claims experience. Japan reported almost no change in total comparable EV in 2021, with some firms reporting increases in EV and others reporting decreases in EV. Interest rates rose in Japan in 2021, leading to a decrease in unrealised gains on bonds and hence a reduction in adjusted net worth (ANW), which was offset by an increase in the VIF that was driven by increases in both the JPY and USD market yield curves.

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

⁷ 'Comparable basis' refers to comparing the results only for those companies that have reported 2019, 2020, and 2021 EV results for Asia.

⁸ Results for all years have been converted to USD using the prevailing foreign exchange (FX) rate as at the 2021 reporting date to provide comparability and eliminate FX effects.

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

FIGURE 2: COMPARABLE¹⁰ ASIAN LIFE INSURANCE COVERED ADJUSTED NET WORTH (ANW), 2019 TO 2021

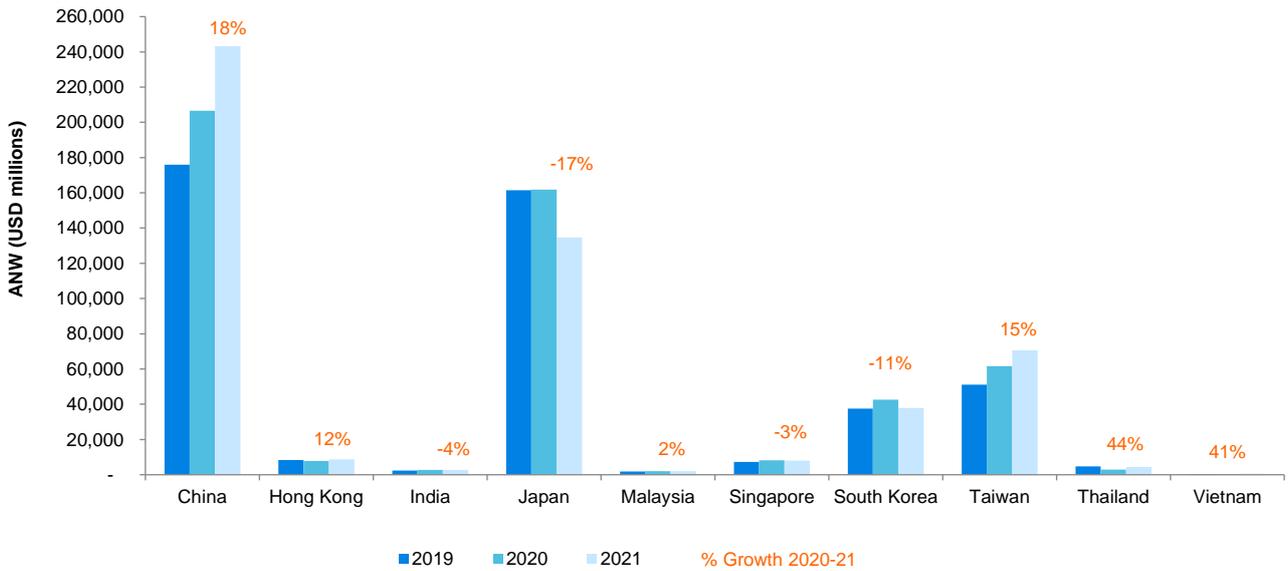
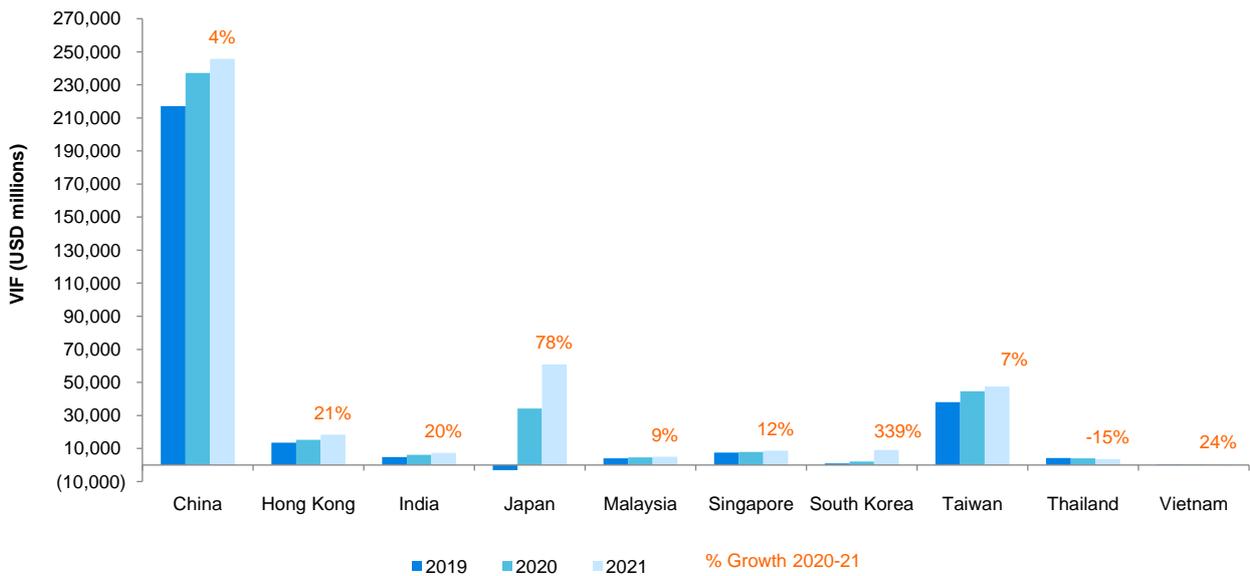


FIGURE 3: COMPARABLE¹¹ ASIAN LIFE INSURANCE COVERED VALUE OF IN-FORCE (VIF), 2019 TO 2021



Growth in ANW in 2021 was positive for all markets except India, Japan, Singapore, and South Korea. Thailand posted the largest percentage growth in ANW of 44.4% in 2021, primarily due to higher equity returns and gross premium valuation (GPV) reserve movements. Thailand was followed by Vietnam, where ANW grew by 40.7%, which can be attributed to significant gains in equities and bond prices. It is also important to note that the ANW for Vietnam is only based on one data point, namely, Dai-ichi Life Vietnam. Japan reported the highest fall of 16.8% in ANW in 2021, due to higher interest rates leading to a decrease in unrealised gains on bonds. South Korea also recorded a double-digit fall of 11.3% in ANW, again due to an increase in bond yields.

¹⁰ 'Comparable basis' refers to comparing the results only those for companies that have reported 2019, 2020, and 2021 EV results for Asia. Insurers that have not yet published their 2021 results as at the data cutoff date include PNB MetLife, Reliance Nippon Life, and LIC.

¹¹ Ibid.

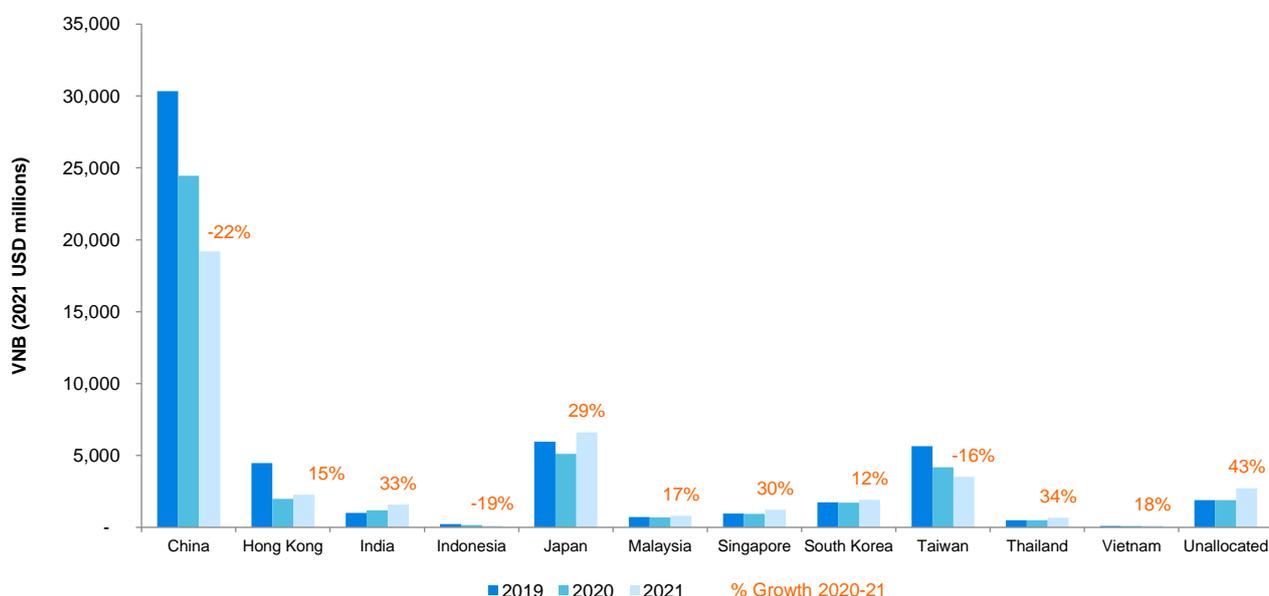
VIF growth was positive for all markets except Thailand. South Korea posted the highest comparable growth of 339.3%, followed by Japan at 78.3%, in 2021. In South Korea, companies attributed the growth in VIF to increases in investment return assumptions and contributions from higher margin new business sales. The growth in VIF for Japan was driven by increases in both the JPY and USD market yield curves. In Thailand, GPV reserve falls contributed to a reduction in VIF.

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

NEW BUSINESS RESULTS

Total reported VNB for Asia stood at USD 40.7 billion in 2021, compared to USD 42.9 billion in 2020, representing a fall of 5.1%.¹²

FIGURE 4: COMPARABLE ASIAN LIFE INSURANCE COVERED VNB BY MARKET, 2019 TO 2021



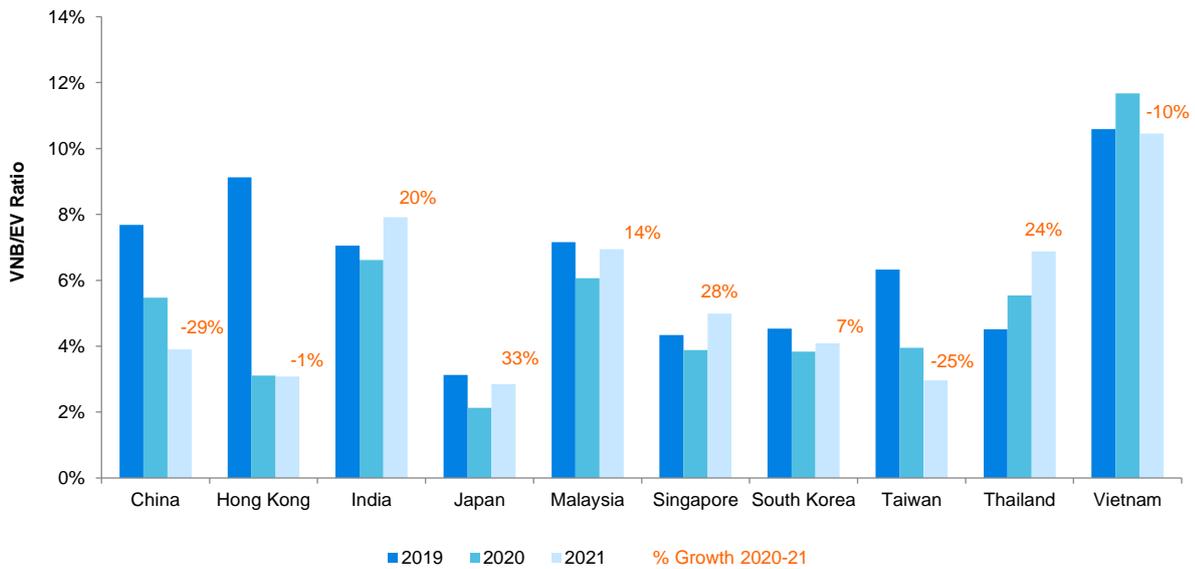
Most of the insurers in Asia disclosing VNB results reported increases in 2021, reflecting the increase in sales from the reduction in government imposed COVID-19-related restrictions across the region

China reported the highest fall in VNB of 21.5%, followed by Indonesia, for which VNB dropped by 19.4%. Both markets reported reductions in VNB margins and APE. In Indonesia, Prudential plc was the only insurer to disclose VNB results in 2021. Both countries cited resurgence of the COVID-19 pandemic and continued restrictions as drivers of the fall in VNB. Thailand, India, and Singapore recorded positive growth in VNB in 2021 of 34.4%, 33.1%, and 30.0%, respectively. Insurers in Singapore attributed the growth in VNB primarily to a favourable shift in product mix, successful new product launches, and growth in their agency and bancassurance channels. In India, continued focus on a balanced, profitable product mix helped drive VNB growth for many insurers.

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

¹² On a comparable basis.

FIGURE 5: VNB/EV RATIO,¹³ 2019 TO 2021

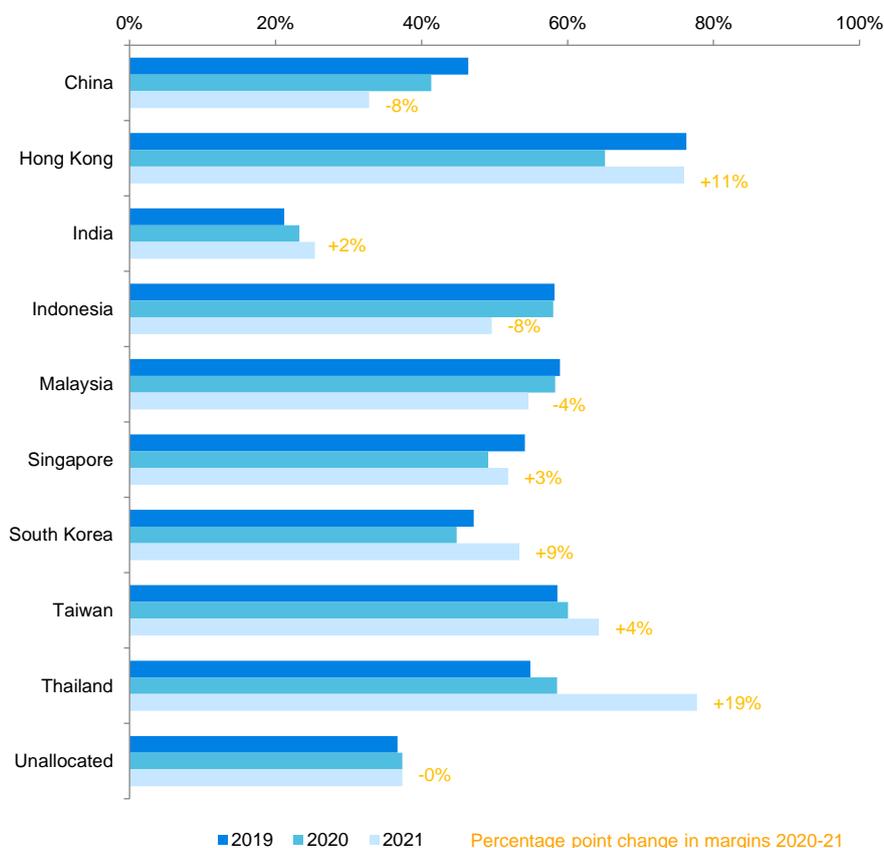


Except for China, Hong Kong, Taiwan, and Vietnam, all markets saw an increase in the VNB/EV ratio in 2021. China witnessed the highest decline in VNB/EV ratio in 2021, primarily as a result of continued severe lockdown restrictions caused by the government’s ‘COVID zero’ strategy. Japan and Singapore recorded the highest growth in VNB/EV ratio, primarily due to higher VNB growth in 2021.

¹³ 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^{14 15} BY MARKET, 2019 TO 2021



The chart in Figure 6 compares the total disclosed new business margins for each market. The reliability of this analysis is inherently linked to the number of disclosures available. All markets, except China, Indonesia, and Malaysia, recorded increases in new business margins in 2021. Insurers in China primarily attributed the fall in new business margins to shift in business mix amidst the challenging market environment. Thailand posted the highest increase of 19.2 percentage points, primarily attributed to changes in product and business mix. Hong Kong posted an increase of 10.8 percentage points in new business margins, which was attributed to higher interest rates.

¹⁴ This chart has been developed by taking the sum of all disclosed VNB in each market, divided by the corresponding 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 plc); India (Aditya Birla Sun Life, ICICI Prudential Life, HDFC Life, Bajaj Allianz Life, Kotak Life, Max Life, and SBI Life); South Korea (Hanwha Life and Samsung Life); Malaysia (AIA, Great Eastern, Prudential plc, and Hong Leong Assurance); Singapore (AIA, Great Eastern, and Prudential plc); Taiwan (Cathay Life, China Life TW, Mercuries Life, Shin Kong Life, Taiwan Life, and Fubon Life); Thailand (AIA and Bangkok Life); Indonesia (Prudential plc).

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

EV METHODOLOGY HOT TOPICS

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

FIGURE 7: SUMMARY OF EV METHODOLOGY HOT TOPICS

HOT TOPIC	COMMENT
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. Most companies operating within markets typically have a tight range of assumed risk margins, but exceptions do exist.
Investment return assumptions	<p>Future investment return is a key assumption for calculating VIF and VNB for TEV and EEV reporting companies. Where insurers disclose investment return assumptions by asset classes, the range of assumptions is generally quite narrow. Where portfolio-level assumptions are disclosed, a wide range can be seen in some markets. Insurers reporting on a Solvency II basis disclose information on matching adjustments and illiquidity premiums.</p> <p>There is also some divergence among insurers on the implied link between current market yields and future investment return assumptions. Some insurers derive future investment return assumptions from spot bond yields (with risk margins for other asset categories), while others position their investment returns as long-term return assumptions, with increasing divergence from spot bond yields as interest rates have fallen in recent years. The latter approach can potentially introduce some disparity in EV calculations, as insurers take credit in their ANW results for market value uplifts from falling interest rates, but only partially reduce their VIF results as investment return assumptions are not reduced to the same extent as spot yields (or not reduced at all).</p>
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	<p>Insurers need to make assumptions on the future level of required solvency margin (SM) when projecting distributable earnings. This is typically based on what insurers perceive to be the minimum level that will prompt regulatory intervention. For most markets, there is broad agreement on this level as a result of clear communication from the regulator or industry precedent. Notable exceptions include Singapore and Malaysia, where different companies will have agreed with the regulator different minimum levels of regulatory capital. For example, in Singapore, Manulife assumes a minimum level of 120% of risk-based capital (RBC), whereas AIA Singapore uses 135%.</p> <p>In most markets, the SM is assumed to be above the minimum regulatory level, but most Chinese companies use 100% of the minimum regulatory level for EV purposes, which is in accordance with the China Association of Actuaries (CAA) EV standard of November 2016.¹⁶</p>

¹⁶ 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

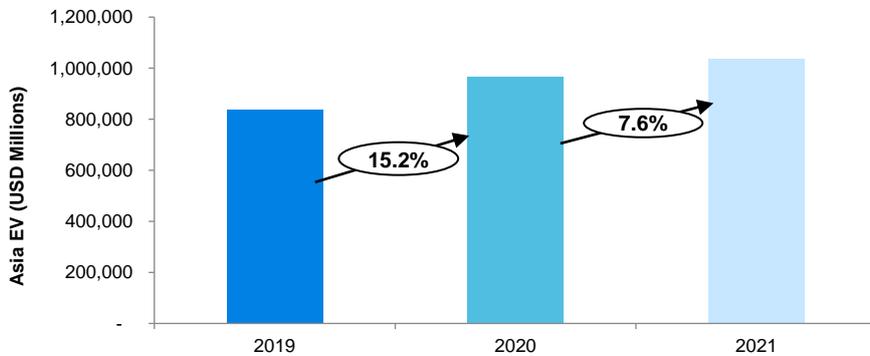
JURISDICTION	REGULATION	DESCRIPTION
China	Investment Scope for Insurers	The CBIRC has issued a revised notice on 'Investment of Insurance Funds in Relevant Financial Products.' This notice has been issued in order to further optimise insurer asset allocations, improve the quality and efficiency of insurance funds, and prevent investment risks.
	C-ROSS	In December 2021, the CBIRC launched Phase II of the China Risk-Oriented Solvency System (C-ROSS). Insurers are required to apply the new rules starting from the 2022 Q1 solvency reports.
	Social Responsibility	The CBIRC has issued green finance guidelines for the banking and insurance sectors. The comprehensive guidelines have been issued with the goal of guiding the banking and insurance industries to develop green finance and actively support economic activities with environmental and social benefits, so as to better assist in pollution prevention and control, and promote carbon peaking and carbon neutrality.
	Consumer Rights Protection	The CBIRC has released draft 'Rules on Protection of Consumer Rights and Interests of Banking and Insurance Institutions.' The draft rules aim to maintain a fair and just financial market environment, protect the legitimate rights and interests of consumers of banking and insurance industries, and promote the high-quality and steady development of the banking and insurance industries. The rules will be revised based on feedback and will then be implemented.
Hong Kong	ILAS Products	The Insurance Authority (IA) issued a note to formalise the 'greenlight process' for assessment of Investment-Linked Assurance Scheme (ILAS) products against the Standards in Guideline on Underwriting Class C Business (GL15). IA has tightened the requirements on ILAS products and has also set out the criteria for the ILAS products to be considered Protection Linked Plans (PLP), i.e., products with higher embedded levels of protection and subject to different requirements for disclosure at the point of sale.
	RBC Framework	The IA issued a set of technical specifications for early adoption of the Risk-Based Capital (RBC) framework. The IA is also engaging the industry to finalise Pillar 3 disclosure requirements. The Hong Kong RBC framework is expected to become effective from 1 January 2024.
India	Investment Ceiling for Insurers	The Insurance Regulatory and Development Authority of India (IRDAI) has raised the maximum exposure limit, for insurance companies, to assets in the banking, financial service, and insurance sectors from 25% to 30%.
	Use and File	In June 2022, IRDAI introduced a new 'Use and File' (U&F) regime for a range of life insurance products, including protection products, investment-linked products, health products, and all riders. To launch a product under the U&F regime, a company has to first establish a Board Approved Product Management & Pricing Policy (BAPMPP) and a Product Management Committee (PMC). A company may file a product with the IRDAI once its PMC approves the product, then launch the product within 15 days of this filing, without waiting for the IRDAI's approval.
Indonesia	Unit-linked Business	On 14 March 2022, the Indonesian Financial Services Authority (OJK) outlined new regulations for unit-linked business in the Indonesian life insurance market. The regulations seek to enhance the level of transparency and policyholder protection.
Malaysia	RBC Framework	In June 2021, Bank Negara Malaysia (BNM) issued a discussion paper on the framework design of the RBC Framework for Insurers and Takaful Operators. The enhancements generally relate to the calibration of capital charges, the comprehensiveness of the risk components considered, and the measurement approach. BNM is also exploring possible enhancements to the Capital Adequacy Ratio (CAR) formula, to improve consistency across the insurance and Takaful industry, as well as to better reflect the relationships between funds, in terms of fungibility of capital.
	Takaful Insurance	To further support the growth in the Takaful sector, BNM issued a discussion paper on the 'Broader Application of Ta'awun (mutual assistance) in Takaful' in March 2022 which explores the utilisation of the surplus generated in a Takaful fund for donation or financial assistance to a third party, who are not existing participants, or for solvency purposes.

JURISDICTION	REGULATION	DESCRIPTION
	Digital Innovation	In addition, to encourage digital innovation in the insurance and Takaful sector, BNM issued a discussion paper in January 2022 outlining the proposed framework for licensing digital insurers and Takaful operators (DITOs).
Singapore	Investment-linked Insurance	The Monetary Authority of Singapore (MAS) issued revised requirements relating to non-mandatory standards for investment-linked policies such as disclosing all upfront charges as a single 'premium charge.' The revisions took effect from 1 July 2021.
	Non-Face-to-Face (NFTF) Measures	In February 2022, the MAS issued a circular on Non-Face-to-Face (NFTF) Customer Due Diligence Measures in view of the increasing use of NFTF measures and technologies. The circular sets out MAS-recommended practices and supervisory guidance on the measures to mitigate risks, including money laundering, terrorism financing, and proliferation financing risks associated with the use of NFTF technologies.
South Korea	Revisions to Claim Handling Process	The Financial Services Commission (FSC) is working on upgrading and simplifying the process used by beneficiaries to identify and claim unclaimed insurance benefits.
	RBC Framework	The capital adequacy regulation, Korean Insurance Capital Standard (K-ICS), is expected to come into effect from January 2023.
Taiwan	Online Sales	Taiwan's insurance regulator, Financial Supervisory Commission (FSC), allowed the establishment of online-only insurance companies in Taiwan.
	Capital Adequacy	Taiwan's insurance regulator requires insurers to maintain a CAR of 200% or more. An amendment was released in 2021, which requires insurers to continue to meet the earlier requirement, along with a new requirement to maintain a net worth ratio of more than 3% in one of the two most recent financial periods. The reason behind the amendment was to improve the risk profiles of life insurance companies, given problems such as liquidity risk caused by some insurers being over-exposed to bond exchange-traded funds.
Thailand	RBC Framework	The OIC is currently conducting a market testing exercise on Thailand's risk-based capital 2 (RBC 2) framework, with the objective of better aligning the current framework with international standards while considering the specifics of the Thai insurance industry environment.

Introduction and background

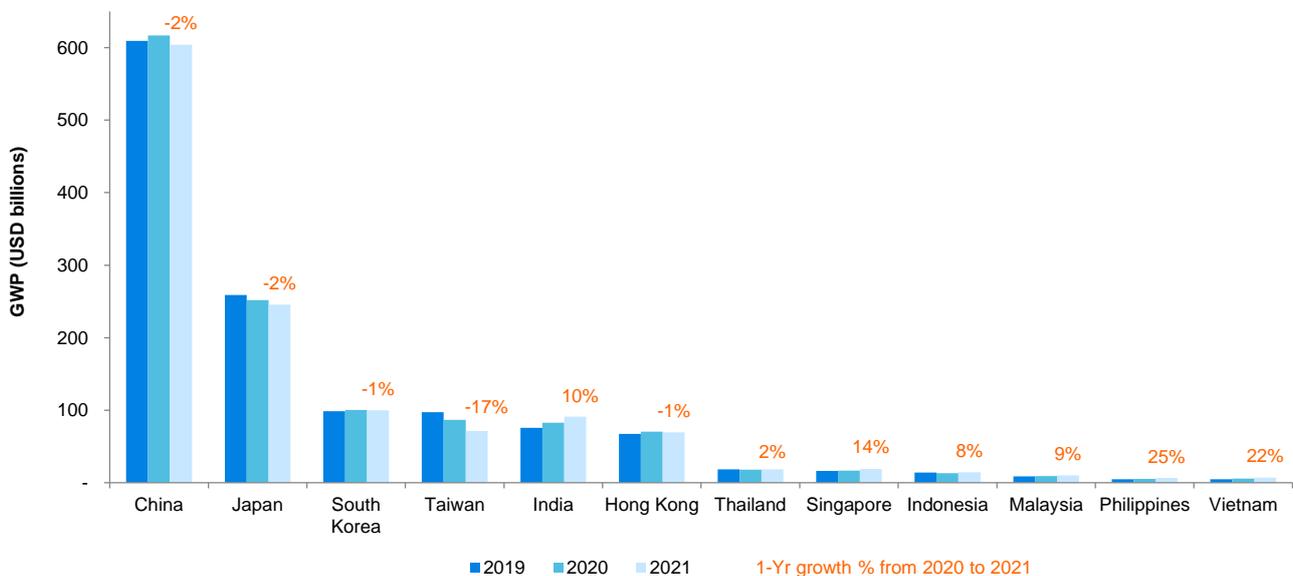
Comparing only insurers that have reported 2019 to 2021 EV figures,¹⁷ Asian life insurance EV¹⁸ grew by 7.6% in 2021; at a lower rate than the 15.2% recorded in 2020.

FIGURE 9: REPORTED COMPARABLE ASIA LIFE INSURANCE COVERED EV, 2019 TO 2021



Overall GWP decreased on a USD basis (see Figure 10), largely due to reductions in GWP in larger markets, whereas smaller markets largely witnessed increases in GWP. There was a decrease in insurance penetration (see Figure 11) of about 42 basis points (bps) in 2021. While insurance penetration decreased for most markets, it increased for Japan and Philippines. Household income, in USD terms, increased throughout the Asian region (see Figure 12).

FIGURE 10: LIFE INSURANCE GROSS WRITTEN PREMIUMS IN ASIA^{19 20}



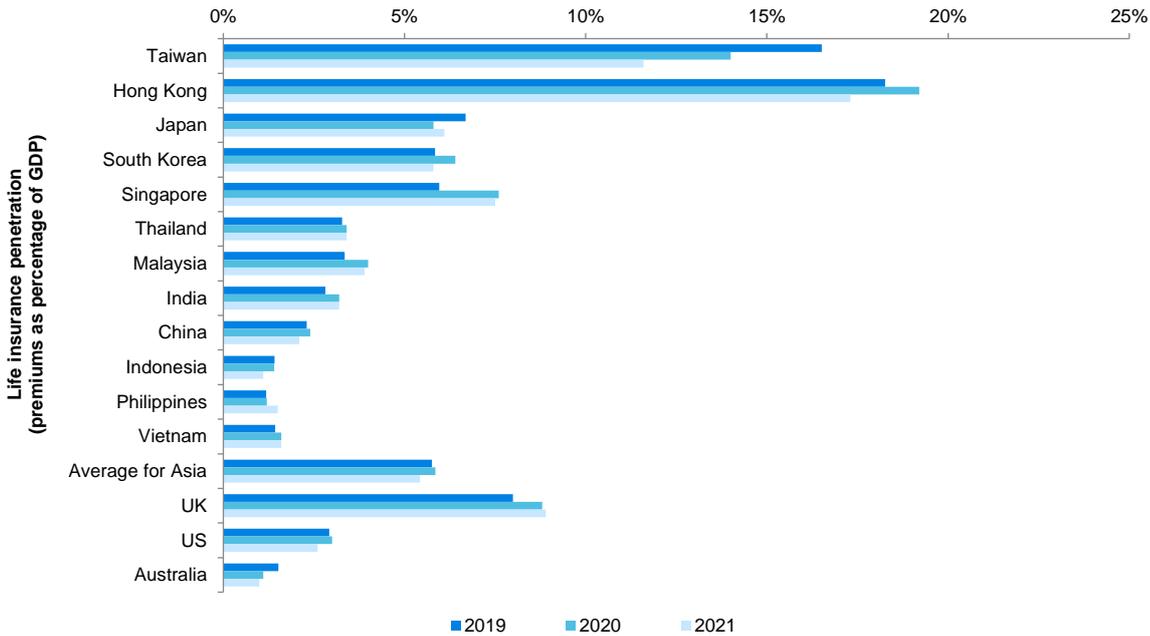
¹⁷ Companies that have not yet disclosed their 2021 EV results have also been excluded from previous years to provide an appropriate year-to-year comparison. To provide comparability, the EV figures for this chart have been calculated on a constant currency basis, using the FX rate as at each company's 2021 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.

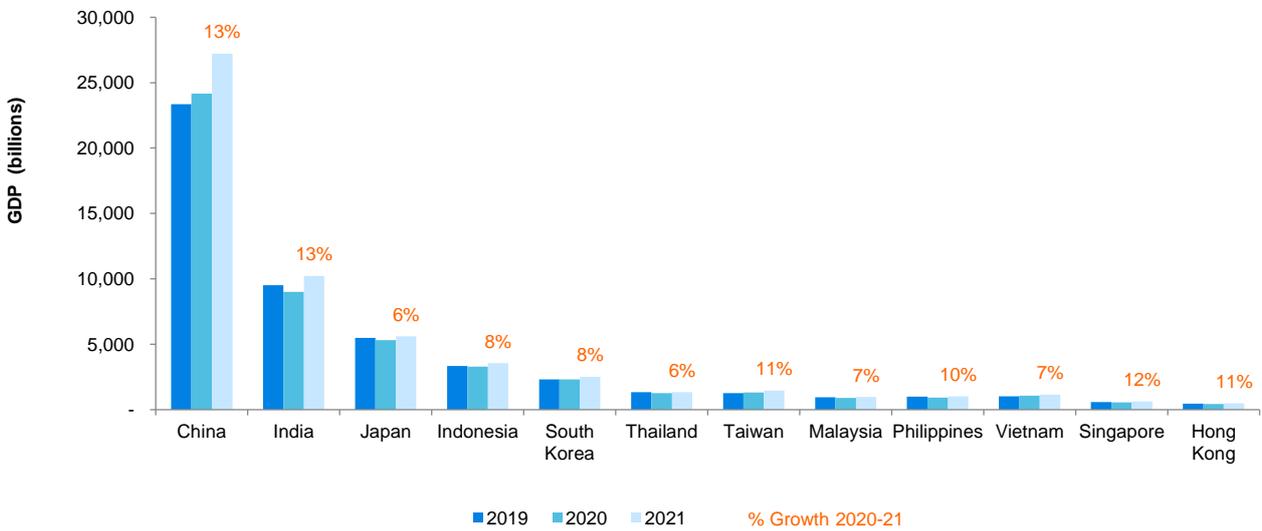
²⁰ 2021 GWP for Philippines is based on unaudited quarterly statistics.

FIGURE 11: ASIAN LIFE INSURANCE PENETRATION^{21 22} 2019 TO 2021, % OF GDP²³



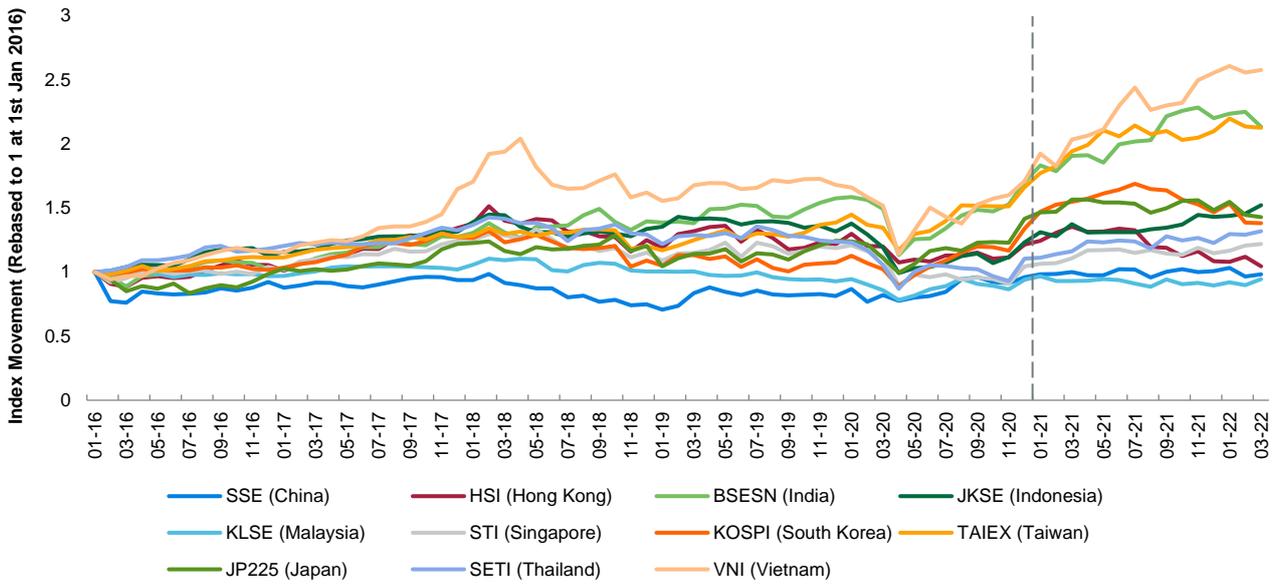
There was a decrease in Asian life insurance penetration of about 42bps over the past year. While insurance penetration decreased marginally in most markets, Taiwan posted the highest decrease of around 2.4%. Some markets, such as Japan and Philippines, posted an increase in insurance penetration in 2021, whereas life insurance penetration has not changed significantly since 2020 for markets, such as India and Vietnam.

FIGURE 12: GDP (PURCHASING POWER PARITY)²⁴ OF IN-SCOPE ASIAN MARKETS, 2019 TO 2021



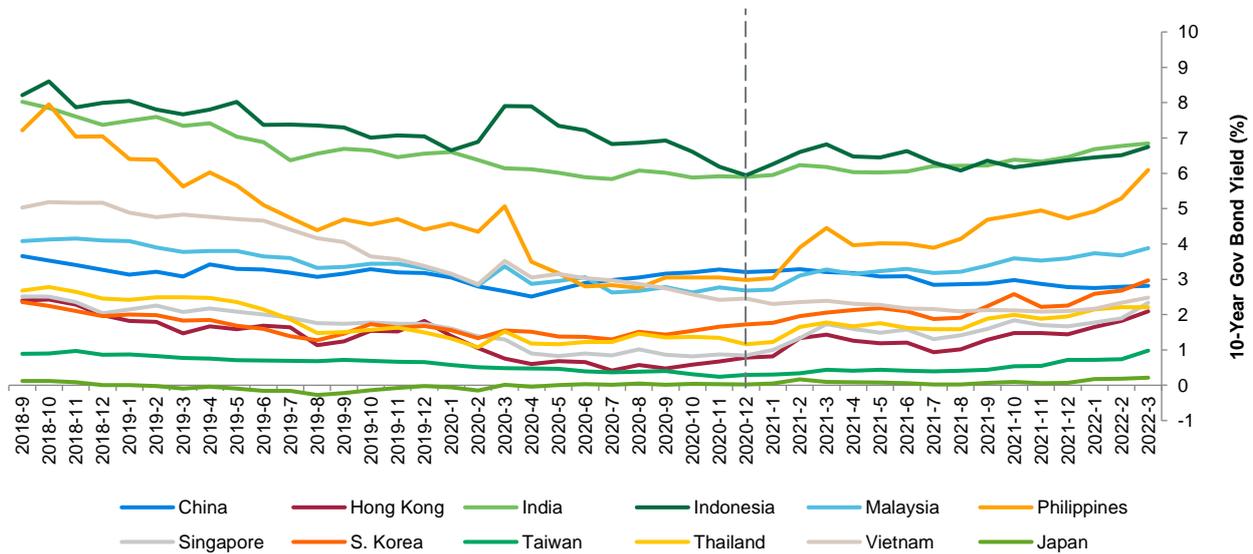
²¹ It should be noted that Hong Kong life insurance penetration figures are likely to be distorted by large volumes of business being sold to Mainland Chinese visitors.
²² Note that we have revised the 'Average for Asia' figures as the 2021 World Insurance Report does not provide a consolidated average 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 World Insurance Report 2021.
²⁴ Source: International Monetary Fund, World Economic Outlook Database, April 2022.

FIGURE 13: RECENT EQUITY MARKET PERFORMANCE: GROWTH OF MAJOR EQUITY INDICES^{25 26} (FROM 1 JANUARY 2016 TO 31 MARCH 2022)



Many Asian equity markets experienced volatility during 2021 (see Figure 13). Overall, in the past six years, the best-performing major equity index in the region has been Vietnam’s Ho Chi Minh Stock Index (VNI). Asian equity markets experienced significant volatility over the past year due to inflationary pressures and concerns about the omicron variant of coronavirus. Taiwan’s Taiwan Stock Exchange Capitalisation Weighted Stock Index (TAIEX) saw the highest year-on-year increase of 43.5%, attributable to the enthusiasm of retail investors and a global recovery in technology stocks.

FIGURE 14: 10-YEAR SOVEREIGN BOND YIELDS,²⁷ 2018 TO FY 2021²⁸



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 Stock Price Index; Thailand: Stock Exchange of Thailand Index; Taiwan: Taiwan Weighted Index; Vietnam: Ho Chi Minh Stock Index.

²⁶ Source: Investing.com.

²⁷ Source: Investing.com.

²⁸ FY 2021 refers to year ending 31 March 2022.

Asian sovereign bond market yields, which closely influence the selection of RDRs, and investment return assumptions adopted by insurers for EV reporting, have risen for most markets during 2021. The 10-year government bond yield appeared to be very volatile for the Philippines, as it rose sharply throughout the year. On the other hand, bond yields for China and Vietnam declined steadily throughout the year.

In 2021, economic activity picked up in most markets as strict COVID-19 lockdowns were lifted, leading to high equity growth rates and a significant increase in demand, followed more recently by higher inflation and interest rates. Other markets which were slower to ease COVID-19 related lockdowns saw more muted equity growth and, in some cases, lower interest rates.

More recently, the Russia-Ukraine crisis has amplified the rise in cost of energy / other raw materials and supply chain problems globally (with lockdowns in China continuing), which has led to higher inflation across Asia and the rest of the world. Due to these high inflationary pressures, most central banks have changed tack, tightening monetary policy by raising interest rates. As this new environment emerged in 2022, after the valuation dates considered in this report, for all markets apart from India and Japan, it did not have much impact on the 2021 EV results for these markets, but is expected to impact mid-year 2022 EV results.

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 most companies adopting the IEV approach in India.

In this publication, we focus on EV results as at financial year-end 2021.²⁹ 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
- Disclosure of expense overruns

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.

²⁹ For India and Japan, the financial year-end 2021 is 31 March 2022.

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. ANW: The shareholders' net assets, including free surpluses and required capital, i.e., the amount returned to shareholders should all assets be sold and liabilities settled immediately.

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

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

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

HISTORY OF EV REPORTING

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

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

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

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

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 (CoC), 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. The key Solvency II based metrics are summarised in the Milliman e-alert, which can be found [here](#).

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,³¹ EEV,³² or MC-EEV. A summary of EV methodologies adopted by life insurers across Asia is shown in Figure 15.

FIGURE 15: EMBEDDED VALUE REPORTING STATISTICS BY DOMICILE OF INSURANCE GROUP

GROUP DOMICILE	TEV	EEV	MCEV/IEV	MC-EEV	TOTAL
Asian MNC	2	-	-	-	2
European MNC	-	2	3	-	5
North American MNC	1	-	-	-	1
China	6	-	-	-	6
Hong Kong	-	-	-	-	-
India	1	-	10	-	11
Japan	-	-	6	10	16
Malaysia	1	-	-	-	1
South Korea	2	-	-	-	2
Taiwan	6	-	-	-	6
Thailand	1	-	-	-	1
Vietnam	1	-	-	-	1
Total	21	2	19	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.

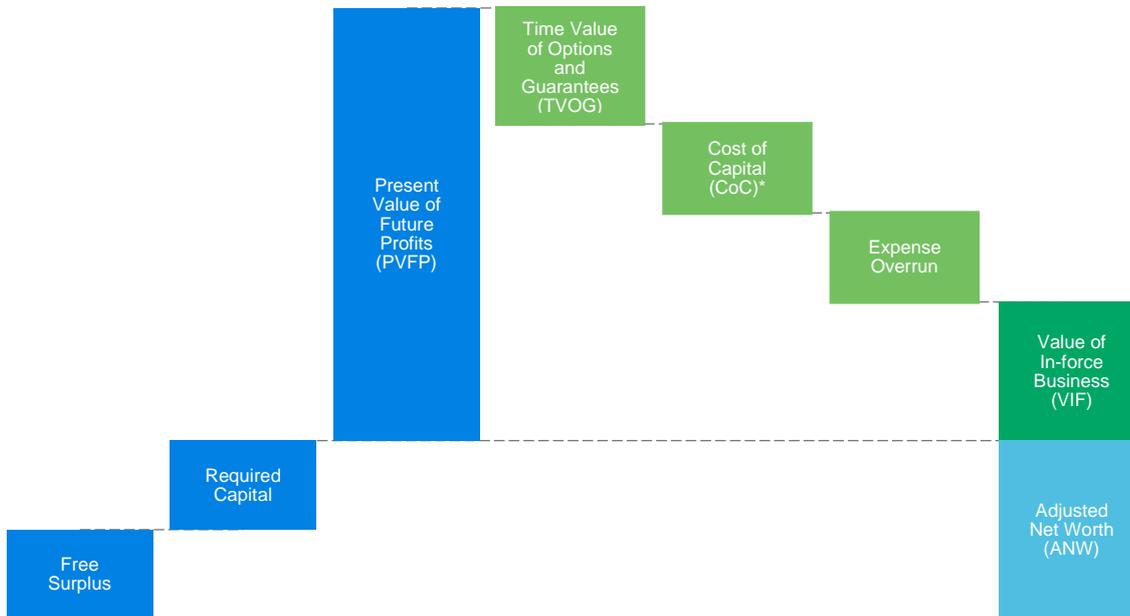
In South Korea, the values of in-force and new business are presented on a TEV basis, including the cost of minimum benefit guarantees on non-hedged block of variable annuity and life business which cover a variety of guaranteed death and living benefits. Guaranteed Minimum Benefit (GMxB) costs on non-hedged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

³¹ Including Allianz, Aviva, and Zurich.

³² Including AXA and Prudential plc.

COMPONENTS OF EV

FIGURE 16: 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.
- **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 CoC related to non-hedgeable risks that can have an asymmetric impact on shareholder value (to the extent that these risks have not already been reflected in the PVFP or TVOG). They can include both financial and non-financial risk, with operational risk being a typical inclusion.

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

ANW is typically calculated as the sum of:

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

Figure 17 summarises the main differences between TEV, EEV, and MCEV for each of the above components.

FIGURE 17: 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.
CoC	There is no standardisation of this, but CoC 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 U.S. 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 that are only recently rising from 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	
Japan	Meiji Yasuda has not disclosed its EV and VNB results this year.
Thailand	Bangkok Life has not disclosed split of ANW/VIF for EV this year.
MNC	Zurich Life has not disclosed EV results this year.

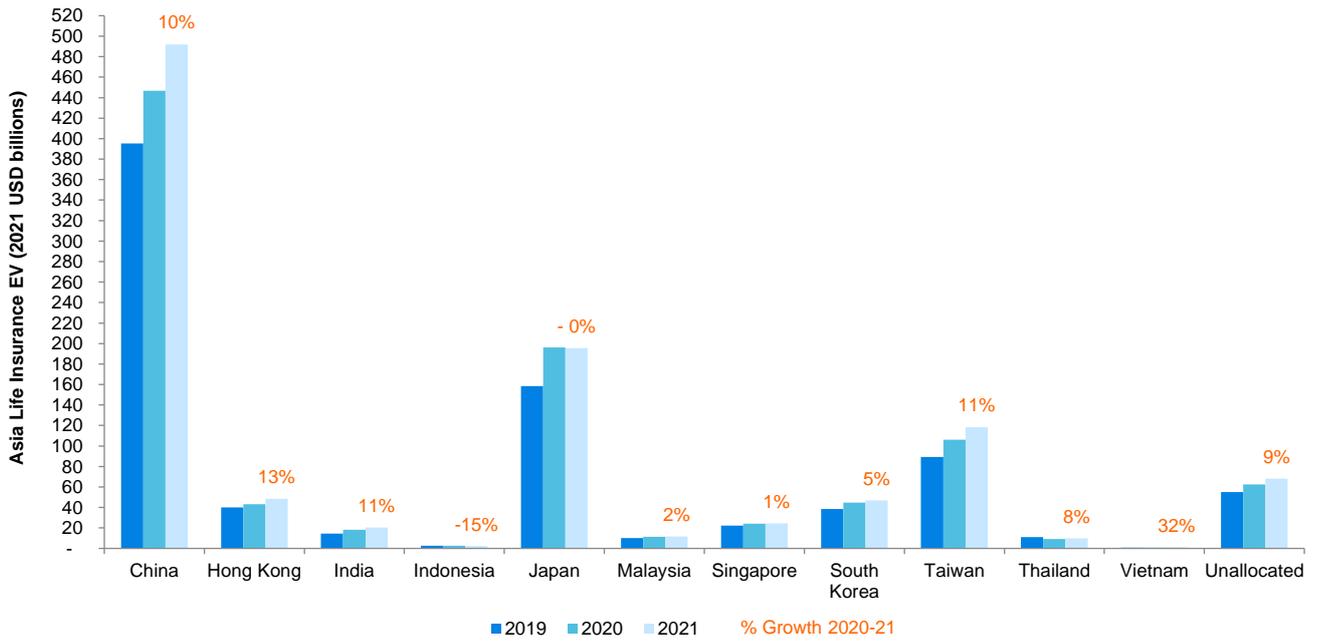
EV IN ASIA

In 2021, reported Asian life insurance EV grew by 7.6% on a comparable basis³³ to USD 1,038 billion, up from USD 965 billion in 2020. The companies reporting the largest Asian EV at the 2021 year-end continue to be China Life, Ping An Life, and AIA, at USD 189 billion, USD 138 billion, and USD 73 billion, respectively. Figure 18 sets out the total EV growth by market (to the extent that such a breakdown has been disclosed by companies).

It should be noted that the results in all the figures under this section are based on converting results in local currency to USD using prevailing exchange rates at the same (financial year-end 2021) 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.

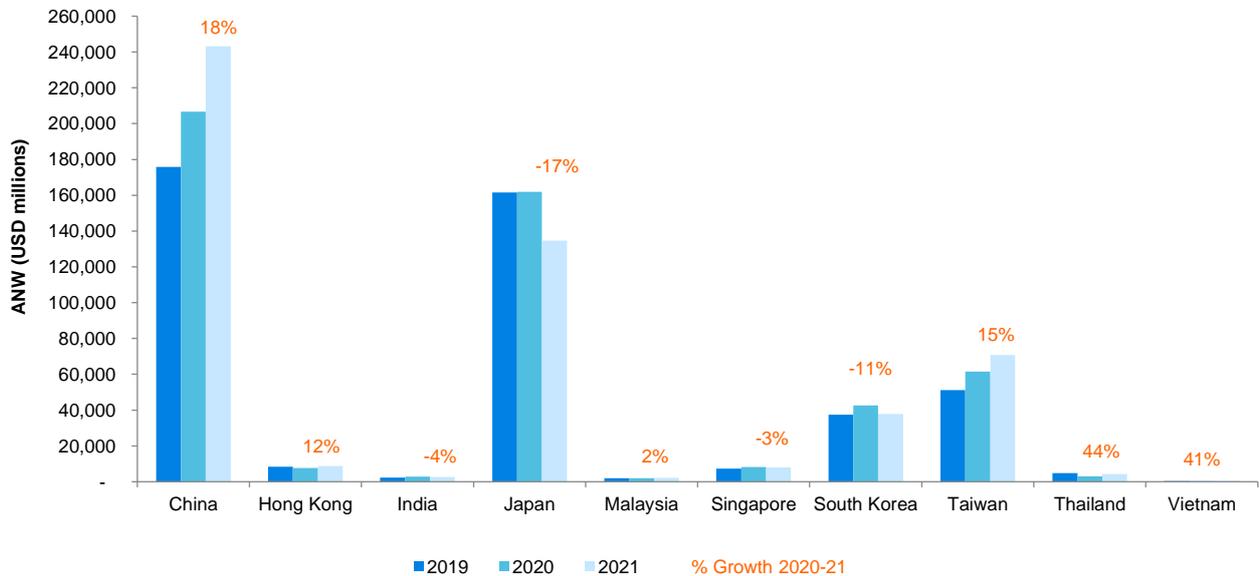
³³ As at the data cutoff date, some insurers have not yet disclosed their 2021 EV figures. Hence, this chart and subsequent commentary only include insurers that have a complete set of 2019, 2020, and 2021 EV figures. The results of the remaining companies will be included in our '2022 Mid-year Embedded Value Results – Asia' report. The missing companies include PNB MetLife, Reliance Nippon Life, and LIC.

FIGURE 18: COMPARABLE ASIAN LIFE INSURANCE COVERED EV,^{34 35} 2019 TO 2021



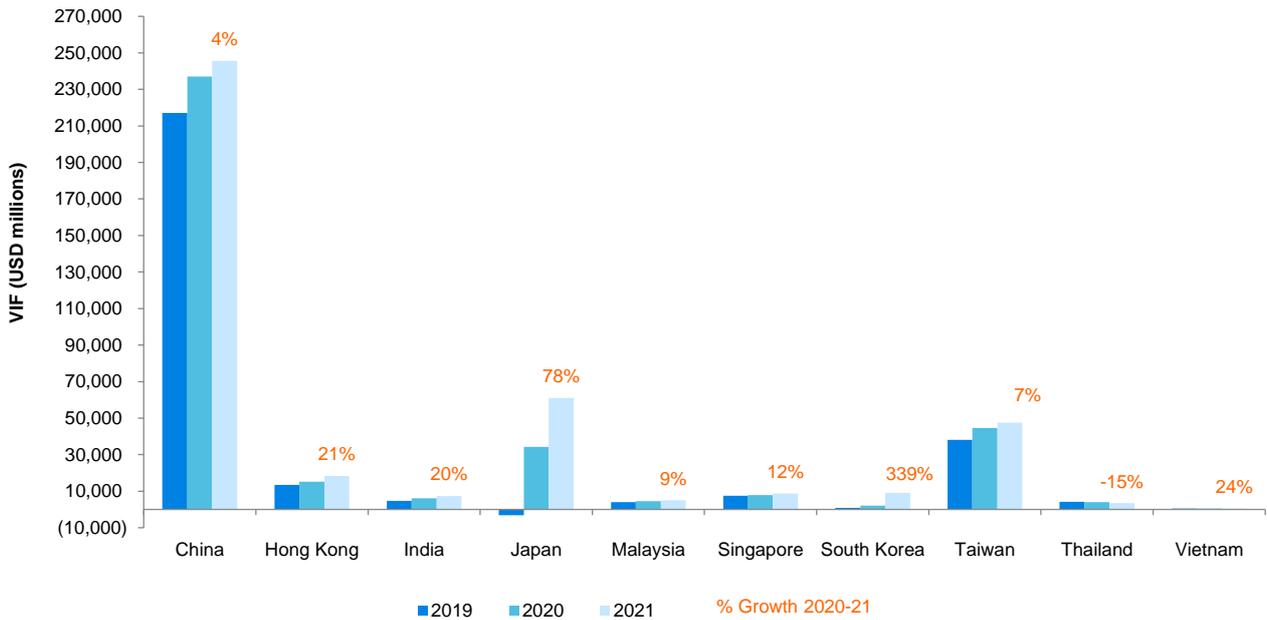
Besides Japan and Indonesia, all other Asian markets posted positive EV growth in USD terms in 2021. Vietnam reported the highest comparable EV growth in 2021 of 31.8%, followed by Hong Kong with a growth of 12.7%, Taiwan and India with a 11.5%, and 11.1% growth, respectively. Vietnam recorded substantial growth in EV results in 2021, driven by positive economic variances resulting from an increase in equity markets and lower interest rates. Japan reported almost no change in total comparable EV in 2021, with some firms reporting increases in EV and others reporting decreases in EV. Interest rates rose in Japan in 2021, leading to a reduction in ANW, which was offset by an increase in the VIF.

FIGURE 19: COMPARABLE ASIAN LIFE INSURANCE COVERED ANW, 2019 TO 2021



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 2021 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 markets.

FIGURE 20: COMPARABLE ASIAN LIFE INSURANCE COVERED VIF, 2019 TO 2021

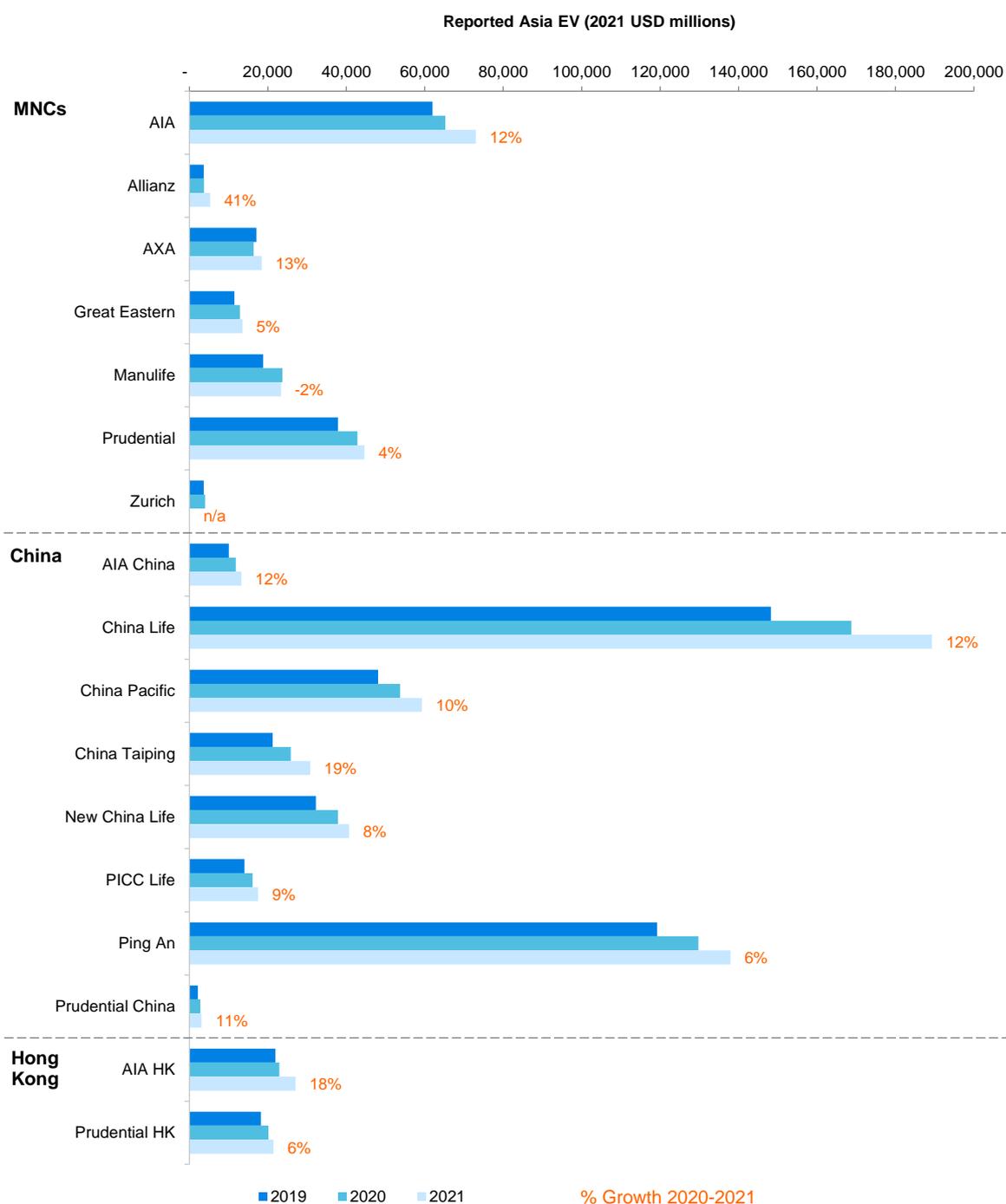


The aggregate ANW for the Asian life insurance sector increased marginally in 2021 by 3.4%, with Japan and South Korea reporting double-digit falls in ANW last year. Thailand reported the highest increase of 44.4% in ANW, due to higher equity returns, followed by Vietnam with a 40.7% growth. The ANW growth for Vietnamese insurers can be attributed to significant gains in equity returns. Japan reported the highest decline in ANW of 16.8% in 2021, which was attributed to higher statutory reserves amid the prolonged low interest rate environment.

Except for Thailand, VIF growth was positive for all markets. South Korea recorded the highest increase of 339.3% (in USD terms) in 2021, followed by Japan with 78.3% growth. The growth in VIF in South Korea has been attributed to contributions from new business and positive returns from existing business. In Japan, the total life insurance sector VIF, on a comparable basis, increased from USD 34,177 million to USD 60,923 million. The growth in Japan’s VIF was driven by rises in JPY and USD yield curves. For more details on these markets, refer to the ‘Detailed Market Analysis’ section below.

EV BY COMPANY

FIGURE 21: ASIAN LIFE INSURANCE COVERED BUSINESS EV BY COMPANY,^{36 37 38} 2019 TO 2021



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 2021 reporting date.

³⁷ Note that some companies have not yet disclosed their 2021 EV results as at the data cutoff date of this report. The 2021 results for these companies have consequently been left blank. The insurers that have not yet published their 2021 results as at the data cutoff date include PNB MetLife, Reliance Nippon Life, and LIC.

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 21: ASIAN LIFE INSURANCE COVERED BUSINESS EV BY COMPANY, 2019 TO 2021 (CONTINUED)

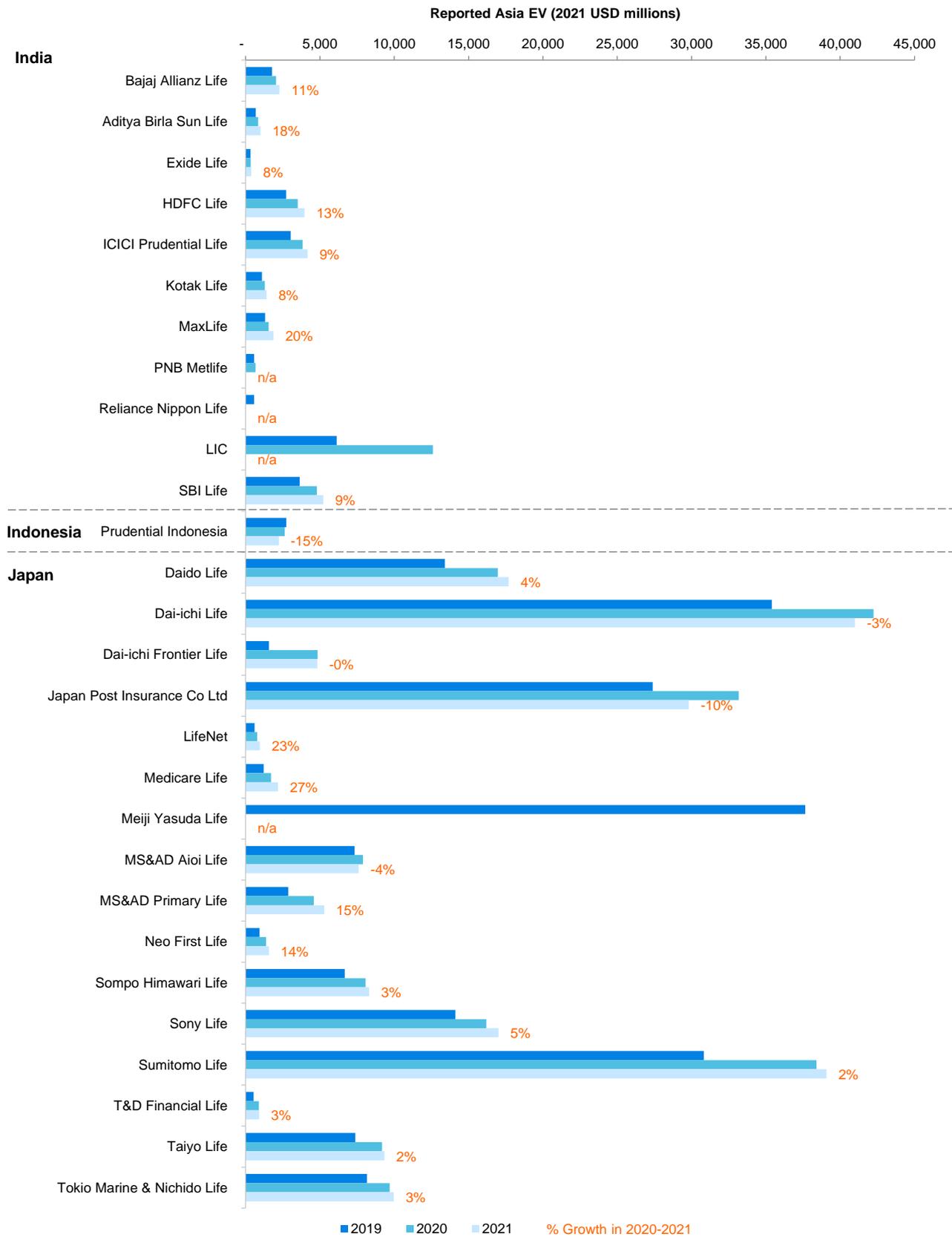


FIGURE 21: ASIAN LIFE INSURANCE COVERED BUSINESS EV BY COMPANY, 2019 TO 2021 (CONTINUED)

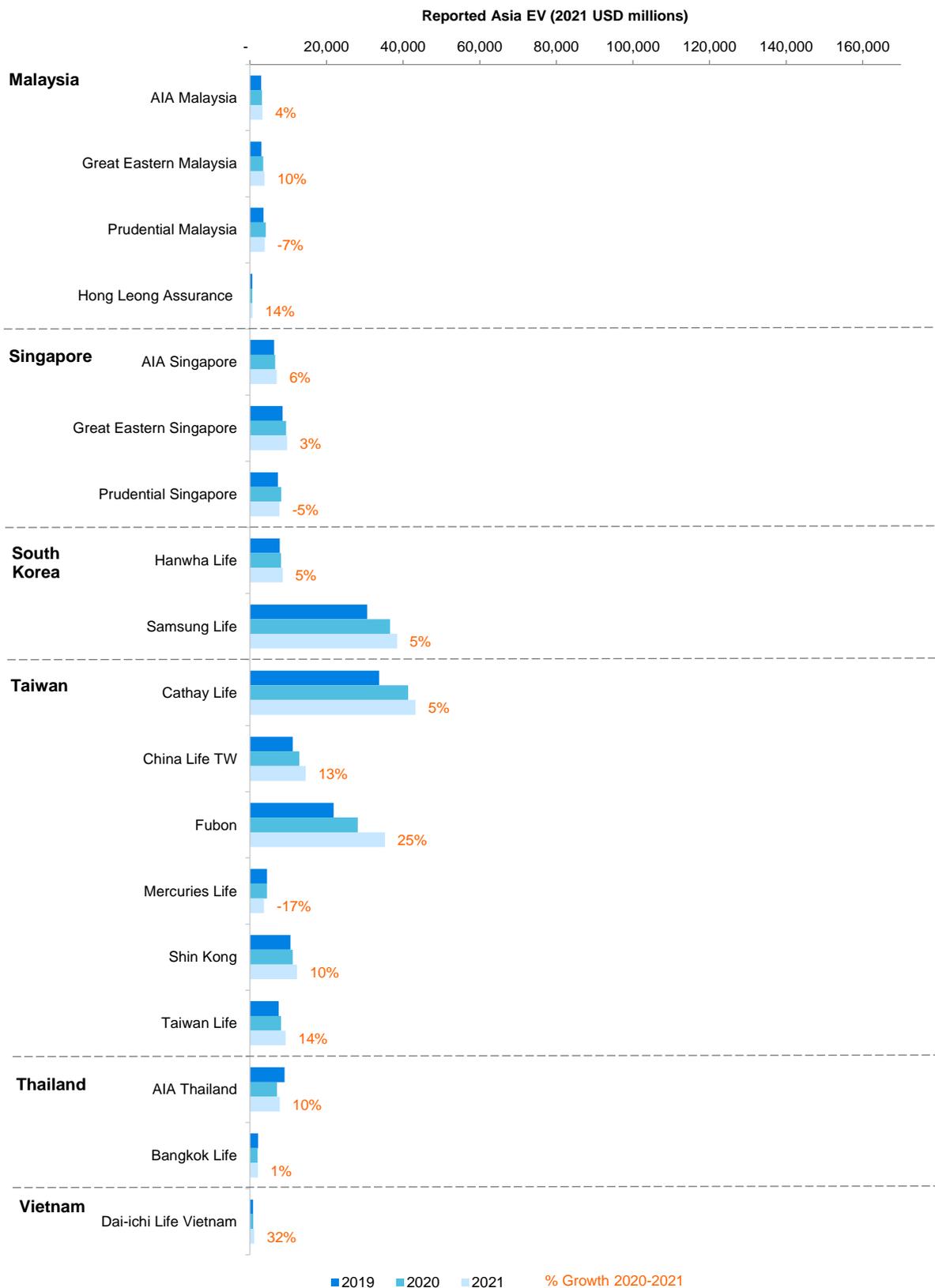
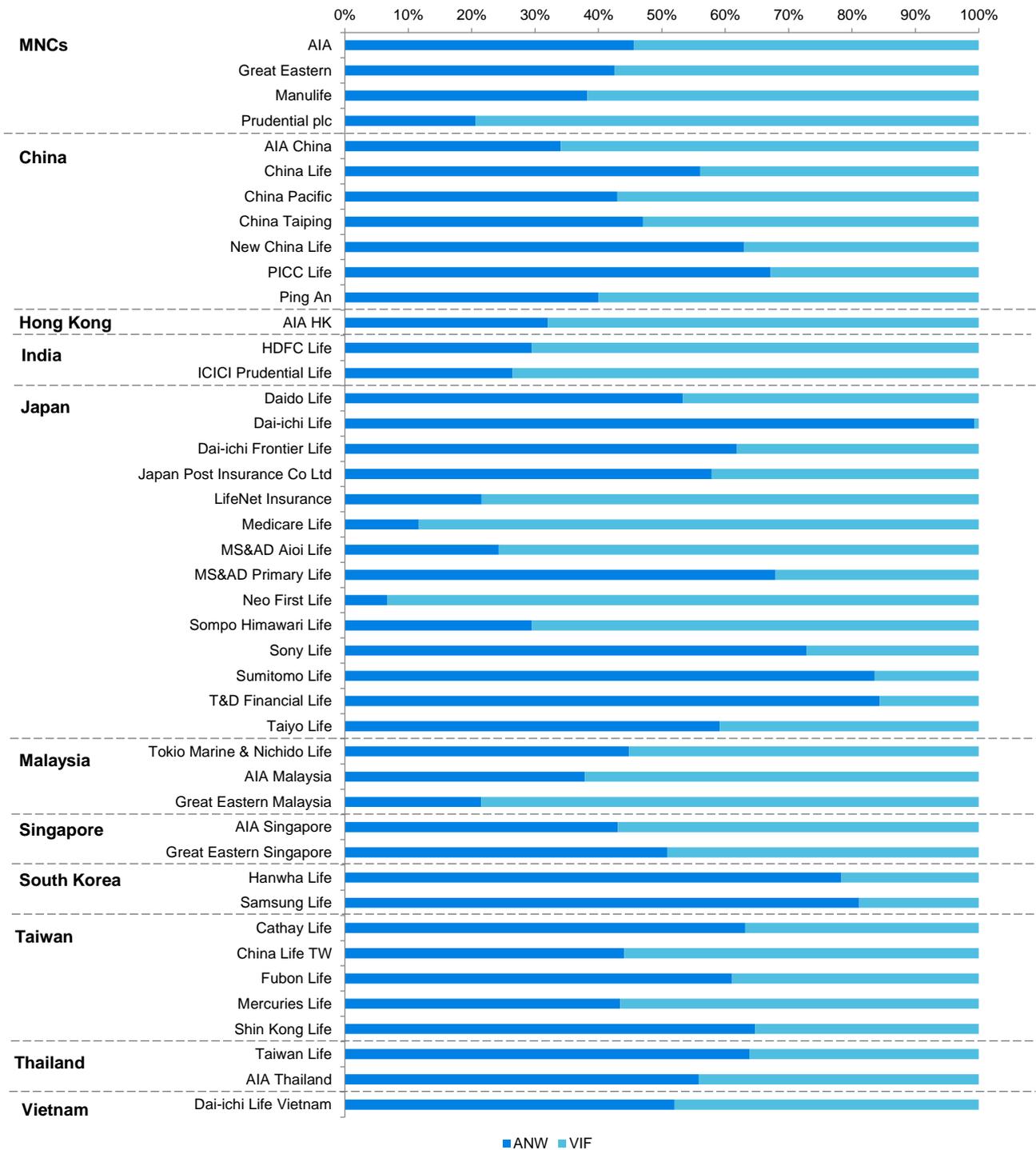


Figure 21 above shows the growth in EV by individual company. Many insurers experienced a growth in their EV indicating that most of the region benefitted from the lifting of pandemic-related restrictions. Allianz reported significant EV growth of 40.6%, followed by Dai-ichi Life Vietnam, Medicare Life, and Fubon with 31.8%, 27.3%, and 25.0%, respectively. The growth in EV at Allianz was attributed to favourable economic movements and stronger Asian currencies.

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

FIGURE 22: SPLIT OF 2021 ASIAN LIFE INSURANCE EV BETWEEN VIF AND ANW BY COMPANY³⁹



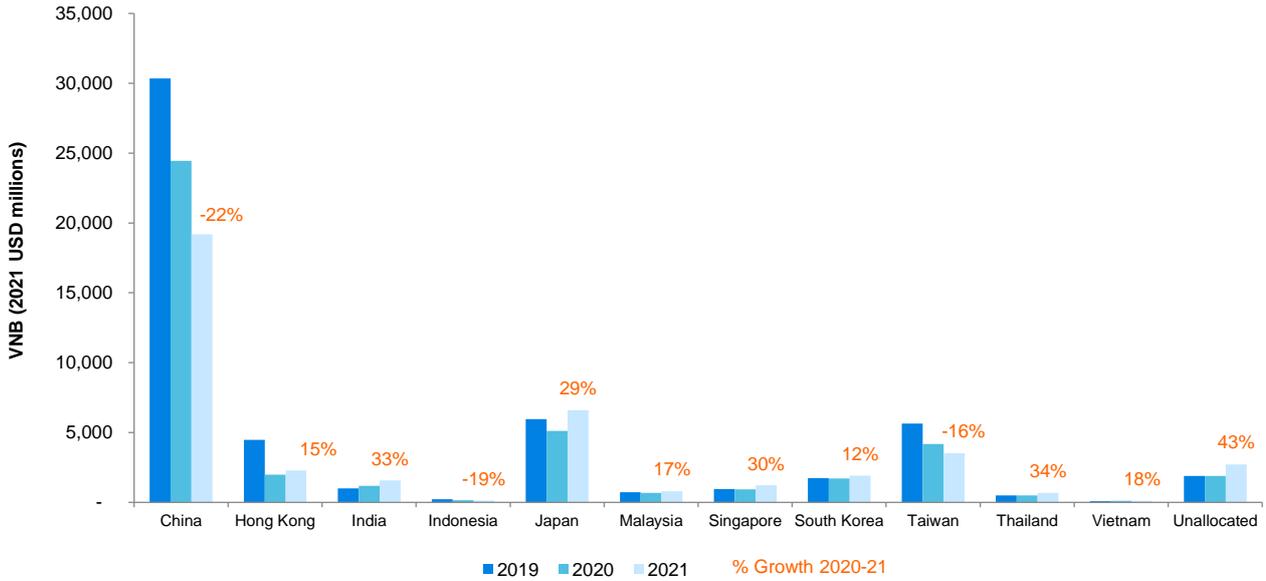
³⁹ The companies which do not disclose the split of EV between ANW and VIF have been excluded from this graph.

Figure 22 breaks down reported EV for 2021 into its VIF and ANW components for each market. In general, insurers in South Korea show a higher proportion of their EV coming from ANW, compared with insurers in other markets. The key factor for markets with higher ANW compared to VIF, tends to be persistent low interest rates and negative spread in-force portfolios.

VNB IN ASIA

Total reported VNB for Asia stood at USD 40.7 billion in 2021, compared with USD 42.9 billion in 2020, representing a decline of 5.1%.⁴⁰ Figure 24 provides a market-by-market comparison of VNB growth based on converting results in local currency to USD using prevailing exchange rates at the same (financial year-end 2021) reporting date for all years, i.e., using a constant currency basis.

FIGURE 23: REPORTED VNB OF ASIAN OPERATIONS ON A COMPARABLE BASIS,⁴¹ 2019 TO 2021



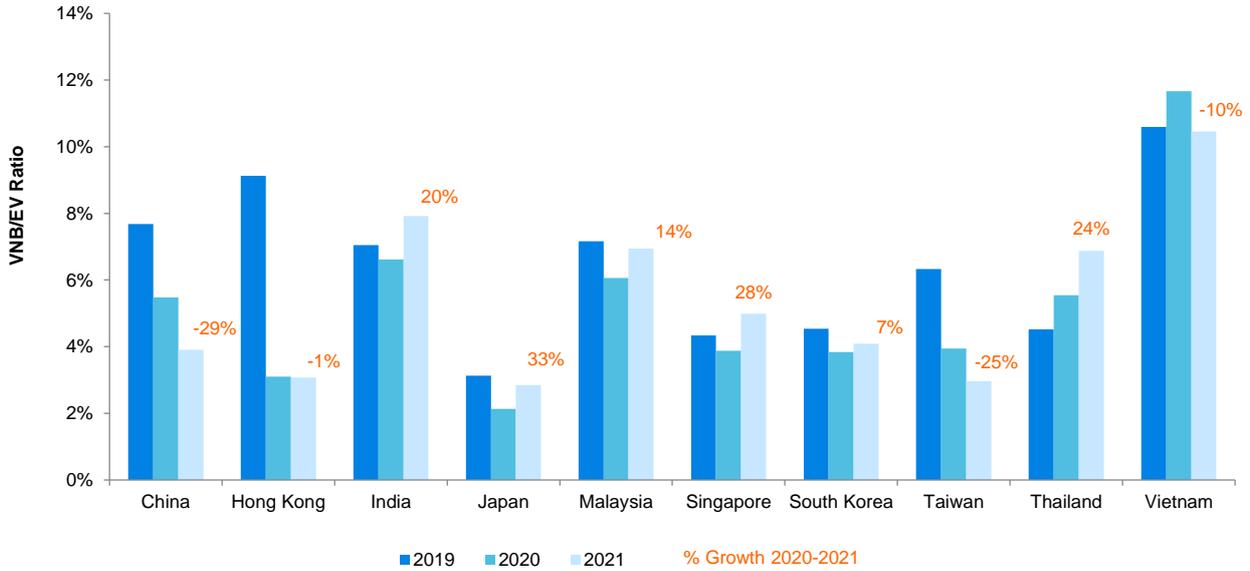
All Asian markets except for China, Indonesia and Taiwan recorded increases in VNB in 2021. China recorded the largest decline in VNB of 21.5%, driven by a shift in business mix and lower sales due to lower consumer spending amid its COVID-19 resurgence. Prudential plc remains the only company that discloses VNB results in Indonesia. Despite a 37% growth in the number of standalone protection policies sold and a 19% increase in new Sharia policies over the period, the stringent COVID-19 restrictions in Indonesia led to a decline in overall sales and VNB results. In Taiwan, all insurers recorded falls in VNB due to lower new business sales, as COVID-19 restrictions had to be introduced in a country that was largely unscathed by the pandemic in 2020.

In 2021, Thailand saw the largest VNB growth, increasing by 34.4% year on year. This was followed by India by 33.1%, where all insurers posted increases in VNB in 2021, mainly driven by higher new business sales due to the lifting of COVID-19 related restrictions.

⁴⁰ This percentage has been calculated on a comparable basis, i.e., only those companies that have disclosed a full set of 2019, 2020, and 2021 numbers have been included here.

⁴¹ As at the data cutoff date, some insurers have not yet disclosed their 2021 EV figures. Hence, this chart and subsequent commentary only includes insurers that have a complete set of 2019, 2020, and 2021 EV figures. The performance of the remaining companies will be included in our mid-year EV update report. The missing companies include PNB MetLife, Reliance Nippon Life, and LIC.

FIGURE 24: VNB/EV RATIO,⁴² 2019 TO 2021



Except for China, Hong Kong, Taiwan, and Vietnam, all markets saw a rise in the VNB/EV ratio over the past year. Japan and Singapore witnessed a significant increase in VNB/EV ratio in 2021, primarily because of strong new business sales on an APE basis, which led to a significant increase in VNB, while EV results remained broadly unchanged from 2021. The VNB/EV ratio for India and Thailand has increased due to a greater increase in VNB as compared to the increase in EV over the year. The fall in VNB/EV ratio for Hong Kong is due to a greater rise in EV compared to a smaller increase in VNB. The drop in VNB/EV ratio for China and Taiwan is due to growth in EV coupled with reductions in VNB.

⁴² 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 25 presents each individual company's VNB from 2019 to 2021.

FIGURE 25: ASIAN VNB BY COMPANY, 2019 TO 2021

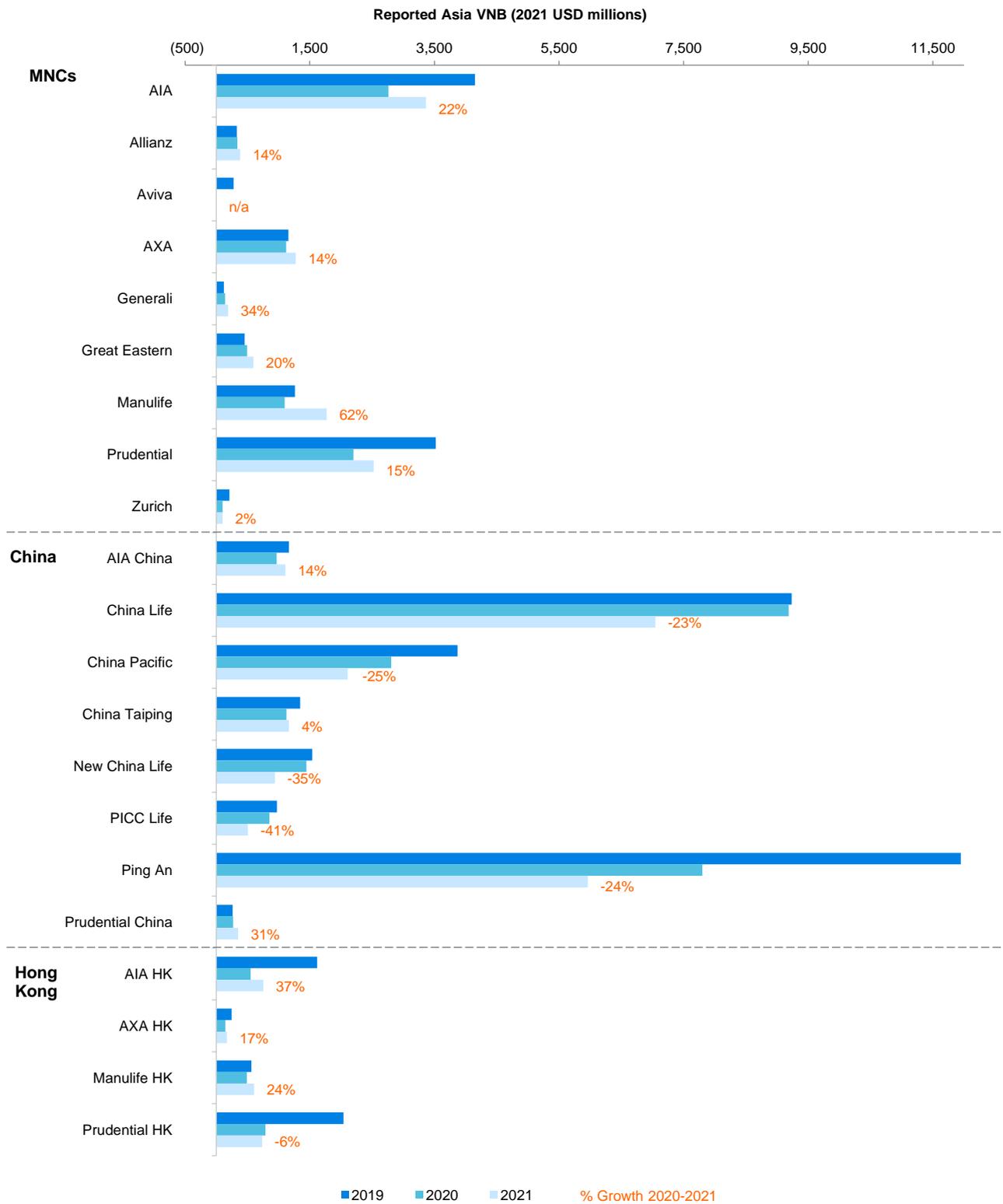


FIGURE 25: ASIAN VNB BY COMPANY, 2020 TO 2021 (CONTINUED)

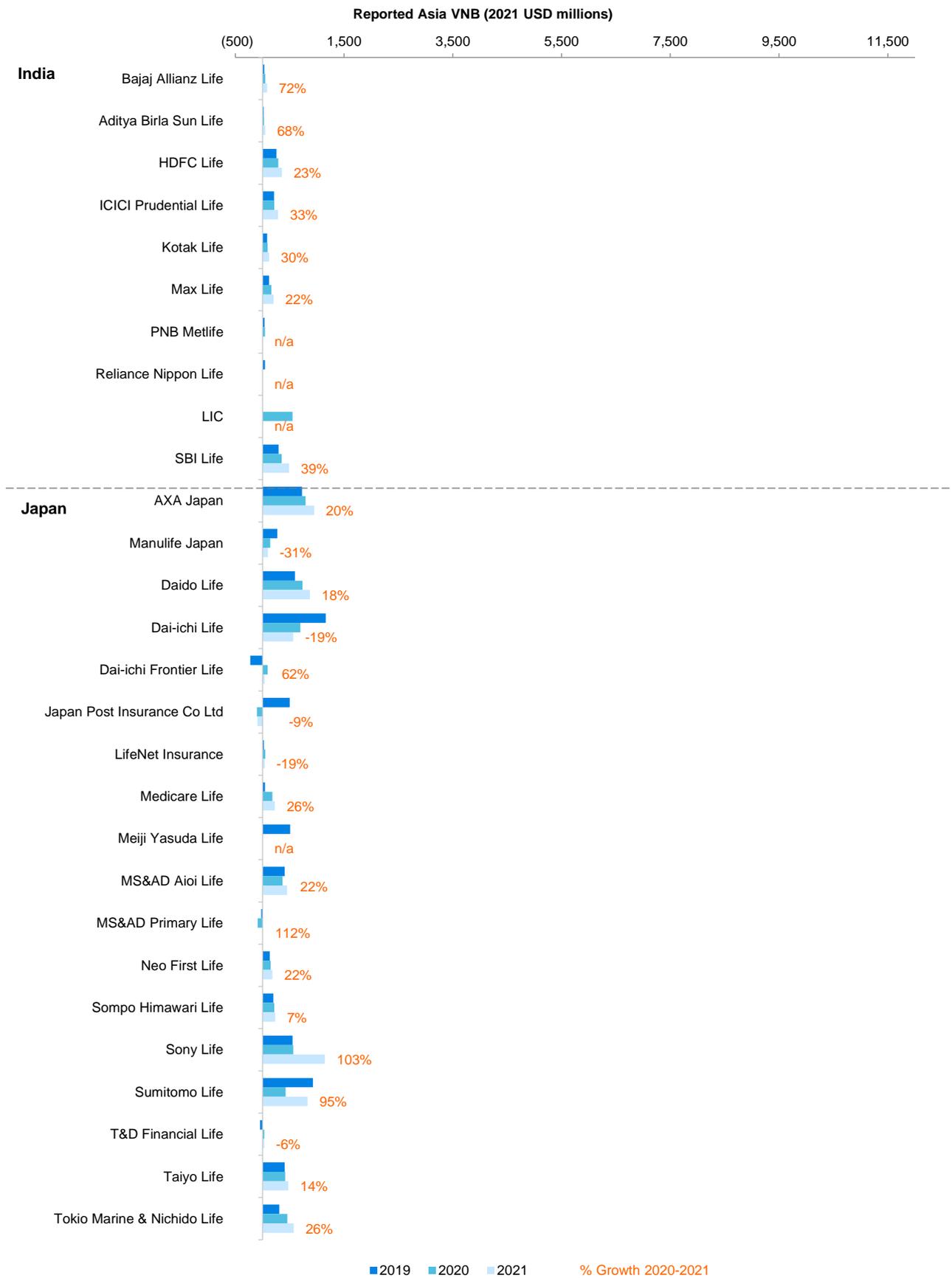
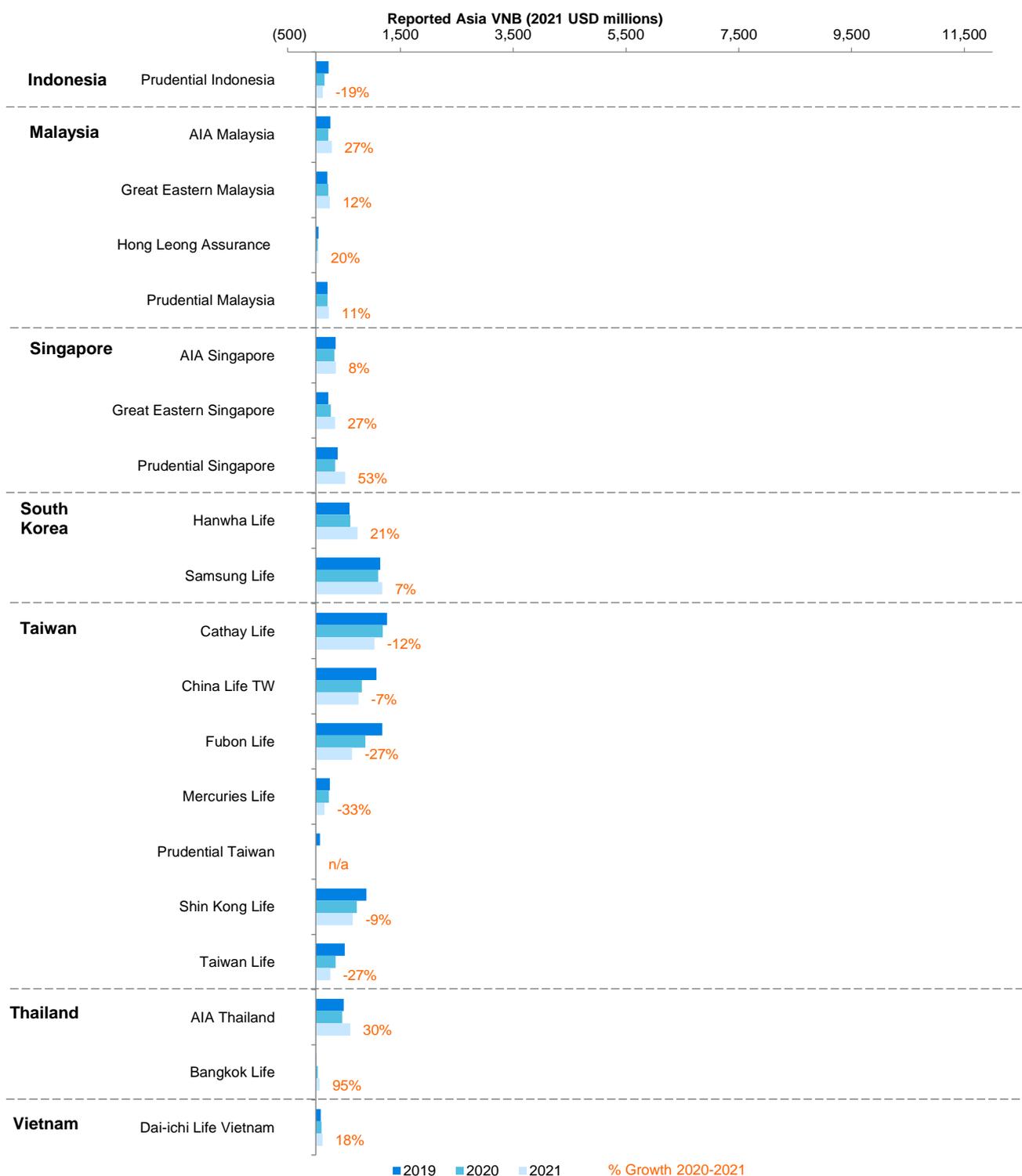


FIGURE 25: ASIAN VNB BY COMPANY, 2019 TO 2021 (CONTINUED)

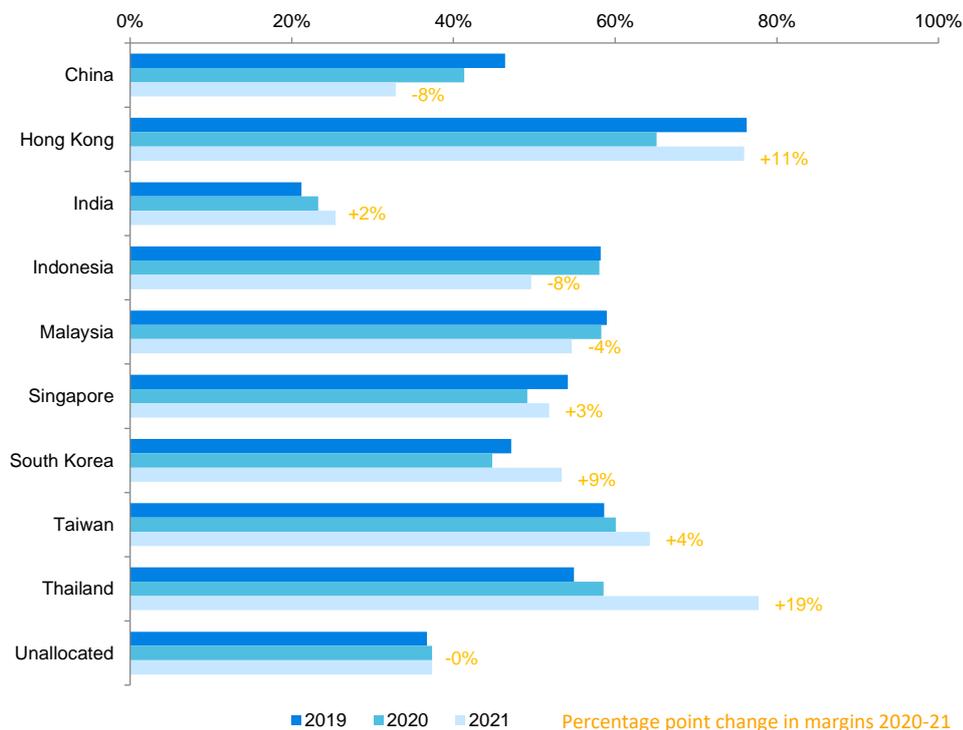


Comparable Asia VNB fell marginally by 5.1% in 2021, reflecting mixed sales results across the region. Chinese insurers in particular reported decreases in VNB results, as new business sales were severely affected by continuing lockdown measures coupled with a reduction in new business margins, resulting primarily from a shift in business mix amidst the challenging market environment in China. In most other markets the relaxing of restrictions led to material rebounds in sales.

The highest increases in 2021 VNB were posted by the Japanese insurers MS&AD Primary Life and Sony Life. Refer to the 'Detailed Market Analysis' section below for more information.

NEW BUSINESS MARGINS⁴³ IN ASIA

FIGURE 26: IMPLIED NEW BUSINESS MARGINS⁴⁴ BY MARKET, 2019 TO 2021



Based on the EV disclosures available, only China, Indonesia, and Malaysia showed declining new business margins in the region, while Thailand and Hong Kong posted significant increases in margins in 2021. However, overall new business margin has declined for Asia. In Thailand, insurers attributed the increase in new business margin to a shift in product mix towards protection and participating products. The increase in investment return assumptions, as a result of a rising yield curve, also brought about significant VNB growth in Thailand. The VNB margin growth in India was driven largely by the continued focus on selling higher volumes of protection business and non-participating savings business.

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 (2019, 2020, and 2021).⁴⁵ This contrasts with the previous sections’ figures, where the EV and VNB results were converted to USD using the prevailing exchange rate at each insurer’s reporting date for 2021. As a result of exchange rate differences, the 2021 growth rates for each MNC’s subsidiary may not be the same as those presented in the previous sections.

⁴³ New business margin has been defined as the ratio of VNB and new business APE as commonly used in Asia, except for Japanese companies that report new business margins as the ratio of VNB to the PVNBP, as defined by the MCEV principles. Japan and Vietnam are excluded from this graph, since Japanese insurers and Dai-ichi Life Vietnam disclose PVNBP numbers instead of APE.

⁴⁴ This chart has been calculated by taking the sum of all disclosed VNB in each market besides Japan and Vietnam, divided by the commensurate APE figure sold by the company in the market. As such, the reliability of this chart will increase depending on the actual number of companies (and their collective market share) disclosing information by geography. This means that for markets with very few disclosures, such as Taiwan, Indonesia, Malaysia, Singapore, and Thailand, this analysis may not reflect profitability across the whole market. For further detail, please refer to the individual jurisdictions in the ‘Detailed Market Analysis’ section below.

⁴⁵ Please note that not all the financial years of insurers coincide with calendar years. In this report, we have defined 2021 results to be the financial year results that contain the majority of 2021 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 2022. Hence, when referring to Indian and Japanese insurers, 2021 refers to the year ending 31 March 2022.

China

FIGURE 27: REPORTED EV OF CHINESE INSURANCE OPERATIONS, 2019-2021

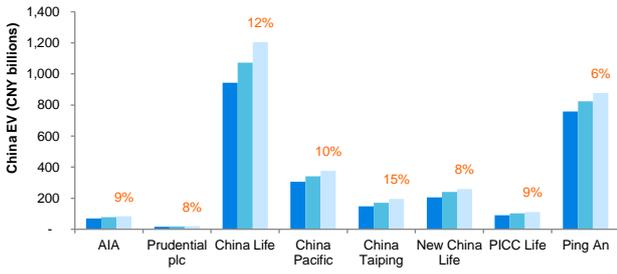


FIGURE 28: REPORTED ANW OF CHINESE INSURANCE OPERATIONS, 2019-2021

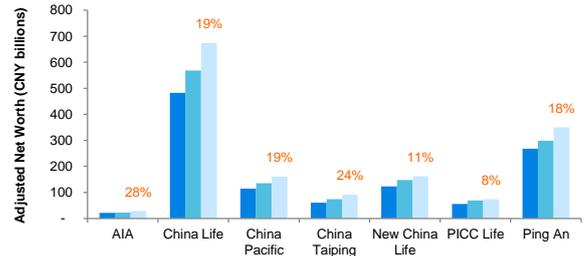


FIGURE 29: REPORTED VIF OF CHINESE INSURANCE OPERATIONS, 2019-2021

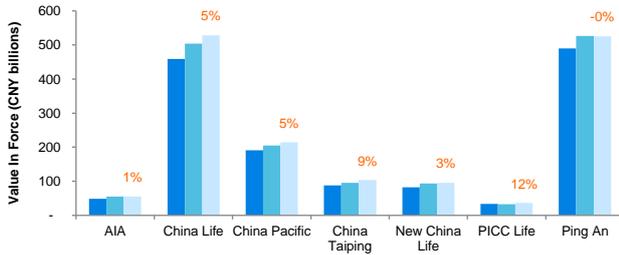


FIGURE 30: REPORTED VIF/ANW SPLIT OF CHINESE INSURANCE OPERATIONS, 2021

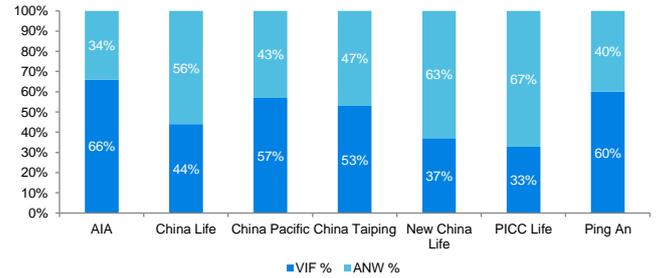


FIGURE 31: REPORTED VNB OF CHINESE INSURANCE OPERATIONS, 2019-2021

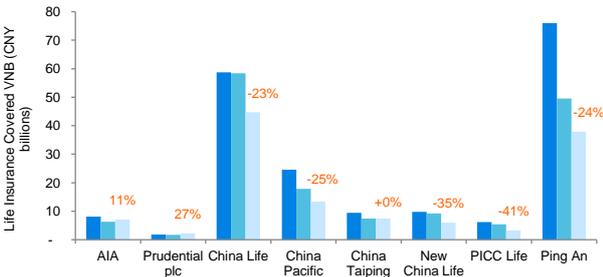


FIGURE 32: REPORTED APE^{46 47} OF CHINESE INSURANCE OPERATIONS, 2019-2021

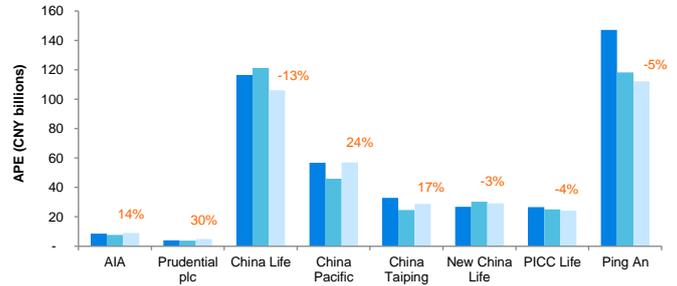
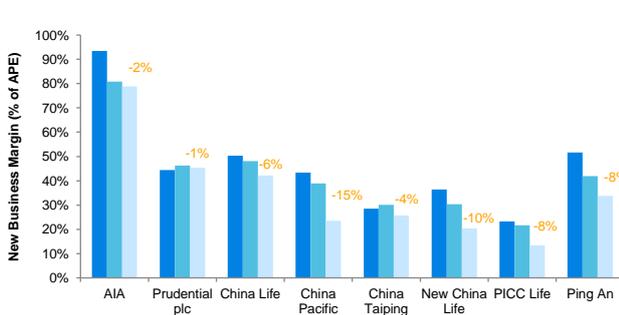


FIGURE 33: REPORTED NEW BUSINESS MARGINS⁴⁸ OF CHINESE INSURANCE OPERATIONS, 2019-2021



■ 2019 ■ 2020 ■ 2021

1-Year Growth % 2020-2021

Percentage point change in margins 2020-2021

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 32 and may not represent actual margins of the respective companies.

Eight companies reported 2021 EV results in China, with three companies reporting double-digit growth this year. China Taiping reported the highest growth in EV at 15.4%, followed by China Life at 12.2%, and China Pacific at 10.3% in 2021.

The growth in VNB was mixed in 2021, with Prudential plc posting the highest VNB growth of 27.4%, followed by AIA China recording an 11.4% increase in 2021. AIA China's differentiated Premier Agency strategy along with increase in adoption of digital tools and continued geographical expansion supported this double-digit growth.

PICC Life reported the highest fall in VNB at 40.6% in 2021, followed by New China Life, China Pacific, Ping An, and China Life, with falls in VNB of 34.9%, 24.8%, 23.6%, and 23.3%, respectively. The significant fall in VNB of Ping An was attributed to the temporary disruption in selling long-term protection products by agents due to lower consumer spending amid the resurgence of the COVID-19 pandemic. The fall in VNB for both China Life and China Pacific was ascribed to a challenging market environment leading to difficulties in agent recruitment and retention, and a shift in business mix.

Unlike other Asian markets, the Chinese yield curve decreased during 2021. While the majority of insurers have kept their discount rate assumptions unchanged from 2020, AIA China and Prudential plc have decreased their discount rates by 3bps and 40bps to 9.72% and 7.30%, respectively, in 2021. Similarly, most insurers did not change their investment return assumptions in 2021, except New China Life and Prudential plc. The full set of economic assumptions disclosed in the market is set out in Figure 103 below. Domestic life insurers typically assume investment returns between 4.5% to 6.0%, with RDRs of around 11.0%.

In March 2022, the China Banking and Insurance Regulatory Commission (CBIRC) gave approval to National Pension Insurance Company to commence operations as a standalone insurer in China.

The General Office of the State Council issued opinions on promoting the development of the individual pension system, where a defined contribution individual retirement account would be established and be used to purchase qualified financial products such as bank wealth management products, savings deposits, commercial pension insurance, mutual funds, etc.

The CBIRC released regulatory rules on commercial pension finance, encouraging banking and insurance institutions to develop pension finance services and diversify product offerings.

In December 2021, the CBIRC published the official documents of China's solvency regulatory rules II, which marked the successful completion of the China Risk Oriented Solvency System (C-ROSS) Phase II project. Insurers are required to apply the new rules starting from the 2022 Q1 solvency reports.

The CBIRC issued rules on accident insurance business to address problems such as low loss ratios, abnormally high commissions, and non-compliant sales practices. Furthermore, the CBIRC released a notice in October 2021 to further regulate online personal insurance.

Hong Kong

FIGURE 34: REPORTED EV OF HONG KONG INSURANCE OPERATIONS, 2019-2021⁴⁹

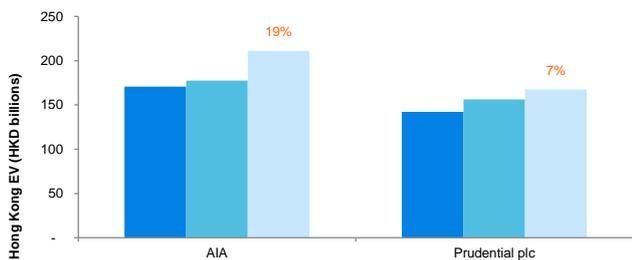


FIGURE 35: REPORTED ANW OF HONG KONG INSURANCE OPERATIONS, 2019-2021

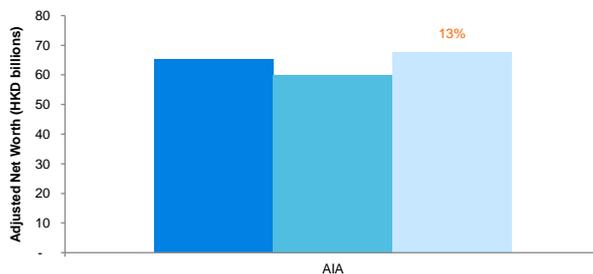


FIGURE 36: REPORTED VIF OF HONG KONG INSURANCE OPERATIONS, 2019-2021

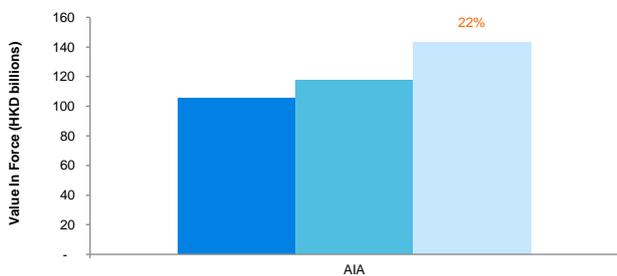


FIGURE 37: REPORTED VIF/ANW SPLIT OF HONG KONG INSURANCE OPERATIONS, 2021

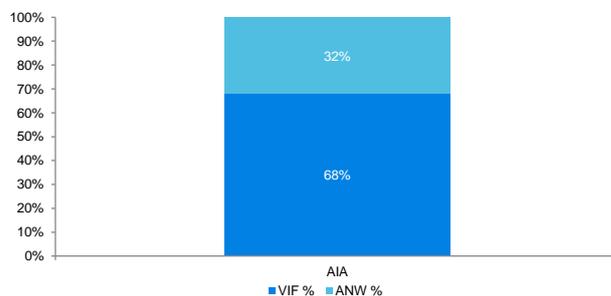


FIGURE 38: REPORTED VNB OF HONG KONG INSURANCE OPERATIONS, 2019-2021

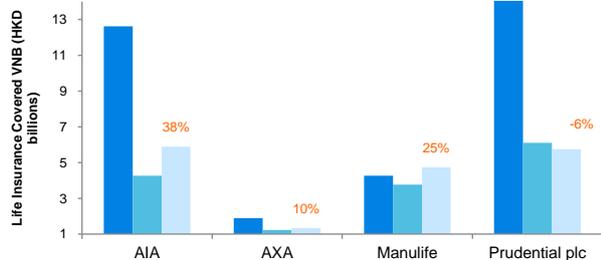


FIGURE 39: APE OF HONG KONG INSURANCE OPERATIONS, 2019-2021

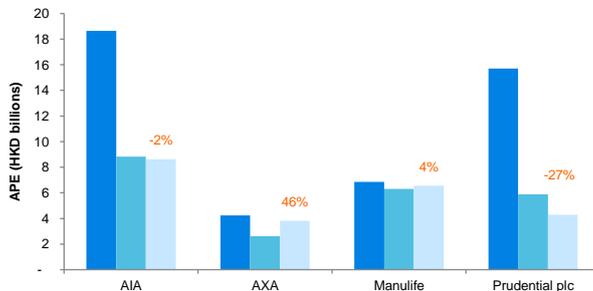
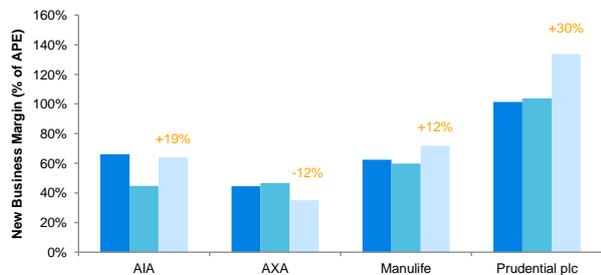


FIGURE 40: REPORTED NEW BUSINESS MARGIN (% OF APE) OF HONG KONG INSURANCE OPERATIONS, 2019-2021



■ 2019 ■ 2020 ■ 2021
 1-Year Growth % 2020-2021
 Percentage point change in margins 2020-2021

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

According to the Hong Kong Insurance Authority (IA), Hong Kong's overall 2021 individual non-linked business premiums decreased by 3.7% to HKD 447 billion, while linked business premiums increased by 61.0% to HKD 45 billion. New business premium from the Mainland China Visitors (MCV) segment continued to fall, decreasing by 89.9% from 2020 to 2021, to a level of HKD 688 million. This represents 0.4% of the total new individual business in 2021, compared to 5.1% in 2020 and 25.2% in 2019.

AIA and Prudential plc disclosed both EV and VNB results for their Hong Kong operations in 2021, while AXA and Manulife reported only new business results.

The growth in VNB was positive for all of the above insurers, except Prudential plc, which recorded a fall of 6%. Among these companies, AIA posted the highest VNB growth rate of 38.2%. The company attributed the growth to its domestic customer segment, development of new flagship products, as well as a new bancassurance partnership with The Bank of East Asia, Limited (BEA). Manulife recorded VNB growth of 25.4% and attributed this to favourable interest rates and its product management actions. In 2021, the growth in APE was mixed in local currency terms.⁵⁰ AXA and Manulife saw APE rise by 45.6% and 4.3%, respectively. In contrast, Prudential plc recorded a steep fall of 27.0%, followed by AIA with a modest reduction of 2.3%.

There was an increase in new business margins for the above insurers, with Prudential plc disclosing the highest growth rate of 30.0 percentage points. AIA and Manulife reported increases in new business margin of 19.3 percentage points and 12.1 percentage points, respectively. For AIA, this was primarily attributed to higher government bond yields and a reduction in acquisition expense overruns. The new business margins for AXA reduced by 11.5 percentage points, with AXA blaming this reduction on an unfavourable change in product mix.

In terms of regulatory developments, the IA issued a note to formalise the 'greenlight process' for assessment of ILAS products against the Standards in Guideline on Underwriting Class C Business (GL15). The IA has tightened the requirements on ILAS products and has also set out the criteria for the ILAS products to be considered Protection Linked Plans (PLP), i.e., products with higher embedded levels of protection and subject to different requirements for disclosure at the point of sale.

In April 2022, the IA issued a circular to clarify and enhance the supervisory standards and requirements on the use of premium financing in taking out life insurance policies. Further disclosure requirements have been added to help customers to make better informed decisions before deciding to use premium financing.

With regards to the upcoming Hong Kong RBC framework, the IA issued a set of technical specifications for early adoption of the framework. As at the time of producing this report, two insurance companies have been approved by the IA to early-adopt Hong Kong RBC as their statutory reporting basis. The IA is also engaging the industry to finalise the Pillar 3 disclosure requirements, including the frequency of reporting and the level of detail required. The Hong Kong RBC framework is expected to become effective from 1 January 2024.

The IA announced an extension of the temporary facilitative measures introduced related to Non-Face-to-Face (NFTF) distribution of specific protection insurance products, which were introduced last year, to 31 March 2022, in view of COVID-19 pandemic developments.

⁵⁰ APE throughout this section have been converted to local currency using the prevailing exchange rates applicable at each reporting date (2019, 2020, and 2021). These figures are different to the disclosed APE in reported currency terms.

India

FIGURE 41: REPORTED EV OF INDIAN INSURANCE OPERATIONS, 2019-2021^{51 52}

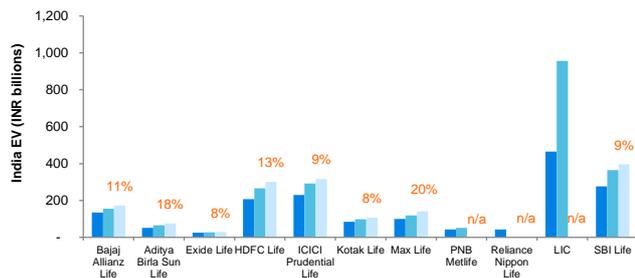


FIGURE 42: REPORTED ANW OF INDIAN INSURANCE OPERATIONS, 2019-2021⁵³

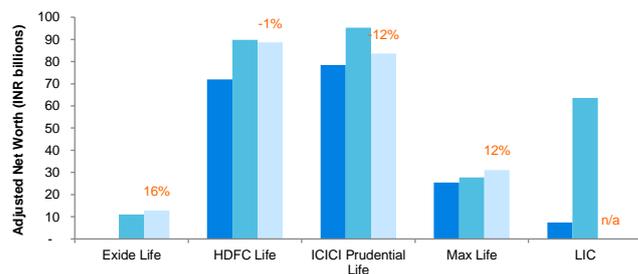


FIGURE 43: REPORTED VIF OF INDIAN INSURANCE OPERATIONS, 2019-2021

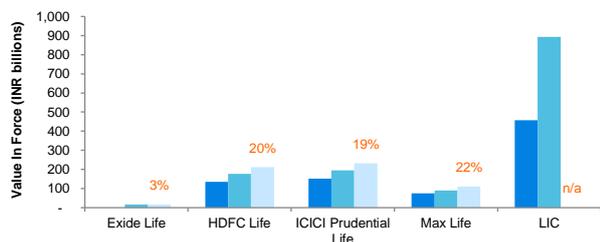


FIGURE 44: REPORTED VIF/ANW SPLIT OF INDIAN INSURANCE OPERATIONS, 2021⁵⁴

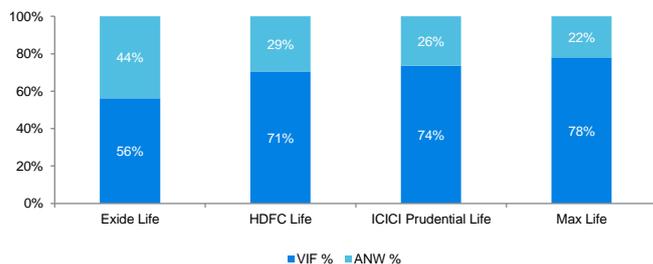


FIGURE 45: REPORTED VNB⁵⁵ OF INDIAN INSURANCE OPERATIONS, 2019-2021

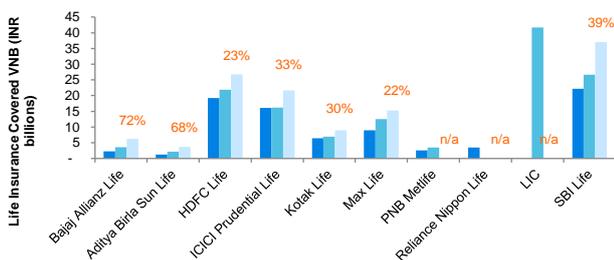


FIGURE 46: REPORTED APE⁵⁶ OF INDIAN INSURANCE OPERATIONS, 2019-2021

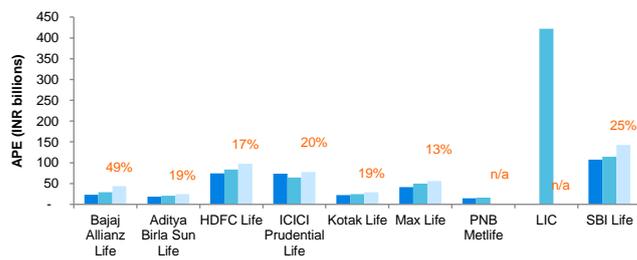
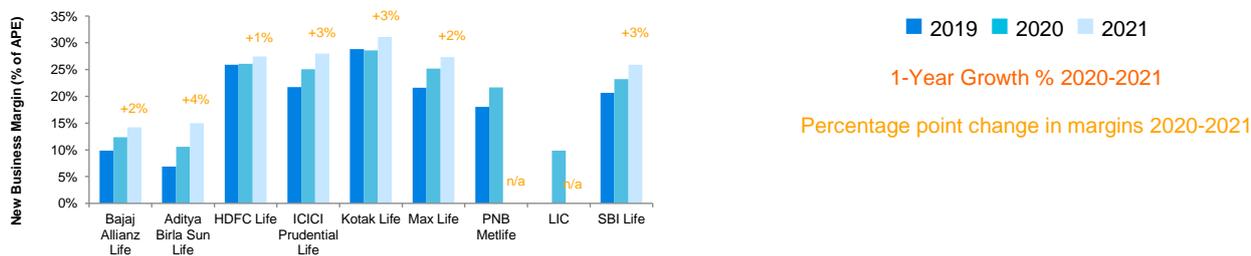


FIGURE 47: REPORTED NEW BUSINESS MARGIN OF INDIAN INSURANCE OPERATIONS, 2019-2021



⁵¹ For the purposes of this report, 2021 for India insurers represents the financial year ending 31 March 2022.

⁵² LIC, PNB MetLife, and Reliance Nippon Life have not disclosed their 2021 results before the cutoff date for this report, i.e., 31 May 2022.

⁵³ In Figures 42, 43, and 44, Aditya Birla Sun Life, Bajaj Allianz Life, SBI Life, and Kotak Life have been excluded, as their split of EV for 2021 has not been disclosed.

⁵⁴ In Figure 44, LIC has been excluded as EV and split of EV as at 31 March 2022 has not been disclosed before the cutoff date for this report, i.e., 31 May 2022.

⁵⁵ For comparability, the VNB and new business margin figures are after the impact of expense overruns.

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 of all insurance companies grew in 2021, with Max Life Insurance recording the highest growth of 19.8%. Owing to rising interest rates, primarily in the last quarter of 2021, the larger Indian life insurers reported higher VIF and lower ANW in 2021.

The EV / VNB methodology in India has also largely converged to a market-consistent approach. All insurers use either MCEV or IEV methodologies, except for Reliance Nippon Life, which last disclosed its results as at 31 March 2021 using a TEV methodology.

Reported new business margins (after allowing for the impact of acquisition expense overruns) were in the range of 14.2% to 31.1%. All insurers recorded an increase in VNB results in 2021. Bajaj Allianz Life recorded the highest VNB growth of 72.2% in 2021, which it attributes to a more profitable product mix and growth in new business volumes.

All insurers reported an increase in APE, with Bajaj Allianz Life recording the highest year-on-year growth of 49.3% in 2021, followed by SBI Life, whose APE grew by 24.9%.

Life Insurance Corporation (LIC), India's largest state-owned life insurance company, launched its IPO on 4 May 2022. The embedded value for LIC was valued at 69.63 billion (USD) as at 30 September 2021. The IPO was fully subscribed on the second day of bidding and was subscribed by 2.95 times by the final day of bidding. The shares were listed at Rs867.20, representing a discount of 8.62% to the IPO allotment price of Rs 949.

A new IRDAI chairman assumed office in 2022. It appears that priorities at the regulator in the coming years will be the introduction of an RBC regime, and other enabling regulations to simplify the launch and ongoing management of insurance companies, in order to further develop the sector and enhance insurance penetration.

In June 2022, IRDAI has introduced a new 'Use and File' (U&F) regime for a range of life insurance products, including protection products, investment-linked products, health products, and all riders. The IRDAI has also introduced similar relaxations for health insurance products. To launch a product under the U&F regime, a company has to first establish a Board Approved Product Management & Pricing Policy (BAPMPP) and a Product Management Committee (PMC). A company may file a product with the IRDAI once its PMC approves the product, then launch the product within 15 days of this filing, without waiting for the IRDAI's approval.

Indonesia

FIGURE 48: REPORTED EV OF INDOONESIAN INSURANCE OPERATIONS, 2019-2021

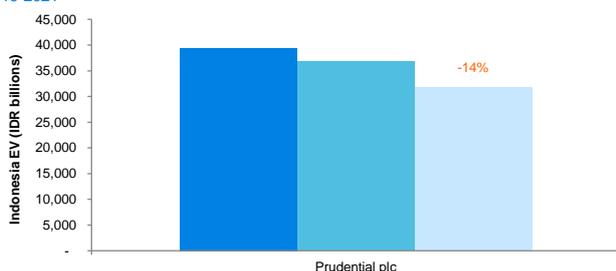


FIGURE 49: REPORTED VNB⁵⁷ OF INDOONESIAN INSURANCE OPERATIONS, 2019-2021⁵⁸

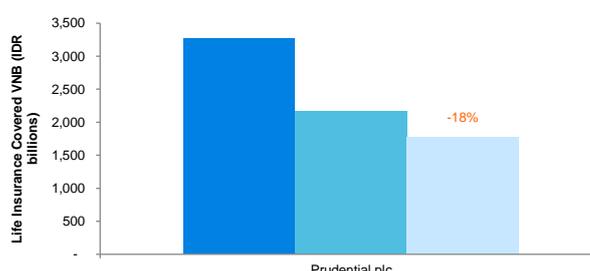


FIGURE 50: REPORTED APE⁵⁹ OF INDOONESIAN INSURANCE OPERATIONS, 2019-2021

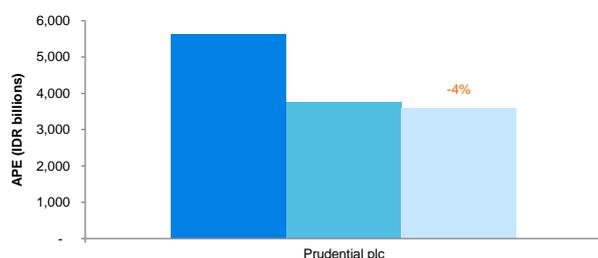
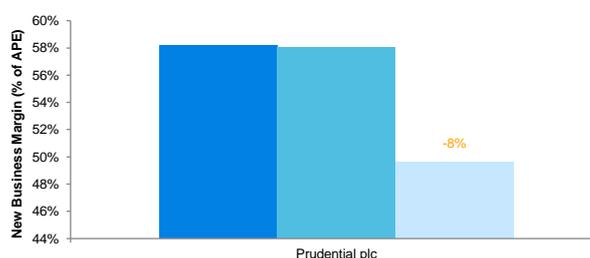


FIGURE 51: REPORTED NEW BUSINESS MARGINS OF INDOONESIAN INSURANCE OPERATIONS, 2019-2021



■ 2019 ■ 2020 ■ 2021

1-Year Growth % 2020-2021

Percentage point change in margins 2020-2021

Prudential plc remains the only insurer to disclose EV results for Indonesia. Although AIA’s results are not disclosed (it is part of an aggregated classification), some of the underlying EV assumptions are provided.

For 2021, Prudential reported a fall of 4.1% in APE in local currency terms, down from IDR 3,740 billion in 2020 to IDR 3,587 billion in 2021. The company also reported a decrease of 18.1% in VNB in local currency terms, down from IDR 2,171 billion in 2020 to IDR 1,779 billion in 2021. Despite a 37% growth in the number of standalone protection policies sold and a 19% increase in new Sharia policies over the period, the continuing impact of COVID-19 restrictions contributed to the decline in overall APE.

The RDR for AIA Indonesia decreased from 13.0% to 12.98% in 2021, while Prudential increased it from 8.90% for new business and 10.0% for in-force business in 2020 to 9.90% and 10.50%, respectively, in 2021. AIA Indonesia’s investment return assumptions for 2021 remained unchanged from 2020 at 12.0% for equity returns and 7.5% for 10-year government bond yields. Prudential increased its 10-year government bond yield assumption by 50bps to 7.0% for 2021. The 10-year government bond yield in Indonesia as at 31 December 2021 was 6.37%.

The Indonesia Life Insurance Association recorded an annual increase of 8.2% in total premium income in 2021, up from IDR 187.58 trillion in 2020 to IDR 202.93 trillion in 2021. The increase is attributed to an increase in bancassurance sales. In 2021, the APE for the life insurance market in Indonesia is IDR 36,318 billion, representing an annual growth of 5.9%.

⁵⁷ VNB and APE throughout this section have been converted to local currency using the prevailing exchange rates applicable at each reporting date (2019, 2020, and 2021). 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.

In early 2022, the Indonesia Life Insurance Association issued an industry roadmap for the next 25 years, aiming for increasing insurance literacy, insurance inclusivity, customer satisfaction, and strengthening corporate governance and capital structures. The Indonesian Financial Services Authority (OJK) has also extended the countercyclical policies that were implemented in response to COVID-19 to 17 April 2023.

Investment-related life insurance products or unit-linked products continue to drive the growth of the life insurance industry in Indonesia, although some market players can be seen to be diversifying away from such a strategy. On 14 March 2022, the OJK outlined new regulations for unit-linked business in the Indonesian life insurance market. The regulations seek to enhance the level of transparency and policyholder protections after numerous recent complaints and disputes from dissatisfied customers. A summary of the key changes is summarised in the Milliman e-alert, which can be found [here](#).

Much work has been done in resolving the issues faced by Asuransi Jiwasraya leading to restructuring and transfer of most of the portfolio to Asuransi Jiwa IFG (or IFG Life), with an expectation that the remaining portfolio will be transferred in 2022.

Japan

FIGURE 52: REPORTED EV OF JAPANESE INSURANCE OPERATIONS, 2019-2021⁶⁰

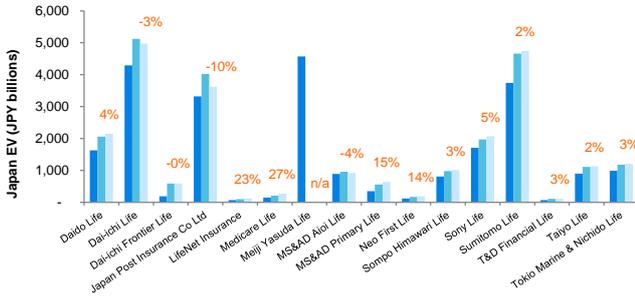


FIGURE 53: REPORTED ANW⁶¹ OF JAPANESE INSURANCE OPERATIONS, 2019-2021

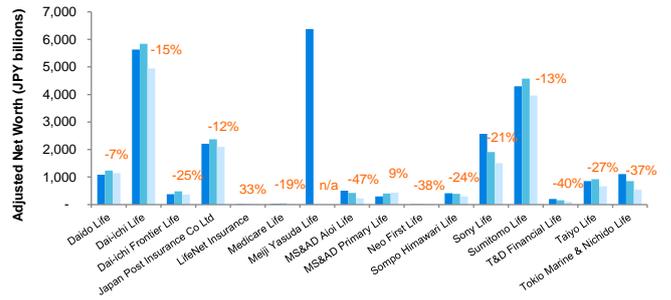


FIGURE 54: REPORTED VIF⁶² OF JAPANESE INSURANCE OPERATIONS, 2019-2021

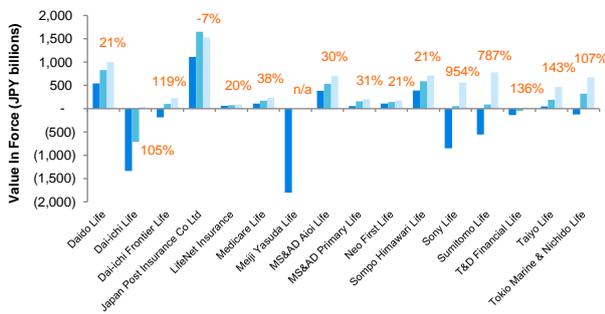


FIGURE 55: REPORTED VIF/ANW SPLIT OF JAPANESE INSURANCE OPERATIONS, 2021

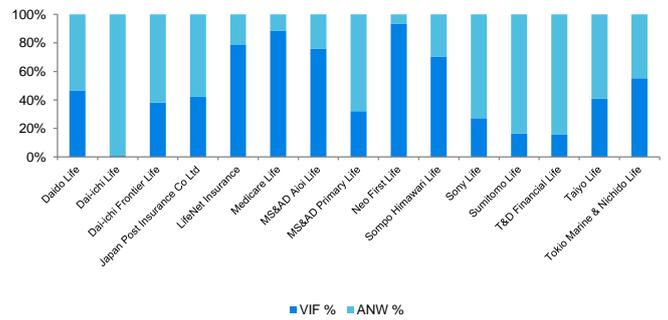


FIGURE 56: REPORTED VNB OF JAPANESE INSURANCE OPERATIONS, 2019-2021

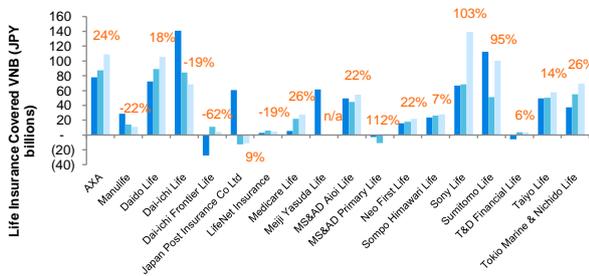


FIGURE 57: REPORTED PVBNP⁶³ OF JAPANESE INSURANCE OPERATIONS, 2019-2021

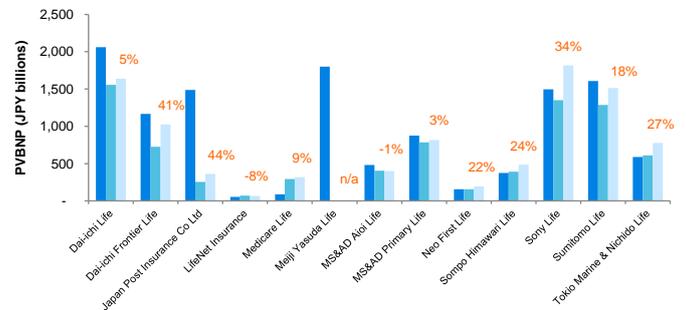
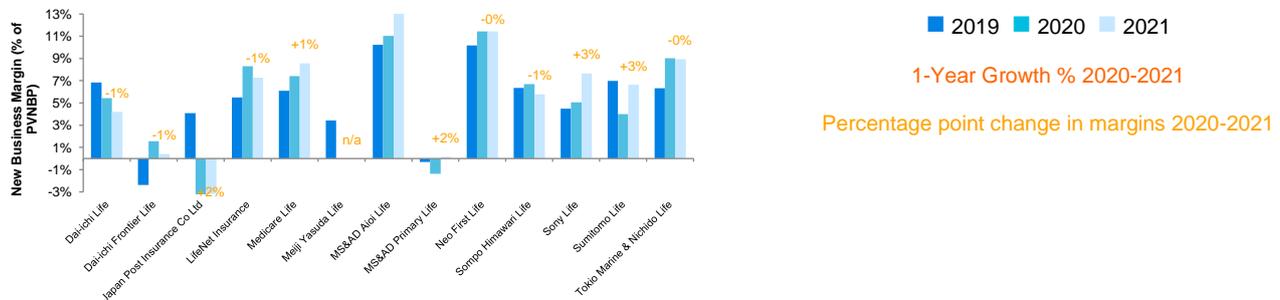


FIGURE 58: REPORTED NEW BUSINESS MARGINS OF JAPANESE INSURANCE OPERATIONS, 2019-2021



⁶⁰ Meiji Yasuda Life has replaced EEV with a new indicator Group Surplus.

⁶¹ In 2021, Japan Post Insurance Co Ltd and MS&AD Primary Life have included unrealised gains on assets backing liabilities in VIF, instead of ANW.

⁶² Ibid.

⁶³ AXA and Manulife have been excluded from this graph as they do not disclose PVBNP numbers.

Interest rates in Japan have risen over the past year. This has caused a decrease in unrealised gains on bonds, leading to lower ANW. The higher interest rates have helped increase VIF for many companies, as interest rates have increased. The net impact on EV is either positive or negative, depending on each company's ALM position as well as other factors such as higher inflation assumptions. The JPY depreciated throughout the year and depreciated even further after the year end. This has increased investment return on foreign securities as well as EV of foreign subsidiaries.

Fifteen companies based in Japan reported EVs in 2021. For most of the insurers, growth in EV and VIF was positive, while growth in ANW was negative primarily due to the above-mentioned interest rate rises.

Medicare Life recorded the highest growth in EV at 27.3% in 2021, while Japan Post Insurance Co Ltd (Japan Post) reported a 10.1% fall during the same period. Japan Post conducted a large-scale share buy-back in 2021. The 10.1% decrease in Japan Post's EV is roughly equal to the amount of share buy-back and shareholder dividend distribution. Furthermore, only Japan Post showed a decrease in VIF, which was partly due to its methodology of reflecting unrealised gains on assets backing insurance business in VIF rather than ANW.

The growth in VNB in 2021 was mostly positive. MS&AD Primary Life recorded the highest growth in VNB at 112.0%, followed by Sony Life at 102.6%. Dai-ichi Frontier Life recorded a 61.9% fall in VNB as compared to 2021.

AXA and Manulife only disclose VNB and APE for their Japan subsidiaries. In 2021, AXA reported an APE of EUR 676 million in Japan, while Manulife reported CAD 544 million. All other Japanese companies disclose Present Value of New Business Premiums (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 Japan Government Bond [JGB]) to discount cash flows. The full set of economic assumptions disclosed to the market is set out in Figure 103 below.

Although the Bank of Japan continued with its quantitative easing policy in 2021, inflation is rising, even though the increase is not as much as in Europe and the U.S. Break-even inflation rate (BEI) at the end of March is around 0.7%. Companies that report MCEV tend to use inflation rate assumptions close to BEI, but companies that report EEV tend to use lower inflation rate assumptions. Some companies that report EEV set inflation to 0.0%, while others use 2.0% to be consistent with use of ultimate forward rates (UFRs).

Some companies adjusted their assumptions to exclude the temporary impact of the COVID-19 pandemic. The sales of some of hospitalisation insurance policies specifically designed for COVID-19, were terminated due to a surge in Omicron variant patients. A few insurers also disclosed that they excluded one-off impacts on unit cost assumptions, such as salary guarantees provided to captive sales agents.

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.

Malaysia

FIGURE 59: REPORTED EV OF MALAYSIAN INSURANCE OPERATIONS, 2019-2021^{64 65 66}

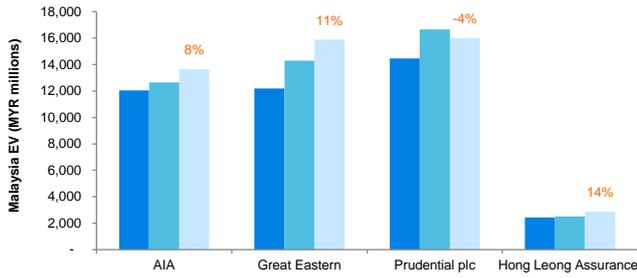


FIGURE 60: REPORTED ANW OF MALAYSIAN INSURANCE OPERATIONS, 2019-2021

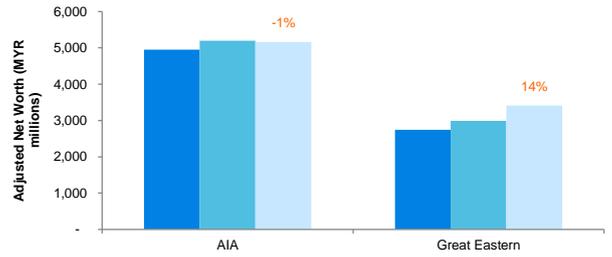


FIGURE 61: REPORTED VIF OF MALAYSIAN INSURANCE OPERATIONS, 2019-2021

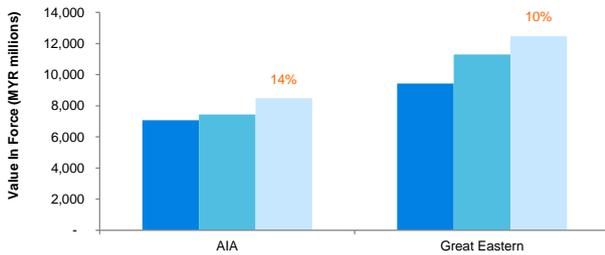


FIGURE 62: REPORTED VIF/ANW SPLIT OF MALAYSIAN INSURANCE OPERATIONS, 2021

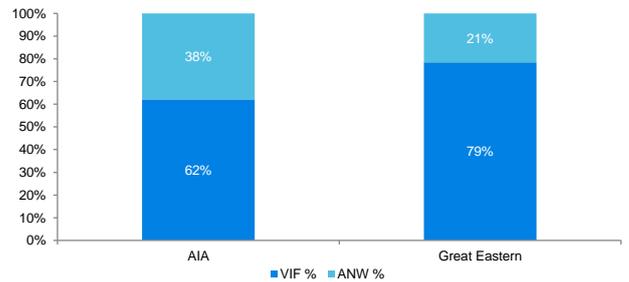


FIGURE 63: REPORTED VNB⁶⁷ OF MALAYSIAN INSURANCE OPERATIONS, 2019-2021⁶⁸

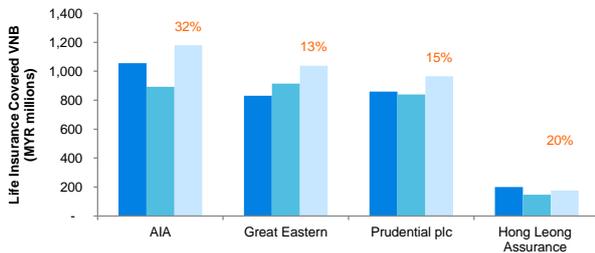


FIGURE 64: REPORTED APE⁶⁹ OF MALAYSIAN INSURANCE OPERATIONS, 2019-2021

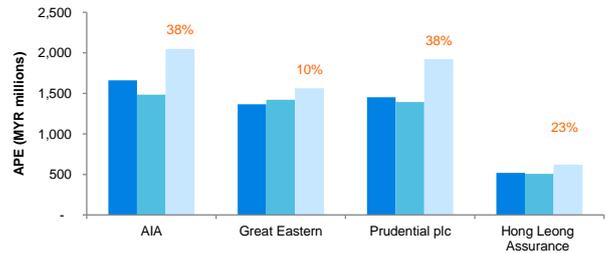
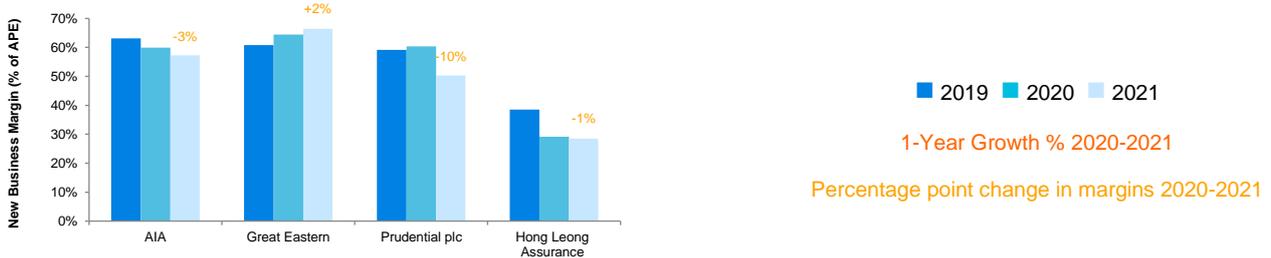


FIGURE 65: REPORTED NEW BUSINESS MARGIN OF MALAYSIAN INSURANCE OPERATIONS, 2019-2021



⁶⁴ Great Eastern Malaysia's EV (ANW plus VIF) figure includes Great Eastern Takaful Berhad (GETB).

⁶⁵ The FX rates used for conversion to local currency (for all charts) are listed in Appendix B.

⁶⁶ FY2021 for Hong Leong Assurance (HLA) Malaysia represents the financial year ending 30 June 2021.

⁶⁷ AIA's VNB and APE figures exclude pension business. For HLA, APE has been calculated.

⁶⁸ Great Eastern Malaysia's VNB figure excludes GETB.

⁶⁹ 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 (2019, 2020, and 2021). These figures are different from the disclosed APE for AIA and Great Eastern Malaysia in local currency terms due to exchange rate differences as APE presented in EV disclosures have been converted based on average exchange rates rather than the prevailing exchange rate applicable at the reporting date.

Similar to last year, four companies reported 2021 EV results in Malaysia.

The 10-year government bond yield in Malaysia as at 31 December 2021 was 3.59%, compared to 2.68% as at 31 December 2020. The RDR for AIA increased by 1bp over the year to 8.56% and the investment return remained unchanged from 2020 in 2021 at 8.60% for equity and 4.00% for 10-year government bond yields. Great Eastern did not disclose its investment returns for 2021 and its RDR remained unchanged year-on-year at 7.75%. HLA Malaysia did not disclose its RDR and investment return assumptions for 2021. Prudential plc increased its RDR from 4.40% (for new business) and 4.90% (for in-force business) in 2020, to 5.70% and 6.10%, respectively, in 2021. Prudential's 10-year bond yield assumption increased from 2.60% in 2020 to 3.70% in 2021, while its equity return assumption increased from 6.10% to 7.20%.

In 2021, Prudential and AIA recorded a growth of 38.0% and 37.8% respectively in APE. For AIA Malaysia, the primary driver is the growth in their Takaful business. The VNB for AIA Malaysia increased by 32.0% in 2021, this was attributed to the growth in the agency channel and its exclusive bancassurance partnership with Public Bank Berhad. AIA's new business margin declined slightly by 2.6 percentage points to 57.3% in 2021 from 59.9% in 2020.

Great Eastern demonstrated positive growth in 2021, with an annual increase in VNB and APE of 13.3% and 10.0%, respectively. Great Eastern Malaysia's operations remained resilient despite the challenges arising around COVID-19, as the company continuously improved its platforms and service touchpoints to better serve its customers. Great Eastern Malaysia leveraged on analytics to design innovative products to tap into new customer segments.

HLA recorded a growth of 19.8% in VNB for its financial year-ending June 2021. This is attributed to a positive impact from the change in product mix (with continued focus on non-participating and investment-linked business), new products launched during the year, and an increase in the long-term government bond yield. The VNB growth was also driven by digital transformation and product re-positioning plans adopted by the company, combined with a 23% increase in productivity in the agency channel.

In January 2022, Bank Negara Malaysia (BNM) published the Financial Sector Blueprint 2022–2026 (Blueprint), outlining the key strategic measures to be implemented within the financial services industry. As Malaysia emerges from the global pandemic, the Blueprint focuses on rebuilding the economy and building financial resilience amongst Malaysians. It also aims to grow the financial industry in line with evolving global trends, with a strong focus on greater financial inclusion, digitalisation, and tackling climate change. BNM plans to strengthen supervisory expectations for financial institutions surrounding climate-related risk management and consequently, it is likely that insurers and Takaful operators will be required to conduct stress tests covering climate risk. The Blueprint also focuses on increasing the take-up rate of financial services, especially in the underserved segments of the population, with a target of doubling the number of individuals subscribed to microinsurance and microtakaful by 2026.

BNM has also initiated a review of its current RBC framework, which has been conducted in phases since 2018. In June 2021, BNM issued a discussion paper on the design of the Risk-Based Capital (RBC) Framework for Insurers and Takaful Operators. The enhancements generally relate to the calibration of capital charges, the comprehensiveness of the risk components considered, and the measurement approach. BNM is also exploring possible enhancements to the CAR formula, to improve consistency across the insurance and Takaful industry, as well as to better reflect the relationships between funds, in terms of fungibility of capital. Subsequently, an exposure draft for the updated RBC is expected to be released in the second half of 2022, followed by a parallel run of the new draft framework in 2023, and subsequently the potential implementation of the new RBC framework in 2024 at the earliest (subject to the results of the parallel run).

In March 2022, BNM issued a discussion paper on the 'Broader Application of Ta'awun (mutual assistance) in Takaful,' in order to further support the growth of the Takaful sector. This discussion paper explores the utilisation of the surplus generated in a Takaful fund for donation or financial assistance to a third party, who are not existing participants, or for solvency purposes. Under existing policy requirements, there are limitations on the usage of surplus in a Takaful fund for solvency purposes and prohibition of cross-subsidisation of surplus between Takaful funds. As such BNM is exploring a wider usage and application of the Ta'awun concept to support growth. In addition, in April 2022, the regulator issued a revised 'Financial Reporting for Takaful Operators' policy document, which clarifies and sets minimum expectations on the application of the Malaysian Financial Reporting Standards (MFRS) for Islamic financial institutions.

To promote high standards of conduct and professionalism of insurance and Takaful agents, in April 2022 BNM issued an Exposure Draft on the 'Professionalism of Insurance and Takaful Agents.' This exposure draft sets out the policy requirements that licensed insurers and Takaful operators must comply with in relation to the recruitment of their agents, including the minimum qualifications, fit and proper criteria, due diligence process, and treatment of errant agents.

In addition, to encourage digital innovation in the insurance and Takaful sector, BNM issued a discussion paper outlining the proposed framework for licensing digital insurers and Takaful operators (DITOs) in January 2022. The discussion paper outlines the requirements for entry, such as criteria in assessing an application and capital requirement for DITOs. It aims to attract new digital players who can offer innovative solutions to address the protection gaps in the unserved and underserved market, while promoting financial stability and protecting consumer interests. A policy document on the prudential and business conduct requirements for DITOs are expected to be issued in the second half of 2022, so that companies can apply for such licensing from 2023 onwards.

Singapore

FIGURE 66: REPORTED EV OF SINGAPOREAN INSURANCE OPERATIONS, 2019-2021⁷⁰

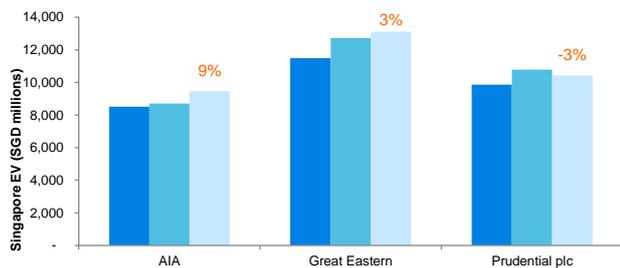


FIGURE 67: REPORTED ANW OF SINGAPOREAN INSURANCE OPERATIONS, 2019-2021⁷¹

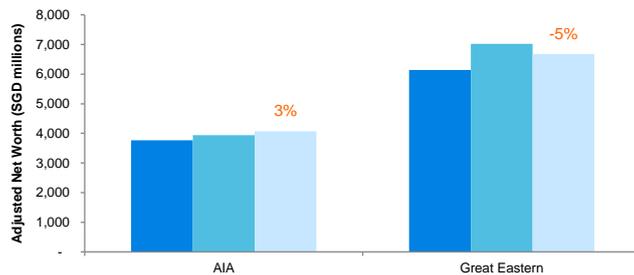


FIGURE 68: REPORTED VIF OF SINGAPOREAN INSURANCE OPERATIONS, 2019-2021

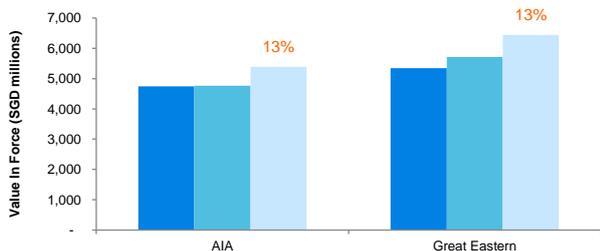


FIGURE 69: REPORTED VIF/ANW SPLIT OF SINGAPOREAN INSURANCE OPERATIONS, 2021

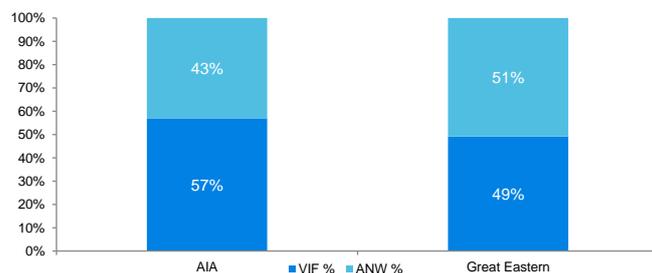


FIGURE 70: REPORTED VNB OF SINGAPOREAN INSURANCE OPERATIONS, 2019-2021

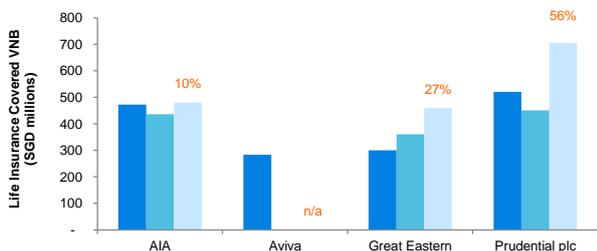


FIGURE 71: REPORTED APE⁷² OF SINGAPOREAN INSURANCE OPERATIONS, 2019-2021

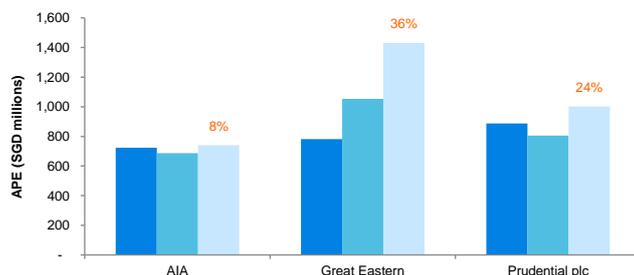
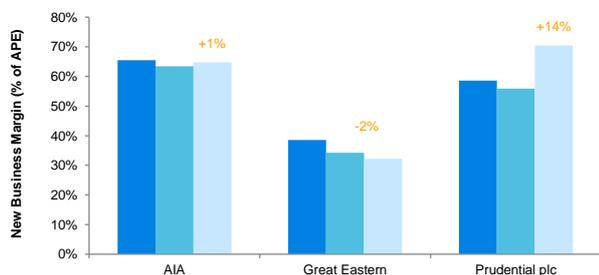


FIGURE 72: REPORTED NEW BUSINESS MARGIN OF SINGAPOREAN INSURANCE OPERATIONS, 2019-2021



■ 2019 ■ 2020 ■ 2021

1-Year Growth % 2020-2021

Percentage point change in margins 2020-2021

⁷⁰ Great Eastern Singapore's EV includes its businesses in Brunei, Hong Kong, and Indonesia.

⁷¹ Great Eastern Singapore's ANW includes its businesses in Brunei, Hong Kong, and Indonesia.

⁷² 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 (2019, 2020, and 2021). These figures are different from the disclosed APE for Prudential and AIA Singapore in local currency terms due to exchange rate differences as APE presented in EV disclosures have been converted based on average exchange rates rather than the prevailing exchange rate applicable at the reporting date.

Great Eastern, Prudential plc and AIA all disclosed separate EV results for Singapore.

The RDR for AIA Singapore decreased by 1bp to 6.59% in 2021. The RDR for Great Eastern remained unchanged from 2020 to 2021 at 6.0%. Prudential increased the RDR from 2.3% for new business and 2.9% for in-force business in 2020 to 3.4% and 3.8% in 2021, respectively. Great Eastern did not disclose its investment return assumptions for 2021 or 2020. AIA Singapore's investment return assumptions remain unchanged in 2021 with returns at 6.7% for equity and 2.2% for 10-year government bond yields. Prudential increased its equity return and 10-year government bond yield assumptions to 5.2% and 1.7% in 2021, respectively. The 10-year government bond yield in Singapore as at 31 December 2021 was 1.67%, rising from 0.84% as at 31 December 2020.

In 2021, AIA Singapore recorded a 10.1% and 7.7% rise in its VNB and APE, respectively in SGD terms,⁷³ driven largely by an increase in the number of active agents and improvements in agent productivity resulting from the enhancement of their digital tools and platform for agents. The VNB margin for AIA increased by 1.3% to 64.7%.

Great Eastern Singapore also reported a 27.4% increase in VNB in 2021, as a result of a strong performance by its financial advisor network and successful new product launches (including comprehensive health-related protection, savings, and investment-linked plans). Prudential Singapore reported an increase of 24.3% in APE in SGD terms. This increase was supported primarily by growth across the company's agency and bancassurance channels. Prudential also recorded an increase of 56.5% in VNB, attributing the increase to a favourable shift in product mix towards newly launched, higher margin investment-linked products, re-pricing of with-profits products, and an increase of high margin protection business within the health and protection product segments.

The overall increase in APE for Singapore can be attributed to the relative faster recovery from the pandemic in 2021, as Singapore opened up at a faster pace compared to the other markets.

The Monetary Authority of Singapore (MAS) issued a revised Notice on Investment Linked policies (MAS Notice 307) with minor revised requirements relating to non-mandatory standards. This revision took effect from 1 July 2021. It is also worth noting that for all investment-linked policies (ILPs) issued on or after 8 October 2021, insurers are to disclose to policyholders all upfront charges as a single charge termed 'premium charge.' Policies issued from this date are also subjected to revised guidelines on pricing of ILP sub-funds issued by the Life Insurance Association of Singapore.

All participating products were repriced in July 2021 taking account of the lowering of caps on illustrative investment returns used in policy illustrations for Singapore-dollar denominated participating policies. The upper illustration rate cap was lowered from 4.75% p.a. to 4.25% p.a., while the lower illustration rate is now capped at 3.00% p.a., down from 3.25% p.a. previously. However, this did not appear to have a material impact on new business sales with AIA, Prudential Plc, and Great Eastern all recording an increase in APE in 2021.

In February 2022, the MAS issued a circular on Non-Face-to-Face (NFTF) Customer Due Diligence Measures in view of the increasing use of NFTF measures and technologies. The circular sets out MAS-recommended practices and supervisory guidance on the measures to mitigate risks, such as money laundering, terrorism financing, and proliferation financing risks, associated with the use of NFTF technologies. The MAS also revised its notice on (Notice 314) Prevention of Money Laundering and Countering the Financing of Terrorism. The main revisions include requirements relating to customer due diligence, internal policies, and compliance. These revisions aim to strengthen insurers' risk management practices and mitigate systemic risk in the insurance sector.

⁷³ The values shown in Figure 71 for 2021 APE growth for Prudential and AIA Singapore, in SGD terms, are different from the reported disclosures. Please refer to footnote 70 for further explanation.

South Korea

FIGURE 73: REPORTED EV OF SOUTH KOREAN INSURANCE OPERATIONS, 2019-2021⁷⁴

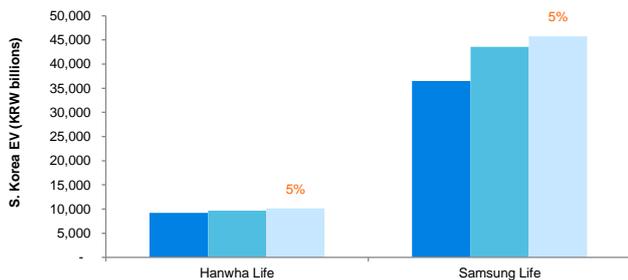


FIGURE 74: REPORTED ANW OF SOUTH KOREAN INSURANCE OPERATIONS, 2019-2021

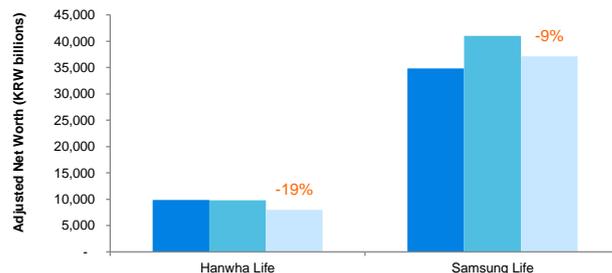


FIGURE 75: REPORTED VIF OF SOUTH KOREAN INSURANCE OPERATIONS, 2019-2021

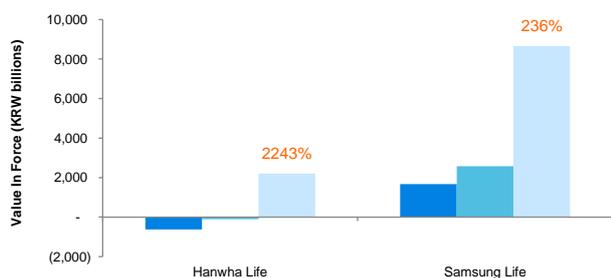


FIGURE 76: REPORTED VIF/ANW SPLIT OF SOUTH KOREAN INSURANCE OPERATIONS, 2021

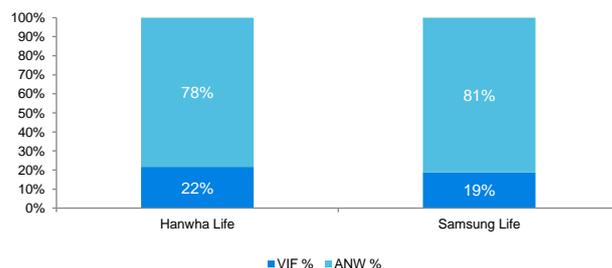


FIGURE 77: REPORTED VNB OF SOUTH KOREAN INSURANCE OPERATIONS, 2019-2021

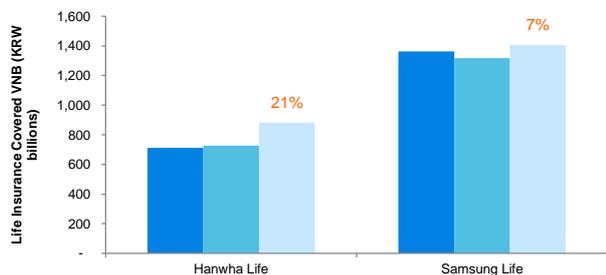


FIGURE 78: REPORTED APE OF SOUTH KOREAN INSURANCE OPERATIONS, 2019-2021

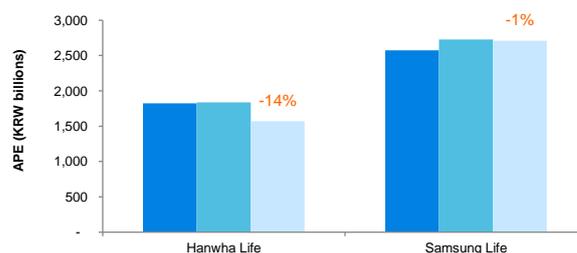
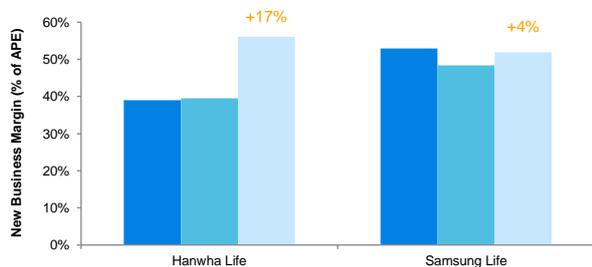


FIGURE 79: REPORTED NEW BUSINESS MARGIN OF SOUTH KOREAN INSURANCE OPERATIONS, 2019-2021



■ 2019 ■ 2020 ■ 2021
 1-Year Growth % 2020-2021
 Percentage point change in margins 2020-2021

⁷⁴ Orange Life and Samsung Fire & Marine Life have stopped disclosing their EV results. Hence, the results are not included in the analysis.

In South Korea, separate EV and VNB results are available for Hanwha Life and Samsung Life. The RDR remained unchanged for AIA South Korea and Samsung Life, while it increased for Hanwha Life from 7.50% to 8.00% in 2021. AIA South Korea's investment return assumption also remained unchanged, whereas it increased for Hanwha Life and Samsung Life from 3.00% and 3.10% in 2020, to 3.30% and 3.63%, respectively in 2021. The 10-year government bond yield in South Korea, as of 31 December 2021 was 2.25%, compared to 1.72% as at 31 December 2020.

Both Hanwha Life and Samsung Life recorded a fall in ANW and a significant rise in VIF results. Hanwha Life recorded an increase in VIF of KRW 2310 billion from negative KRW 103 billion in 2020 to a positive KRW 2207 billion in 2021. The company reported an increase of 21.3% in VNB, due to change in operating and economic assumptions.

Samsung Life recorded a 236.0% rise in VIF in 2021, attributing the increase to new business sales and increased investment return assumptions. Samsung Life's VNB increased by 6.7% in 2021, resulting from changes in the company's product mix and economic assumptions.

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

The Financial Services Commission (FSC) is working on upgrading and simplifying the process used by beneficiaries to identify and claim unclaimed insurance benefits, with the aim of easing beneficiaries' process for claiming unclaimed insurance benefits.

In response to insurance companies' declining RBC ratios, the FSC plans to provide a buffer to available capital by including liability adequacy test (LAT) surplus into the available capital. Insurers will be able to include 40% of the LAT surplus into the available capital within the limit of losses on the valuation of bonds available for sale.

Under the new regulatory regime Korean Insurance Capital Standard (K-ICS) which is expected to come into effect from January 2023, RBC ratios will be calculated by evaluating insurance companies' assets and liabilities based on market value. Hence, some companies are selling their properties to increase their RBC ratios.

Taiwan

FIGURE 80: REPORTED EV⁷⁵ OF TAIWANESE INSURANCE OPERATIONS, 2019-2021⁷⁶

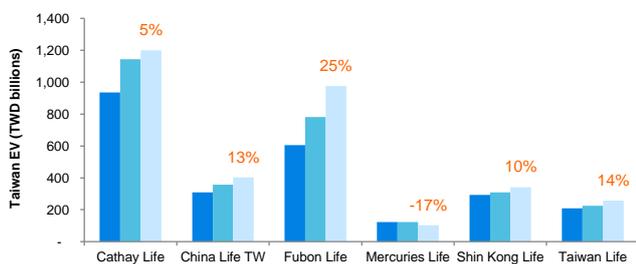


FIGURE 81: REPORTED ANW OF TAIWANESE INSURANCE OPERATIONS, 2019-2021

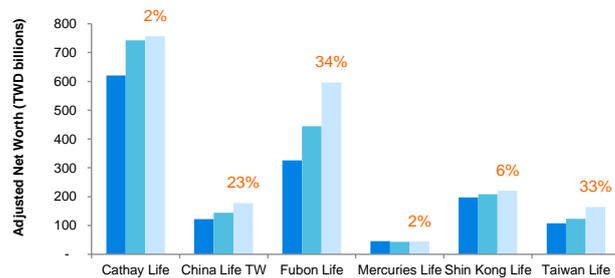


FIGURE 82: REPORTED VIF OF TAIWANESE INSURANCE OPERATIONS, 2019-2021

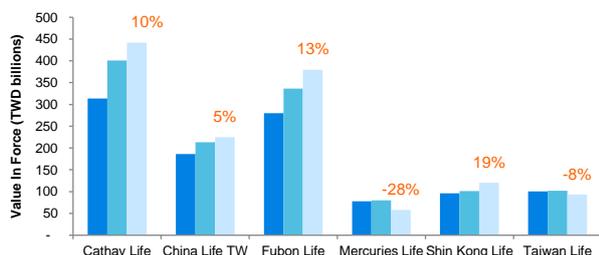


FIGURE 83: REPORTED VIF/ANW SPLIT OF TAIWANESE INSURANCE OPERATIONS, 2021

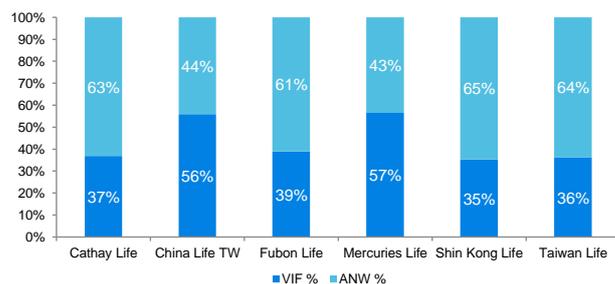


FIGURE 84: REPORTED VNB OF TAIWANESE INSURANCE OPERATIONS, 2019-2021⁷⁷

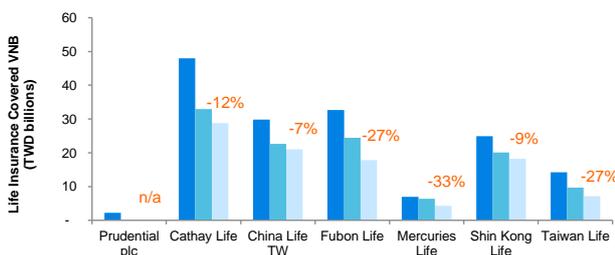


FIGURE 85: REPORTED APE⁷⁸ OF TAIWANESE INSURANCE OPERATIONS, 2019-2021

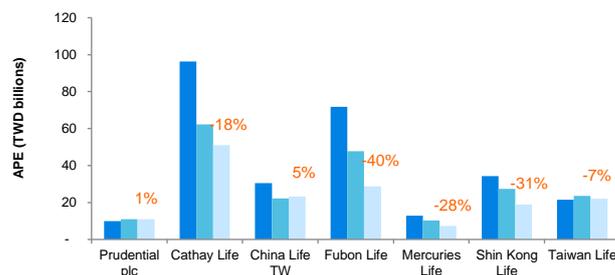
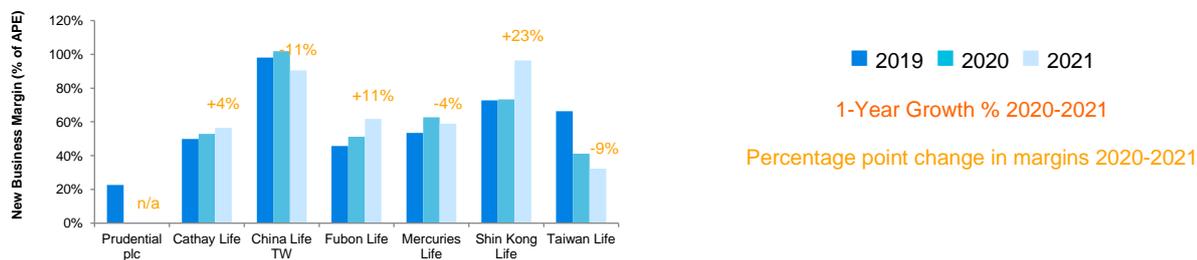


FIGURE 86: REPORTED NEW BUSINESS MARGIN OF TAIWANESE INSURANCE OPERATIONS, 2019-2021



⁷⁵ EV, VNB, and APE throughout this section have been converted to local currency using the prevailing exchange rates applicable at each reporting date (2019, 2020, and 2021).

⁷⁶ The FX rates used for conversion to local currency (for all charts) are listed in Appendix B.

⁷⁷ Prudential plc has not disclosed VNB results for Taiwan for 2020 and 2021.

⁷⁸ 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.

All reporting insurers in Taiwan posted increases in EV in 2021, except Mercuries Life which reported a fall of 17.1%. Fubon Life reported the highest increase of 25.0% in EV, followed by Taiwan Life reporting an increase of 14.3% in 2021. All insurers reported an increase in ANW, with Fubon Life, Taiwan Life, and China Life TW reporting significant increases of 34.1%, 33.1%, and 23.4%, respectively in 2021. Mercuries Life reported a significant fall in VIF of 27.6% in 2021 followed by Taiwan Life, with a fall of 8.4%. All the other insurers recorded a growth in VIF.

All the above insurers reported significant declines in VNB in 2021, with Mercuries Life posting the highest fall of 32.8%, followed by Fubon Life and Taiwan Life, with falls of 27.0% and 26.8%, respectively.

Prudential plc has increased its RDR assumption for in-force and new business from 2.50% and 3.00% in 2020, to 3.10% and 3.50% in 2021, respectively. Its 10-year government bond yield assumption was also increased by 40bps to 0.70% in 2021. The domestic life insurers in 2021 typically assumed investment returns between 3.00% and 4.40% and increase to a long-term rate of around 4.07% to 5.50%, with RDRs of around 9.50%. The 10-year government bond yield stood at 0.72% at the end of 2021, 40bps higher than the 0.30% level at the end of 2020. The full set of economic assumptions disclosed in the market is set out in Figure 103 below.

Taiwan's insurance regulator, Financial Supervisory Commission (FSC), allowed the establishment and implementation of online-only insurance companies in Taiwan by announcing a new policy in December 2021. The regulator further proposed legislative amendments to provide interested firms with a legal basis upon which to file applications.

The FSC has issued a new life table, 2021 Taiwan Standard Ordinary Experience Mortality Table (2021TSO), with the aim to reasonably reflect Taiwan's rise in national life expectancy due to improvement in public health measures and progress in medical science. The statutory reserve calculation for the new products launched on and after 1 July 2021 is required to be based on 2021TSO.

Taiwan's insurance regulator requires insurers to maintain a CAR of 200% or more. An amendment was released in 2021 for capital adequacy in the insurance industry which requires insurers to meet the earlier requirement along with maintaining a net worth ratio of more than 3% in one of the two most recent financial periods. The reason behind the amendment was to improve the risk profiles of life insurance companies as some insurers had been overbuying bond exchange-traded funds.

Additionally, FSC has approved Chubb Life's acquisition of Cigna Taiwan.

Thailand

FIGURE 87: REPORTED EV⁷⁹ OF THAILAND INSURANCE OPERATIONS, 2019-2021⁸⁰

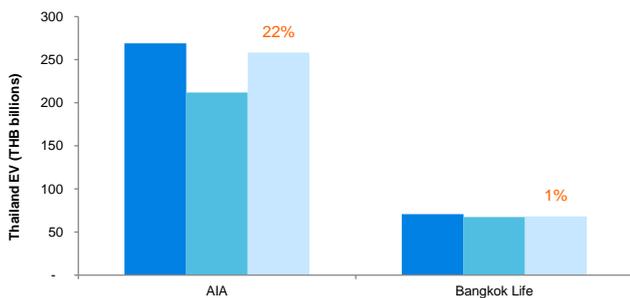


FIGURE 88: REPORTED ANW OF THAILAND INSURANCE OPERATIONS, 2019-2021

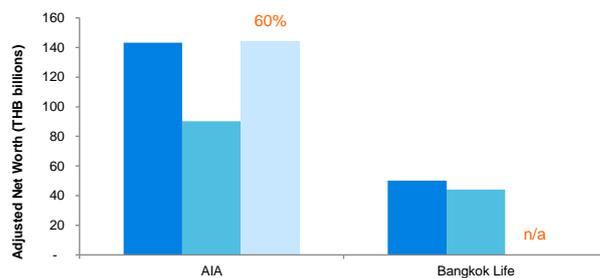


FIGURE 89: REPORTED VIF OF THAILAND INSURANCE OPERATIONS, 2019-2021

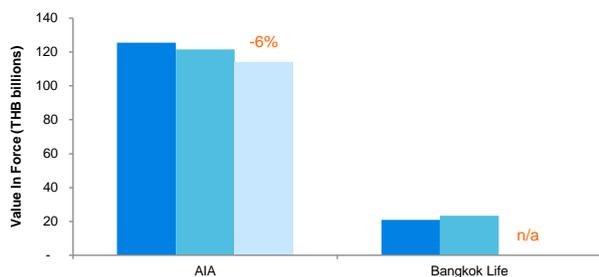


FIGURE 90: REPORTED VIF/ANW SPLIT OF THAILAND INSURANCE OPERATIONS, 2021

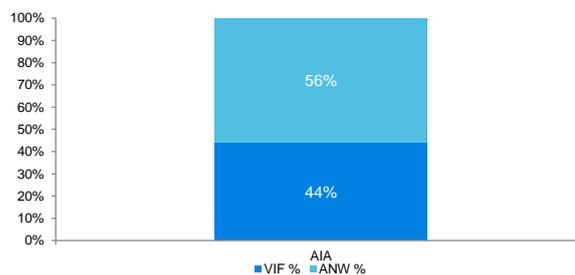


FIGURE 91: REPORTED VNB OF THAILAND INSURANCE OPERATIONS, 2019-2021

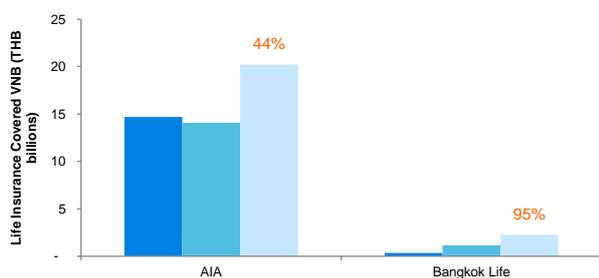


FIGURE 92: REPORTED APE OF THAILAND INSURANCE OPERATIONS, 2019-2021⁸¹

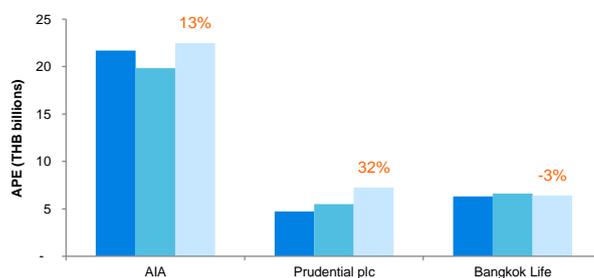
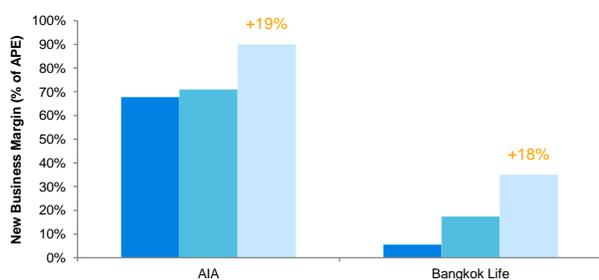


FIGURE 93: REPORTED NEW BUSINESS MARGIN OF THAILAND INSURANCE OPERATIONS, 2019-2021



■ 2019 ■ 2020 ■ 2021
 1-Year Growth % 2020-2021
 Percentage point change in margins 2020-2021

⁷⁹ EV, VNB, and APE throughout this section have been converted to local currency using the prevailing exchange rates applicable at each reporting date (2019, 2020, and 2021).

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

⁸¹ Prudential plc only discloses APE for its Thailand operations.

Medium and longer-dated Thai government bond yields increased over 2021, with the 10-year Thai government bond yields rising from 1.17% to 1.90% during the year. The directional movement in Thai government yields in the first half of 2022 has continued to be upwards, with 10-year yields rising to 2.85% at the end of April 2022, and breaching the 3.00% level on occasions since then.

FIGURE 94: HISTORICAL 10-YEAR THAILAND GOVERNMENT BOND YIELDS



Source: the Thai Bond Market Association

As in prior years, AIA and Bangkok Life disclosed separate EV and VNB results for Thailand for 2021. Prudential plc's Thailand results are disclosed as part of an aggregated classification but there is some information provided on the underlying EV economic assumptions and new business APE figures.

AIA Thailand's 2021 year-end assumptions for long-term equity returns and 10-year government bond yields remained unchanged from year-end 2020, at 7.7% and 2.7%, respectively, while the year-end RDR assumption reduced from 7.8% in 2020 to 7.69% in 2021. AIA Thailand's EV increased by 22.0% in 2021, with the sharp rise in ANW outweighing the reduction in VIF. The company recorded APE growth of 13.3% in 2021. AIA Thailand's VNB increased by 43.6% in 2021, due in part to an increased number of new agents recruited and its bancassurance partners delivering double-digit VNB growth. Overall, AIA's new business margin strengthened further, increasing from 71.0% in 2020 to 90.0% in 2021. The 19-percentage point increase was reportedly due to a proactive shift towards greater sales of higher margin regular premium unit-linked and protection products.

Bangkok Life's 2021 year-end assumption for RDR remained unchanged from 2020, at 8.3%, while there was an increase in its year-end investment return assumption from 3.0% in 2020 to 3.3% in 2021. The EV of Bangkok Life was relatively flat over 2021, increasing by 1.0% over the year. Despite a drop in new business APE of 3.0% in 2021, the company reported VNB growth of 95.5% in the year, albeit from a low starting VNB in 2020. New business margins increased from 17.4% in 2020 to 35.0% in 2021, reportedly driven by product management initiatives and other measures to increase return on investment.

Prudential plc's year-end assumptions for long-term equity returns and 10-year government bond yields for Thailand increased from 5.5% and 1.3% in 2020, to 6.3% and 2.0% in 2021, respectively. Prudential increased its year-end RDR for Thailand from 8.5% in 2020 to 9.3% in 2021. Prudential's new business APE increased by 31.8% in 2021, partly due to favourable shifts in business mix.

Industry life insurance total unweighted premium growth grew by 2.3% in 2021. The total unweighted new business sales rose by 7.9%, whereas the weighted new business sales (new business APE, taken from the Thai Life Assurance Association [TLAA] statistics) dropped by 4.3% in 2021.

The Office of Insurance Commission (OIC) is currently conducting a market testing exercise on Thailand's risk-based capital 2 (RBC 2) framework, with the objective to better align the current practice with international standards, while considering specifics of the Thai insurance industry environment. The scope of the market test is split into three parts: i) general market risk; ii) GPV discount rates; and ii) counter-cyclical capital measures. Industry testing on the general market risk was conducted in the first quarter of 2022, and industry testing for GPV discount rates and counter-cyclical capital measures is due to be conducted later in 2022.

Vietnam

FIGURE 95: REPORTED EV OF VIETNAM INSURANCE OPERATIONS, 2019-2021

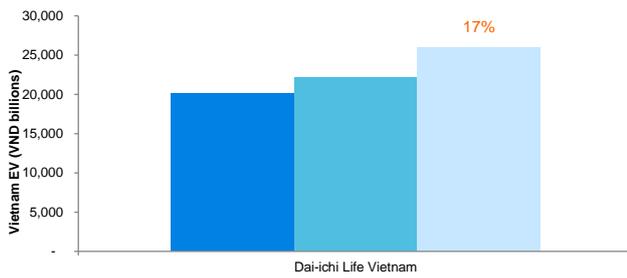


FIGURE 96: REPORTED ANW OF VIETNAM INSURANCE OPERATIONS, 2019-2021

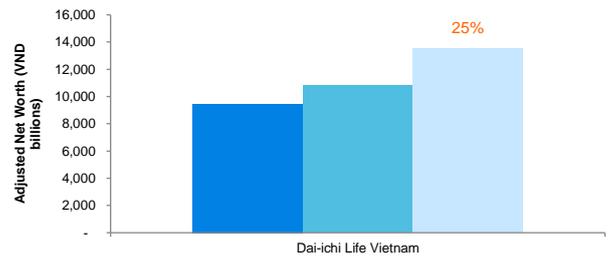


FIGURE 97: REPORTED VIF OF VIETNAM INSURANCE OPERATIONS, 2019-2021

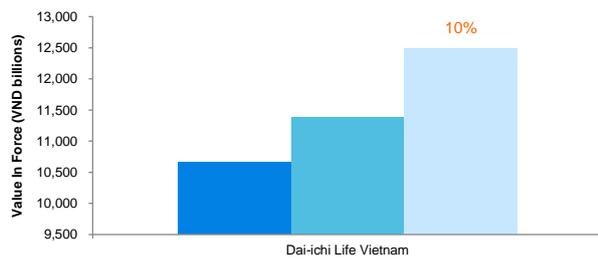


FIGURE 98: REPORTED VIF/ANW SPLIT OF VIETNAM INSURANCE OPERATIONS, 2021

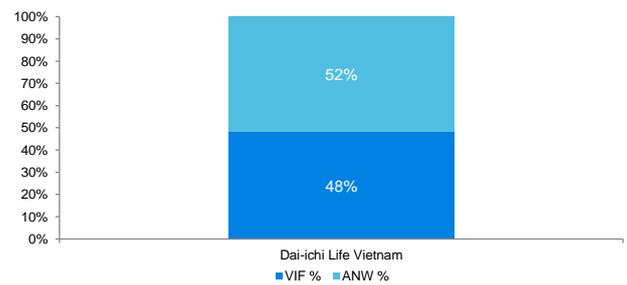


FIGURE 99: REPORTED VNB OF VIETNAM INSURANCE OPERATIONS, 2019-2021

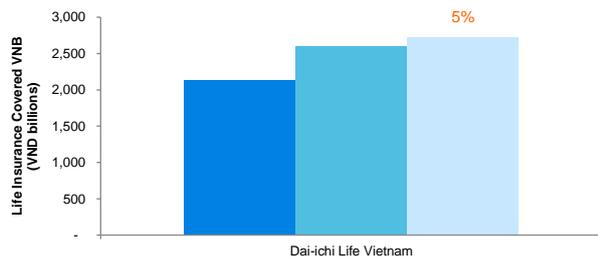


FIGURE 100: REPORTED PVNBP OF VIETNAM INSURANCE OPERATIONS, 2019-2021

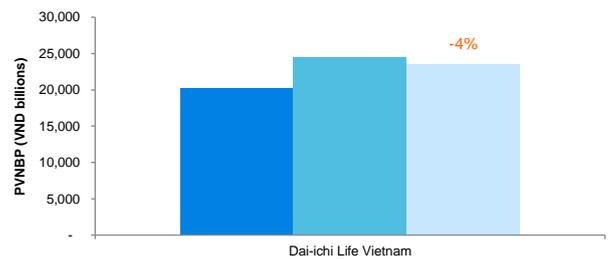
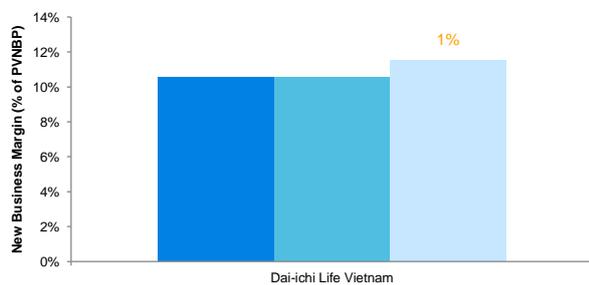


FIGURE 101: REPORTED NEW BUSINESS MARGIN⁸² OF VIETNAM INSURANCE OPERATIONS, 2019-2021



■ 2019 ■ 2020 ■ 2021

1-Year Growth % 2020-2021

Percentage point change in margins 2020-2021

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

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 17% in 2021 on a constant currency basis.⁸³

Dai-ichi Life Vietnam increased its RDR assumption from 9.0% in 2020 to 9.5% in 2021. The company does not disclose its investment return assumptions. The 2021 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 64bps and 50bps in 2021 to 9.16% and 3.5%, respectively. Prudential Vietnam reduced its RDR for in-force business and new business from 4.5% and 4.3% in 2020 to 4.1% and 4.0% in 2021, respectively. The company also decreased its long-term 10-year government bond yield assumption from 2.6% in 2020 to 2.2% in 2021.

The reduction in long-term government bond yields assumptions noted above is consistent with continued downward movements in the yield curve in Vietnam during 2021. The local 10-year government bond yield was 2.10% at 31 December 2021, as compared to 2.45% at 31 December 2020.⁸⁴

The low interest environment continues to present significant challenges for insurers in managing non-participating and participating portfolios with more material financial guarantees although the proportion of traditional business has reduced over time. 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 with corporate bonds holdings having generally increased. 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. Unit-linked business has also grown recently for some companies but it remains a small proportion of total sales in Vietnam.

In general the Vietnam life market showed robust growth in 2021, with total GWP increasing by 22.0% to VND 159.3 trillion and new business unweighted premium growing by 18.1% to VND 49.6 trillion.

⁸³ 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 2021 reporting date.

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

Methodology hot topics

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

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

- The selection and construction of the appropriate RDR
- The selection of appropriate investment rate assumptions
- Allowance for the impact of cost/expense overruns
- The question of how to explicitly or implicitly allow for the CoC
- 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 CoC 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 MNCS⁸⁵

COMPANY	EV PRINCIPLE	RDR	INVESTMENT RETURNS
AIA	TEV	China: 9.72%. Hong Kong: 6.98%. Indonesia: 12.98%. Korea: 8.10%. Malaysia: 8.56%. Philippines (Philam Life): 11.80%. Singapore: 6.59%. Sri Lanka: 14.70%. Taiwan: 7.25%. Thailand: 7.69%. Vietnam: 9.16%.	China: Equities 9.30%, 10Y Gov't Bonds 3.70%. Hong Kong: Equities 7.00%, 10Y Gov't Bonds 2.20%. Indonesia: Equities 12.00%, 10Y Gov't Bonds 7.50%. South Korea: Equities 6.50%, 10Y Gov't Bonds 2.20%. Malaysia: Equities 8.60%, 10Y Gov't Bonds 4.00%. Philippines (Philam Life): Equities 10.50%, 10Y Gov't Bonds 5.30%. Singapore: Equities 6.70%, 10Y Gov't Bonds 2.20%. Sri Lanka: Equities 11.00%, 10Y Gov't Bonds 9.00%. Taiwan: Equities 5.60%, 10Y Gov't Bonds 1.00%. Thailand: Equities 7.70%, 10Y Gov't Bonds 2.70%. Vietnam: Equities 8.80%, 10Y Gov't Bonds 3.50%.
ALLIANZ	MCEV/SII	Risk-free interest rate curves, allowing for volatility adjustment.	Risk-free interest rate curves, allowing for volatility adjustment and correlation assumptions based on historic data.
AVIVA	SII	Risk-free interest rate curves, allowing for credit risk adjustment, volatility adjustment, and matching adjustment.	Risk-free interest rate curves, allowing for credit risk adjustment, volatility adjustment, and matching adjustment.
AXA	EEV	Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment.	Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment.
GENERALI	MCEV	Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment.	Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment.
GREAT EASTERN	TEV	Singapore: 6.00%. Malaysia: 7.75%. Indonesia: 12.5%.	Not disclosed.
MANULIFE	TEV	Hong Kong: 8.50%. Japan: 5.75%.	Hong Kong: Equity 9.50% 10Y Gov't Bonds (immediate to ultimate reinvestment rate): 1.50% to 4.10%. Japan: Equity 6.00% 10Y Gov't Bonds (immediate to ultimate reinvestment rate): 0.08% to 3.36%.
PRUDENTIAL PLC	EEV	China: 7.30% (NB), 7.30% (IF). Hong Kong: 2.50% (NB), 2.80% (IF). Indonesia: 9.90% (NB), 10.50% (IF). Malaysia: 5.70% (NB), 6.10% (IF). Philippines: 12.00% (NB), 12.00% (IF). Singapore: 3.40% (NB), 3.80% (IF). Taiwan: 3.50% (NB), 3.10% (IF). Thailand: 9.30% (NB), 9.30% (IF). Vietnam: 4.00% (NB), 4.10% (IF).	China: Gov't Bonds 2.80%, Equities 6.80%. Hong Kong: Gov't Bonds 1.50%, Equities 5.00%. Indonesia: Gov't Bonds 7.00%, Equities 11.30%. Malaysia: Gov't Bonds 3.70%, Equities 7.20%. Philippines: Gov't Bonds 4.80%, Equities 9.00%. Singapore: Gov't Bonds 1.7%, Equities 5.20%. Taiwan: Gov't Bonds 0.70%, Equities 4.70%. Thailand: Gov't Bonds 2.00%, Equities 6.30%. Vietnam: Gov't Bonds 2.20%, Equities 6.40%.
ZURICH	MCEV	Risk-free interest rate curves, allowing for volatility adjustment.	Risk-free interest rate curves, allowing for volatility adjustment.

⁸⁵ Entries shaded in blue indicate that the 2021 RDR and investment assumptions have not yet been disclosed, and that the assessment has been based on 2020 disclosures instead.

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

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

FIGURE 103: RDR AND INVESTMENT ASSUMPTIONS OF INSURERS BY MARKET^{86 87}

MARKET	COMPANY	EV PRINCIPLE	RDR	INVESTMENT RETURNS
China	Chinese 10-year government bond yield at 31 December 2021: 2.783%			
	AIA	TEV	9.72%.	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 5.00%.
	China Pacific	TEV	11.00%.	Long-term business: 5.00%. Short-term business: based on the latest one-year bank deposit base rate.
	China Taiping	TEV	11.00%.	Assumed to be 4.80% with an increase of 0.05% annually up to 5.00% and thereafter remain unchanged.
	New China Life	TEV	11.00%.	Non-participating, Participating, & Universal Life: 5%. New Non-participating: 6%. Specific Participating: 5.5%. Specific Non-participating: 5.25% Unit-linked: 6%.
	PICC Life	TEV	10.00%.	5.00%.
	Ping An	TEV	11.00%.	Non-investment-linked: 4.75% in Year 1 and 5.00% thereafter. Investment-linked: slightly higher than non-investment-linked.
	Prudential plc	EEV	7.30% (NB), 7.30% (IF).	Gov't Bonds 2.80%, Equities 6.80%.
Hong Kong	Hong Kong 10-year government bond yield at 31 December 2021: 1.383%			
	AIA	TEV	6.98%.	Equities 7.00%, 10Y Gov't Bonds 2.20%.
	AXA	EEV	Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment.	Risk-free interest rate curves, allowing for credit risk adjustment and volatility adjustment.
	Manulife	TEV	8.50%.	Equity 9.50% 10Y Gov't Bonds (immediate to ultimate reinvestment rate): 1.50% to 4.10%.
	Prudential plc	EEV	2.50% (NB), 2.80% (IF).	Gov't Bonds 1.50%, Equities 5.00%.
India	Indian 10-year government bond yield at 31 March 2022: 6.843%			
	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).

⁸⁶ Entries shaded in blue indicate that the 2021 RDR and investment assumptions have not yet been disclosed, and that the assessment has been based on 2020 disclosures instead.

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

MARKET	COMPANY	EV PRINCIPLE	RDR	INVESTMENT RETURNS
India (continued)	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 extrapolated beyond 40 years using suitable methodology and adjusted to allow for liquidity premium in case of annuities.	Risk-free yield curve extrapolated beyond 40 years using suitable methodology and adjusted to allow for liquidity premium in case of annuities.
	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.
	Reliance Nippon Life	TEV	Not disclosed.	Not disclosed.
	LIC	IEV	Risk-free yield curve extrapolated by assuming that forward rates in the 41st year and beyond were equal to those in the 40th year.	Risk-free yield curve extrapolated by assuming that forward rates in the 41st year and beyond were equal to those in the 40th year.
	SBI Life	IEV	Risk-free yield curve.	Risk-free yield curve.
Indonesia	Indonesian 10-year government bond yield at 31 December 2021: 6.368%			
	AIA	TEV	12.98%.	Equities 12.00%, 10Y Gov't Bonds 7.50%.
	Great Eastern	TEV	12.50%.	Not disclosed.
	Prudential plc	EEV	NB: 9.90%, IF: 10.50%.	Equities 11.30%, 10Y Gov't Bonds 7.00%.
Japan	Japanese 10-year government bond yield at 31 March 2022: 0.214%			
	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	5.75%.	Equity 6.00% 10Y Gov't Bonds (immediate to ultimate reinvestment rate): 0.08% to 3.36%.
	Daido Life	MCEV	Risk-free rate (JPY): Based on Japanese Government Bond and Ultimate forward rates (UFRs). Risk-free rate (Foreign currencies): Based on government bond yields.	Risk-free interest rate curves.
	Dai-ichi Life	MC-EEV	Risk-free rate (JPY): Based on JGB and UFRs. Risk-free rate (Foreign currencies): Based on swap rates extrapolated by assuming that forward rates in the 31st year and beyond were equal to those in the 30th year.	Risk-free interest rate curves.
	Dai-ichi Frontier Life	MC-EEV	Risk-free rate (JPY): Based on JGB and UFRs. Risk-free rate (Foreign currencies): Based on swap rates extrapolated by assuming that forward rates in the 31st year and beyond were equal to those in the 30th year.	Risk-free interest rate curves.
	Japan Post Insurance Co Ltd	MC-EEV	Risk-free rate (based on JGB and UFRs).	Risk-free interest rate curves.
	LifeNet Insurance	MC-EEV	Risk-free rate (based on swap rates and UFRs).	Risk-free interest rate curves.
	Medicare Life	MC-EEV	Risk-free rate (Based on Japanese, U.S., and Australian Government Bond and UFRs).	Risk-free interest rate curves.

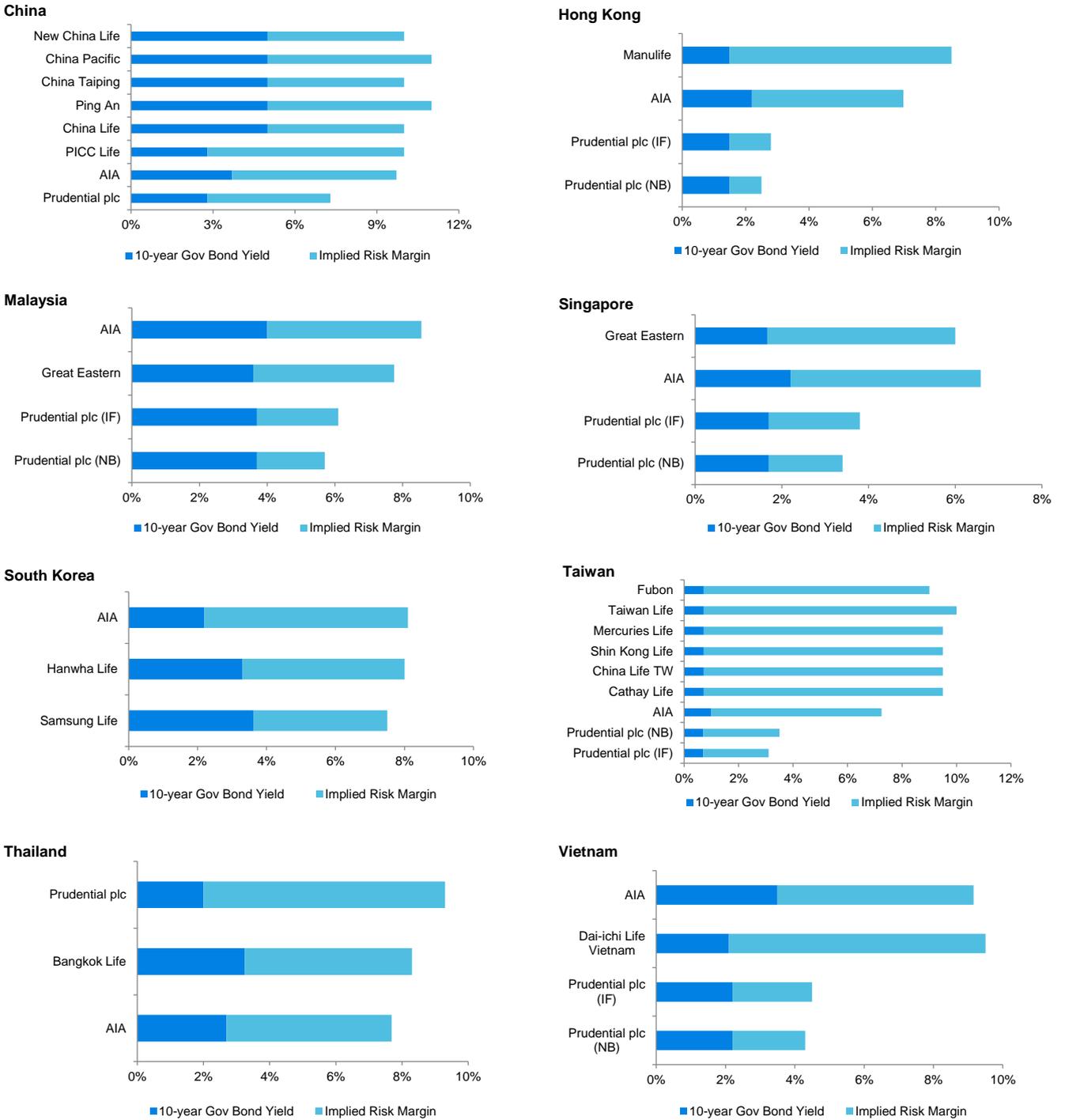
MARKET	COMPANY	EV PRINCIPLE	RDR	INVESTMENT RETURNS
Japan (continued)	Meiji Yasuda Life	MC-EEV	Not disclosed.	Not disclosed.
	MS&AD Aioi Life	MC-EEV	Risk-free rate: Based on JGB and extrapolated by assuming forward rates in the 41st year and beyond were equal to those in the 40th year.	Risk-free interest 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 Japanese Government Bond and UFRs).	Risk-free interest rate curves.
	Sony Life	MCEV	Risk-free rate (Based on Japanese, U.S., and Australian Government Bond and UFRs).	Risk-free interest rate curves.
	Sumitomo Life	MC-EEV	Risk-free rate (Based on Japanese, U.S., and Australian Government Bond and UFRs).	Risk-free interest rate curves.
	T&D Financial Life	MCEV	Risk-free rate (JPY): Based on Japanese Government Bond and UFRs. Risk-free rate (Foreign currencies): Based on government bond yields.	Risk-free interest rate curves.
	Taiyo Life	MCEV	Risk-free rate (JPY): Based on Japanese Government Bond and UFRs. Risk-free rate (Foreign currencies): Based on government bond yields.	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.
Malaysia	Malaysian 10-year government bond yield at 31 December 2021: 3.589%			
	AIA	TEV	8.56%.	Equities 8.60%, 10Y Gov't Bonds 4.00%.
	Great Eastern	TEV	7.75%.	Not disclosed.
	Hong Leong Assurance	TEV	Not disclosed.	Not disclosed.
	Prudential plc	EEV	5.70% (NB), 6.10% (IF).	Equities 7.20%, Gov't Bonds 3.70%.
Philippines	Philippines 10-year government bond yield at 31 December 2021: 4.724%			
	AIA	TEV	11.80%.	Equities 10.50%, 10Y Gov't Bonds 5.30%
	Prudential plc	EEV	12.00% (NB), 12.00% (IF).	Gov't Bonds 4.80%, Equities 9.00%.

MARKET	COMPANY	EV PRINCIPLE	RDR	INVESTMENT RETURNS
Singapore	Singaporean 10-year government bond yield at 31 December 2021: 1.667%			
	AIA	TEV	6.59%.	Equities 6.70%, 10Y Gov't Bonds 2.20%.
	Aviva	SII	Risk-free interest rate curves, allowing for credit risk adjustment, volatility adjustment, and matching adjustment.	Risk-free interest rate curves, allowing for credit risk adjustment, volatility adjustment, and matching adjustment.
	Great Eastern	TEV	6.00%.	Not disclosed.
	Prudential plc	EEV	3.40% (NB), 3.80% (IF).	Equities: 5.20%, Gov't Bonds 1.70%.
South Korea	South Korean 10-year government bond yield at 31 December 2021: 2.255%			
	AIA	TEV	8.10%.	Equities 6.50%, 10Y Gov't Bonds 2.20%.
	Hanwha Life	TEV	8.00%.	3.30%.
	Samsung Life	TEV	7.50%.	3.63%.
Taiwan	Taiwanese 10-year government bond yield at 31 December 2021: 0.715%			
	AIA	TEV	7.25%.	10Y Gov't Bonds Current 0.73%, Long-term 1.00%; Equities 5.60%.
	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: 2.59% ~ 4.55% (2041+). USD Products: 3.98% ~ 5.25% (2041+). VIF TWD Products: 3.75% ~ 4.71% (2041+). USD Products: 4.36% ~ 5.33% (2041+).
	China Life TW	TEV	9.50%.	TWD Policies: Year 1 ~ Year 19: 3.58% ~ 4.79%. Year 20+: 4.79%. Non-TWD Policies: Year 1 ~ Year 19: 4.32% ~ 5.20%. Year 20+: 5.20%.
	Fubon	TEV	VNB: 9.0%. VIF: 9.0%.	VIF NTD Traditional Policies: Year 2022 to Year 2048 at 3.82%~4.88% (2049+). USD Policies: Year 2022 to Year 2039 at 3.91%~5.32% (2040+). VNB NTD Traditional Policies: Year 2021 to Year 2042 at 3.57%~4.84% (2043+). USD Policies: Year 2021 to Year 2042 at 3.95%~5.30% (2043+).
	Mercuries Life	TEV	9.50%.	VNB TWD Products: 3.00% ~ 5.00% (2051+). USD Products: 3.55% ~ 5.50% (2034+). VIF TWD Products: 3.20% ~ 4.95% (2051+). USD Products: 3.70% ~ 5.50% (2047+).
	Prudential plc	EEV	3.50% (NB), 3.10% (IF).	Gov't Bonds 0.70%, Equities 4.70%.
	Shin Kong	TEV	9.50%.	VNB TWD Products: 2.82% ~ 4.73%. USD Products: 3.97% ~ 5.07%. VIF TWD Products: 3.00% ~ 4.77%. USD Products: 3.79% ~ 5.22%.

MARKET	COMPANY	EV PRINCIPLE	RDR	INVESTMENT RETURNS
Taiwan (continued)	Taiwan Life	TEV	10.00%.	TWD Policies: Year 2022 to Year 2040 at 3.64% ~ 4.07% (2041+). USD Policies: Year 2022 to Year 2040 at 4.1% ~ 5.14% (2041+).
Thailand	Thai 10-year government bond yield at 31 December 2021: 1.950%			
	AIA	TEV	7.69%.	Equities 7.70%, 10Y Gov't Bonds 2.70%.
	Bangkok Life	TEV	8.30%.	3.25%.
	Prudential plc	EEV	9.30% (NB), 9.30% (IF).	Gov't Bonds 2.00%, Equities 6.30%.
Vietnam	Vietnamese 10-year government bond yield at 31 December 2021: 2.100%			
	AIA	TEV	9.16%.	Equities 8.80%, 10Y Gov't Bonds 3.50%.
	Dai-ichi Life Vietnam	TEV	9.50%.	Not disclosed.
	Prudential plc	EEV	4.00% (NB), 4.10% (IF).	Gov't Bonds 2.20%, Equities 6.40%.

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

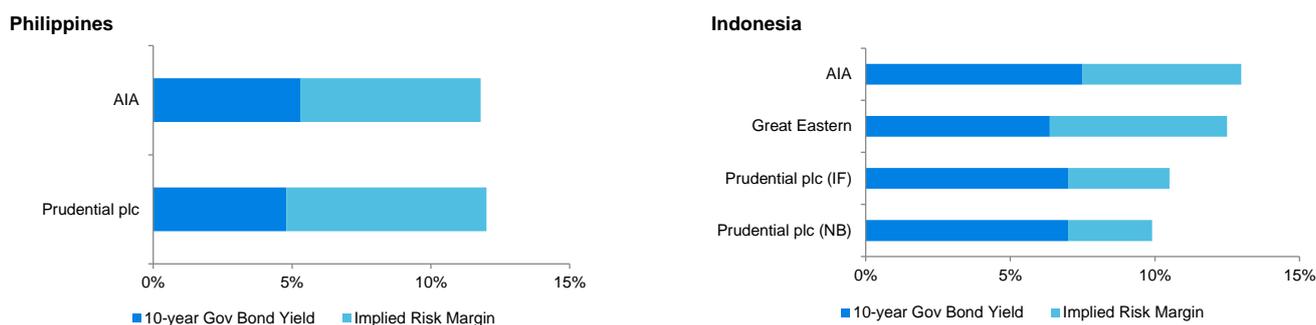
FIGURE 104: ILLUSTRATIVE SPLIT OF ASSUMED RDR INTO 10-YEAR GOVERNMENT BOND YIELDS AND IMPLIED RISK MARGINS^{88,89} BY COMPANY⁹⁰ FOR EACH MARKET



⁸⁸ 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 2021 reporting date.

⁸⁹ The 10-year government bond yields have been extracted from <http://www.investing.com> for those companies that have not published the 10-yr government yield.

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

FIGURE 104: ILLUSTRATIVE SPLIT OF ASSUMED RDR INTO 10-YEAR GOVERNMENT BOND YIELDS AND IMPLIED RISK MARGINS (CONTINUED)

INVESTMENT RETURN ASSUMPTIONS

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

Insurers reporting under TEV and EEV tend to specify investment returns at the asset class level. However, some insurers choose to disclose (and potentially use) investment assumptions at a fund or company⁹¹ level instead.

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

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

In this year, with tightened monetary policies leading to higher inflation and interest rates, most Asian life insurers have increased their investment return assumptions to allow for the rising yields. AIA has left their economic assumptions unchanged. Whereas, due to lower interest rates in markets such as China and Vietnam, the insurers in these markets have reduced their investment return assumptions this year.

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-override,' where the EV figures will be calculated based on long-term target expense levels, and as 'post-override,' 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.

⁹¹ For example, Hanwha Life (South Korea) cites an investment assumption of 3.30% for its entire business instead of specifying the exact asset class assumptions.

COST OF CAPITAL

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

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

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

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

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

The majority of companies reporting MCEV calculate the CoC using the frictional cost approach, which is the approach required under MCEV principles. However, the definition of required capital differs among companies. As at year-end 2021, almost all companies disclosed that they set their required capital by reference to domestic regulatory requirements, with a few MNCs such as Aviva and Prudential plc also taking into consideration the results from their internal models.

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

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

FIGURE 105: SUMMARY OF SOLVENCY MARGIN REQUIREMENTS BY COMPANY⁹²

CATEGORY	COMPANY	EV METHODOLOGY	REQUIRED CAPITAL
MNC	AIA	TEV	China: 100% of required capital as specified under the CAA EV assessment guidance. Hong Kong: 150% minimum SM. Indonesia: 120% RBC. Malaysia: 170% RBC. Philippines: 100% RBC. Singapore: Higher of 135% of capital adequacy requirement and 80% of Tier 1 capital requirement under RBC. South Korea: 150% RBC. Sri Lanka: 120% RBC. Taiwan: 250% RBC. Thailand: 140% RBC. ⁹³ Vietnam: 100% minimum SM.
MNC	Allianz	MCEV/SII	Solvency capital requirement (SCR as per SII).
MNC	Aviva	SII	Solvency capital requirement (SCR as per SII).
MNC	AXA	SII	150% for entities outside European Economic Area (EEA) with limitations on soft capital to half of the target solvency capital.

⁹² Blue shaded entries indicate that the 2021 required solvency capital information has not yet been disclosed, and that the assessment has been based on 2020 disclosures instead.

⁹³ The required capital ratio assumed in the EV calculation is 120% up to year-end 2021, and 140% thereafter, in line with the regulatory requirement under Thailand RBC 2.

CATEGORY	COMPANY	EV METHODOLOGY	REQUIRED CAPITAL
MNC	Generali	MCEV	For non-EEA: maximum of 100% of the local regulatory required capital and the Solvency II capital based on Standard Formula, net of the relevant free coverage.
MNC	Great Eastern	TEV	Requirements are based on the RBC framework as set out in local regulations for Singapore and Malaysia.
MNC	Manulife	TEV	China: 100% of the required capital as specified under the C-ROSS II solvency rules prescribed by the CBIRC. Indonesia: 120% RBC. Malaysia: 160% CAR. Philippines: 125% RBC. Singapore: 120% CAR. Vietnam: 100% minimum SM.
MNC	Prudential plc	EEV	Amount at least equal to local statutory notification requirements.
MNC	Zurich	MCEV	At least at the level equal to the regulatory required capital and in addition, an adequate buffer to cover short-term volatilities in solvency due to financial and non-financial risks or to achieve the capital required to maintain the desired credit rating.
CHINA	China Life	TEV	Calculated as specified under the CAA EV assessment guidance.
CHINA	China Pacific	TEV	Calculated as specified under the CAA EV assessment guidance.
CHINA	China Taiping	TEV	100% of the required capital as specified under the C-ROSS II solvency rules prescribed by the CBIRC.
CHINA	New China Life	TEV	100% of the required capital as specified under the C-ROSS II solvency rules 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	150% of RSM.
INDIA	HDFC Life	IEV	170% of RSM less the funds for future appropriations (FFA) in the participating funds.
INDIA	ICICI Prudential Life	IEV	Not disclosed.
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	LIC	IEV	150% (160% from 1 April 2021) of RSM less the FFA in respect of ULIP business and less the provisions for solvency margin requirements within the policy liabilities/insurance reserves/current liabilities.
INDIA	SBI Life	IEV	180% of RSM.
JAPAN	Daido Life	MCEV	Higher of Japanese regulatory minimum capital requirement (200% SM Ratio) and 133% of economic capital.
JAPAN	Dai-ichi Life	MC-EEV	Capital required to maintain 400% SM Ratio.
JAPAN	Dai-ichi Frontier Life	MC-EEV	Capital required to maintain 400% SM Ratio.
JAPAN	Japan Post Insurance Co Ltd	MC-EEV	Capital required to maintain 600% SM Ratio.
JAPAN	LifeNet Insurance	MC-EEV	Capital required to maintain 500% Japanese Statutory Solvency Margin Ratio.
JAPAN	Medicare Life	MC-EEV	Not disclosed.
JAPAN	MS&AD Aioi Life	MC-EEV	Capital required to maintain 600% Target SM Ratio.
JAPAN	MS&AD Primary Life	MC-EEV	Capital required to maintain 600% Target SM Ratio.
JAPAN	Neo First Life	MC-EEV	Capital required to maintain 400% SM Ratio.
JAPAN	Sompo Himawari Life	MCEV	Capital required to maintain 600% statutory SM ratio.
JAPAN	Sony Life	MCEV	Higher of Japanese regulatory minimum capital requirement (200% SM Ratio) or internal target.

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

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

- In Singapore, where AIA uses 135% while Manulife uses 120% (Great Eastern did not disclose the minimum regulatory level for 2021)
- In Malaysia, where AIA uses 170% and Manulife uses 160% (Great Eastern did not disclose the minimum regulatory level for 2021)
- In Taiwan, where AIA uses 250% compared with the 200% used by all domestic insurers
- In India, where SBI Life uses 180% compared to 170% used by some other insurers

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

TIME VALUE OF OPTIONS AND GUARANTEES

The impact of financial options and guarantees can be split into two components. The first is the effect on the PVFP with respect to the intrinsic value⁹⁴ 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.

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.

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 5,000 economic scenarios on a market-consistent basis.

FIGURE 106: SUMMARY OF TVOG APPROACHES⁹⁵

COMPANY TYPE	COMPANY	OPTIONS AND GUARANTEES	SCENARIOS	USE OF DYNAMIC POLICYHOLDER BEHAVIOUR	CALCULATED TVOG (ASIA VALUE)
MNC	Allianz	Market-consistent, stochastic	1,000 (5,000 in Germany)	Yes	Not disclosed
MNC	Aviva	Market-consistent, stochastic	Not disclosed	Not disclosed	Not disclosed
MNC	AXA	Market-consistent, stochastic	At least 1,000	Yes	Yes (EUR 77 million for VNB)
MNC	Generali	Market-consistent, stochastic	1,000	Yes	Not disclosed
MNC	Prudential plc	Stochastic	Not disclosed	Yes	Not disclosed
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	Not disclosed
India	HDFC Life	Not disclosed	Not disclosed	Not disclosed	Not disclosed
India	SBI Life	Not disclosed	Not disclosed	Not disclosed	Not disclosed
India	Kotak Life	Not disclosed	Not disclosed	Not disclosed	Not disclosed
India	Max Life	Stochastic	5,000	Not disclosed	Not disclosed
Japan	Daido Life	Stochastic	5,000	Yes	Yes (JPY 71 billion)
Japan	Dai-ichi Life	Stochastic	5,000	Yes	Yes (JPY 96.7 billion)
Japan	Dai-ichi Frontier Life	Stochastic	5,000	Yes	Yes (JPY 13.3 billion)
Japan	Japan Post Insurance Co Ltd	Stochastic	5,000	Yes	Yes (JPY 217.4 billion)
Japan	Neo First Life	Not disclosed	Not disclosed	Not disclosed	Not disclosed
Japan	LifeNet Insurance	TVOG is zero	Not used	No	Set as NIL
Japan	Medicare Life	Stochastic	5,000	Yes	Yes (JPY 2.2 billion)
Japan	MS&AD Aioi Life	Stochastic	5,000	Yes	Yes (JPY 87.0 billion)
Japan	MS&AD Primary Life	Stochastic	5,000	Yes	Yes (JPY 25.9 billion)
Japan	Sompo Himawari Life	Stochastic	1,000	Yes	Yes (JPY 16.2 billion)
Japan	Sony Life	Stochastic	1,000	Yes	Yes (JPY 125 billion)
Japan	Sumitomo Life	Stochastic	5,000	Yes	Yes (JPY 121.7 billion)
Japan	Tokio Marine & Nichido Life	Stochastic	1,000	Yes	Yes (JPY 97.8 billion)

⁹⁵ Blue shaded entries indicate that the 2021 required TVOG Approaches information has not yet been disclosed, and that the assessment has been based on 2020 disclosures instead.

COMPANY TYPE	COMPANY	OPTIONS AND GUARANTEES	SCENARIOS	USE OF DYNAMIC POLICYHOLDER BEHAVIOUR	CALCULATED TVOG (ASIA VALUE)
Japan	T&D Financial Life	Stochastic	5,000	Yes	Yes (JPY 2.2 billion)
Japan	Taiyo Life	Stochastic	5,000	Yes	Yes (JPY 33.7 billion)
South Korea	Hanwha Life	Stochastic cost of GMxB guarantees included in PVFP	1,000	Not disclosed	Not disclosed
South Korea	Samsung Life	Stochastic cost of GMxB guarantees included in PVFP	1,000	Not disclosed	Yes (KRW 92 billion)

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

Aviva and Allianz continue to disclose limited EV information and no longer report their Asia EV and TVOG figures, although AXA still provided the TVOG on its 2021 Asia VNB.

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, 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 2021⁹⁶

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

⁹⁶ Blue shaded entries indicate that the 2021 EV results have not yet been disclosed, and that the assessment has been based on 2020 disclosures instead.

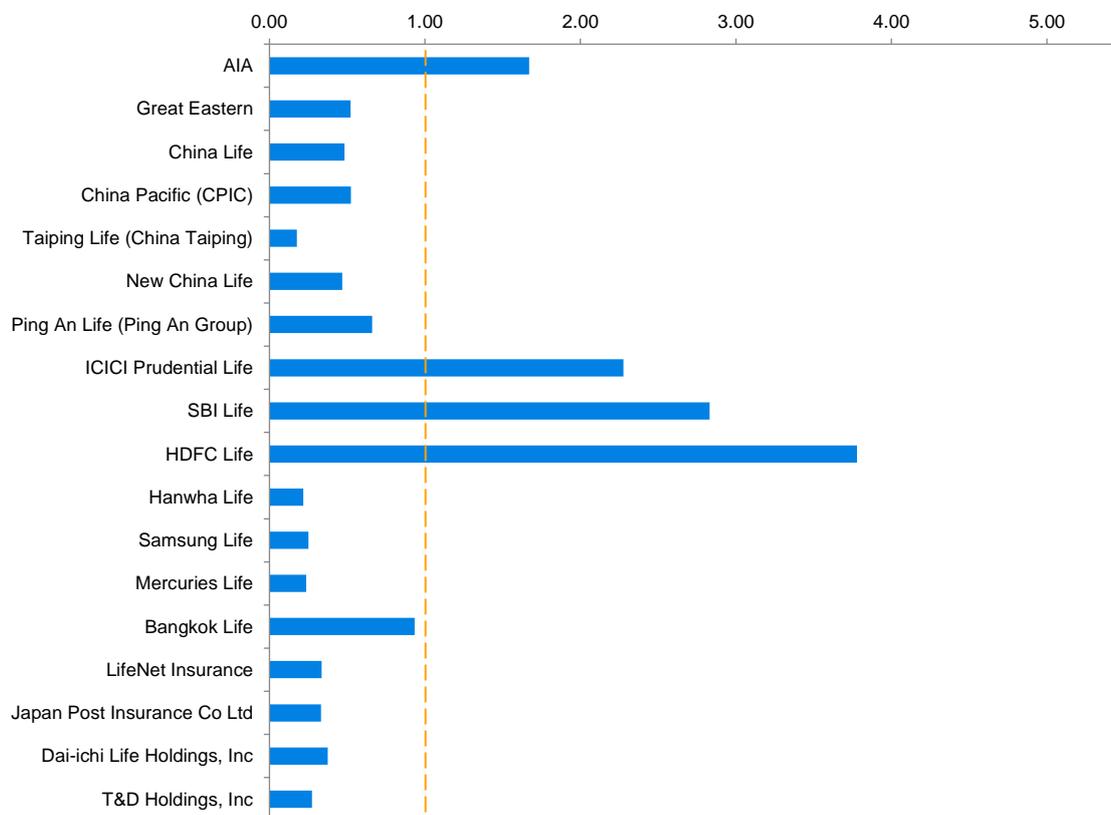
TYPE	COMPANY	EV PRINCIPLE	EVIDENCE OF INDEPENDENT REVIEW OF EV RESULTS	ANALYSIS OF EV MOVEMENT	RECONCILIATION OF ANW TO IFRS NET ASSETS	COST OF CAPITAL/ REQUIRED CAPITAL	RDR ASSUMPTIONS	INVESTMENT RETURN ASSUMPTIONS	EXPENSE INFLATION ASSUMPTIONS	NEW BUSINESS MARGIN INFORMATION	EV AND VNB SENSITIVITIES
JAPAN (CONTINUED)	Taiyo Life	MCEV	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Tokio Marine & Nichido Life	MCEV	✓	✓	✓	✓	✓	✓	✓	✓	✓
SOUTH KOREA	Hanwha Life	TEV		✓	✓	✓	✓	✓	✓	✓	✓
	Samsung Life	TEV		✓	✓	✓	✓	✓	✓	✓	✓
TAIWAN	Cathay Life	TEV	✓	✓	✓	✓	✓	✓	✓	✓	✓
	China Life TW	TEV	✓	✓	✓	✓	✓				✓
	Fubon	TEV	✓	✓	✓	✓	✓			✓	✓
	Mercuries Life	TEV	✓	✓	✓	✓	✓				✓
	Shin Kong	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 2021 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 ROEV 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 2020 and 2021.

FIGURE 109: ROEV FOR 2020 AND 2021

COMPANY TYPE	COMPANY	EV METHODOLOGY	ROEV (2020)	ROEV (2021)
MNC	AIA	TEV	11.70%	12.10%
	Prudential plc	EEV	10.00%	30.00%
	T&D Holdings, Inc.	MCEV	Not disclosed	Not disclosed
China	Ping An	TEV	14.50%	11.10%
India	Bajaj Allianz Life	MCEV	9.40%	11.90%
	Aditya Birla Sun Life	MCEV	13.70%	15.40%
	HDFC Life	IEV	18.50%	19.00%
	ICICI Prudential Life	IEV	15.20%	11.00%
	Max Life	MCEV	18.50%	19.20%
	LIC	IEV	N/A	36.89%
	SBI Life	IEV	19.10%	20.60%
Japan	Japan Post Insurance Co Ltd	MC-EEV	5.00%	Not disclosed
South Korea	Hanwha Life	TEV	5.30%	4.90%
	Samsung Life	TEV	9.30%	Not disclosed

IFRS 17

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

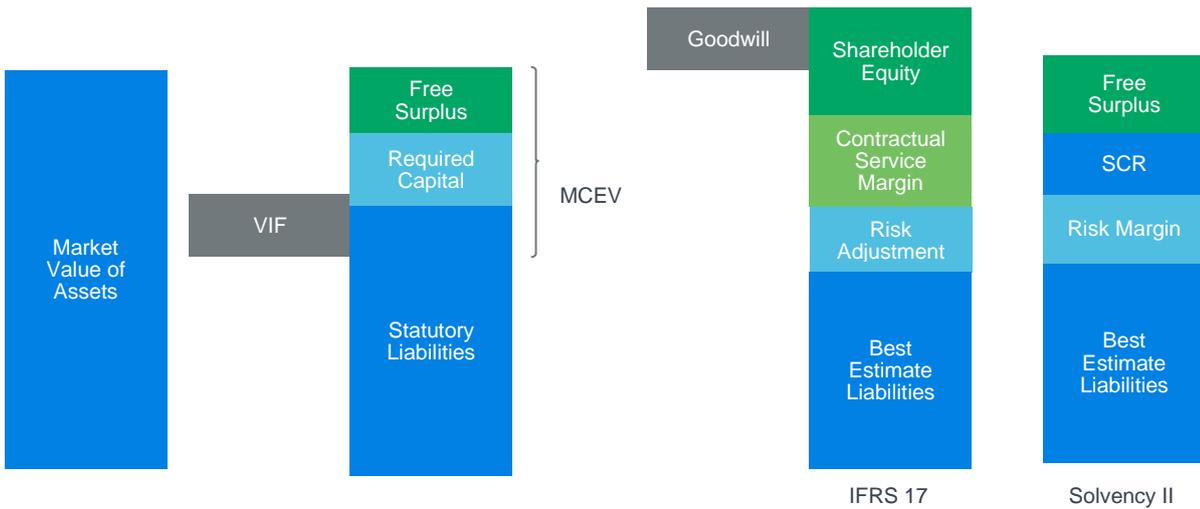
On 18 May 2017, the IASB published its new standard on accounting for insurance contracts: IFRS 17. The standard will apply for accounting periods starting on or after 1 January 2023, but prior year comparative figures will be required. The standard is directed at insurance contracts, rather than insurance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

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

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

In August 2018, the Financial Accounting Standards Board (FASB) issued ASU 2018-12, 'Targeted Improvements to the Accounting for Long-Duration Contracts,' with the objective of making targeted improvements to the existing recognition, measurement, presentation, and disclosure requirements for long-duration contracts issued by an insurance entity. The major updates include improving timeliness of recognising changes in the liability for future policy benefits, modifying the rate used to discount future cash flows, simplifying and improving the accounting for certain market-based options (MRBs), simplifying the amortisation of deferred acquisition costs, and improving the effectiveness of the required disclosures. In July 2022, FASB issued an exposure draft with amendments to accounting for long-duration insurance contracts, particularly related to exclusion of certain contracts or legal entities from applying the ASU 2018-12 Long-Duration Targeted Improvement transition guidance. The proposed IFRS 17 is compared with MCEV and Solvency II in Figure 110.

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



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

An improvement in overall EV results over 2021, reflecting for many firms' strong growth of new business and largely favourable economic effects, continued to indicate a relatively stable and optimistic market. However, with a largely unsettled global political landscape, the market environment continues to present challenges for insurers.

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

Appendix A: Total Asian EV by company by territory

FIGURE 111: TOTAL ASIAN EV BY COMPANY (USD MILLIONS^{97 98})

TYPE	COMPANY	EV PRINCIPLE	CHINA	HONG KONG	INDIA	JAPAN	KOREA	MALAYSIA	SINGAPORE	TAIWAN	THAILAND	INDONESIA	PHILIPPINES	VIETNAM	UNALLOCATED	TOTAL
MNC	AIA	TEV	13,237	27,048	-	-	-	3,274	7,014	-	7,785	-	-	-	14,629	72,987
	Allianz	MCEV / SII	-	-	-	-	-	-	-	-	-	-	-	-	5,263	5,263
	Aviva	SII	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	AXA	EEV	-	-	-	-	-	-	-	-	-	-	-	-	18,430	18,430
	Great Eastern	TEV	-	-	-	-	-	3,814	9,723	-	-	-	-	-	-	13,537
	Manulife	TEV	-	-	-	-	-	-	-	-	-	-	-	-	23,333	23,333
	Prudential plc	EEV	3,114	21,460	-	-	-	3,841	7,732	-	-	2,237	-	-	6,262	44,646
CHINA	China Life	TEV	189,298	-	-	-	-	-	-	-	-	-	-	-	-	189,298
	China Pacific	TEV	59,266	-	-	-	-	-	-	-	-	-	-	-	-	59,266
	China Taiping	TEV	30,793	-	-	-	-	-	-	-	-	-	-	-	-	30,793
	New China Life	TEV	40,727	-	-	-	-	-	-	-	-	-	-	-	-	40,727
	PICC Life	TEV	17,534	-	-	-	-	-	-	-	-	-	-	-	-	17,534
	Ping An	TEV	137,919	-	-	-	-	-	-	-	-	-	-	-	-	137,919
INDIA	Bajaj Allianz Life	MCEV	-	-	2,273	-	-	-	-	-	-	-	-	-	-	2,273
	Aditya Birla Sun Life	MCEV	-	-	1,002	-	-	-	-	-	-	-	-	-	-	1,002
	Exide Life	MCEV	-	-	383	-	-	-	-	-	-	-	-	-	-	383
	HDFC Life	IEV	-	-	3,959	-	-	-	-	-	-	-	-	-	-	3,959
	ICICI Prudential Life	IEV	-	-	4,167	-	-	-	-	-	-	-	-	-	-	4,167
	Kotak Life	IEV	-	-	1,407	-	-	-	-	-	-	-	-	-	-	1,407
	Max Life	MCEV	-	-	1,867	-	-	-	-	-	-	-	-	-	-	1,867
	PNB MetLife	IEV	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Reliance Nippon Life	TEV	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	LIC	IEV	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SBI Life	IEV	-	-	5,221	-	-	-	-	-	-	-	-	-	-	5,221	
JAPAN	Daido Life	MCEV	-	-	-	17,696	-	-	-	-	-	-	-	-	-	17,696
	Dai-ichi Life	MC-EEV	-	-	-	40,996	-	-	-	-	-	-	-	-	-	40,996
	Dai-ichi Frontier Life	MC-EEV	-	-	-	4,823	-	-	-	-	-	-	-	-	-	4,823
	Japan Post Insurance Co Ltd	MC-EEV	-	-	-	29,812	-	-	-	-	-	-	-	-	-	29,812
	LifeNet Insurance	MC-EEV	-	-	-	961	-	-	-	-	-	-	-	-	-	961
	Medicare Life	MC-EEV	-	-	-	2,184	-	-	-	-	-	-	-	-	-	2,184
	MS&AD Aioi Life	MC-EEV	-	-	-	7,608	-	-	-	-	-	-	-	-	-	7,608
	MS&AD Primary Life	MC-EEV	-	-	-	5,288	-	-	-	-	-	-	-	-	-	5,288
	Neo First Life	MC-EEV	-	-	-	1,568	-	-	-	-	-	-	-	-	-	1,568
	Sompo Life	MCEV	-	-	-	8,313	-	-	-	-	-	-	-	-	-	8,313
Sony Life	MCEV	-	-	-	17,019	-	-	-	-	-	-	-	-	-	17,019	

⁹⁷ EV results have been converted at the prevailing USD exchange rate as at the reporting date.⁹⁸ Blue-shaded entries indicate that the 2021 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
JAPAN (CONTINUED)	Sumitomo Life	MC-EEV	-	-	-	39,073	-	-	-	-	-	-	-	-	-	39,073
	T&D Financial Life	MCEV	-	-	-	917	-	-	-	-	-	-	-	-	-	917
	Taiyo Life	MCEV	-	-	-	9,346	-	-	-	-	-	-	-	-	-	9,346
	Tokio Marine & Nichido Life	MCEV	-	-	-	9,968	-	-	-	-	-	-	-	-	-	9,968
SOUTH KOREA	Hanwha Life	TEV	-	-	-	-	8,545	-	-	-	-	-	-	-	-	8,545
	Samsung Life	TEV	-	-	-	-	38,448	-	-	-	-	-	-	-	-	38,448
MALAYSIA	Hong Leong Assurance	TEV	-	-	-	-	-	691	-	-	-	-	-	-	-	691
TAIWAN	Cathay Life	TEV	-	-	-	-	-	-	-	43,262	-	-	-	-	-	43,262
	China Life TW	TEV	-	-	-	-	-	-	-	14,523	-	-	-	-	-	14,523
	Fubon	TEV	-	-	-	-	-	-	-	35,233	-	-	-	-	-	35,233
	Mercuries Life	TEV	-	-	-	-	-	-	-	3,684	-	-	-	-	-	3,684
	Shin Kong	TEV	-	-	-	-	-	-	-	12,311	-	-	-	-	-	12,311
	Taiwan Life	TEV	-	-	-	-	-	-	-	9,298	-	-	-	-	-	9,298
THAILAND	Bangkok Life	TEV	-	-	-	-	-	-	-	-	2,053	-	-	-	-	2,053
VIETNAM	Dai-ichi Life Vietnam	TEV	-	-	-	-	-	-	-	-	-	-	-	1,138	-	1,138

Appendix B: Exchange rates

FIGURE 112: EXCHANGE RATES USED IN THE REPORT

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

CURRENCY	31 MAR 2022	31 DEC 2021	31 MAR 2021	31 DEC 2020	31 MAR 2020	31 DEC 2019	31 MAR 2019
CAD	0.8011	0.7902	0.7955	0.7841	0.7083	0.7715	0.7495
CHF	1.0856	1.0967	1.0618	1.1308	1.0391	1.0333	1.0049
CNY	0.1577	0.1574	0.1526	0.1532	0.1412	0.1436	0.1490
EUR	1.1096	1.1377	1.1743	1.2228	1.1024	1.1227	1.1221
GBP	1.3152	1.3536	1.3798	1.3663	1.2455	1.3268	1.3043
HKD	0.1277	0.1282	0.1286	0.1290	0.1290	0.1284	0.1274
INR	0.0132	0.0134	0.0137	0.0137	0.0133	0.0140	0.0144
IDR	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
JPY	0.0082	0.0087	0.0090	0.0097	0.0093	0.0092	0.0090
KRW	0.0008	0.0008	0.0009	0.0009	0.0008	0.0009	0.0009
MYR	0.2378	0.2400	0.2414	0.2486	0.2318	0.2445	0.2449
SGD	0.7386	0.7415	0.7439	0.7566	0.7034	0.7437	0.7320
THB	0.0301	0.0301	0.0320	0.0333	0.0306	0.0336	0.0315
TWD	0.0349	0.0361	0.0351	0.0356	0.0331	0.0334	0.0324
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 of VND per USD as at 31 March 2022 was 0.0000435138.

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



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