

MILLIMAN RESEARCH REPORT

2016 Mid-Year Embedded Value Results: Europe and Japan

Generating Value

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Executive Summary

Disclosed embedded value (EV) results have been mixed over the first six months of 2016, partly reflecting poor growth in the equity markets and persistently low interest rates. Many European equity market indices have exhibited poor and variable growth over the last 18 months, which may reflect a number of factors. In particular, interest rates in Europe remain at historical lows and fell in the first half of 2016 at all durations. Against this backdrop, the firms included in the survey have disclosed generally positive levels of the value of new business (VNB), with around 90% of surveyed firms experiencing improved VNB compared with the same period last year.

Solvency II came into force on 1 January 2016 and, understandably, firms in Europe have been focused on working towards compliance with this new regulatory regime and finalising processes to provide Solvency II balance sheet reporting going forward. The implementation of Solvency II has impacted the embedded value reporting of some firms, and the European Embedded Value (EEV) and Market Consistent Embedded Value (MCEV) Principles and Guidance, amended in May 2016¹, have seemingly left the door open when interpreting how to allow for Solvency II and how closely firms can align Solvency II and embedded value methodologies.

As expected, fewer companies published mid-year embedded values compared with the year-end, and the level of detail was scaled back for those that did. Of the 23 European companies covered in our 2015 year-end publication, seven disclosed mid-year results (compared with 10 disclosures for 2015 mid-year)—some have stated that they have stopped disclosing EV and others have produced an alternative EV-like measure based on the Solvency II balance sheet. Some of these alternative measures arise due to the existence of features of Solvency II that may not be perceived as market-consistent such as:

- Contract boundaries
- The cost of capital
- The matching adjustment

We believe that embedded value (or a similar metric) remains a relevant performance and value measure for companies in the market—it gives consistency with past years' reporting and is not constrained by some of the regulatory requirements of Solvency II. The recent updates to the EEV and MCEV Principles and Guidance removed a lot of requirements for disclosures, including the requirement to disclose new business value. But it seems there is still an appetite from the industry to disclose those values, as it is seen as an important metric by analysts and other stakeholders. Ultimately it may be the various stakeholders and market analysts that drive the future of supplementary value reporting, with a key question being whether Solvency II numbers meet their requirements for understanding the values of firms' businesses.

This mid-year publication provides an update on the embedded value reporting for European insurance companies that have published interim embedded value results in 2016. For a detailed discussion on embedded value methodology, please see our year-end publication *2015 Embedded Value Results: Europe*.²

We also include a comprehensive section on embedded valuing reporting in Japan. This covers the performance of key Japanese companies reporting embedded value and the hot topic issues facing the Japanese market.

1 The European Embedded Value Principles are available at:
http://www.cfoforum.nl/downloads/CFO-Forum_EEV_Principles_and_Guidance_April_2016.pdf
 The Market Consistent Embedded Value Principles are available at:
http://www.cfoforum.nl/downloads/CFO-Forum_MCEV_Principles_and_Guidance_April_2016.pdf

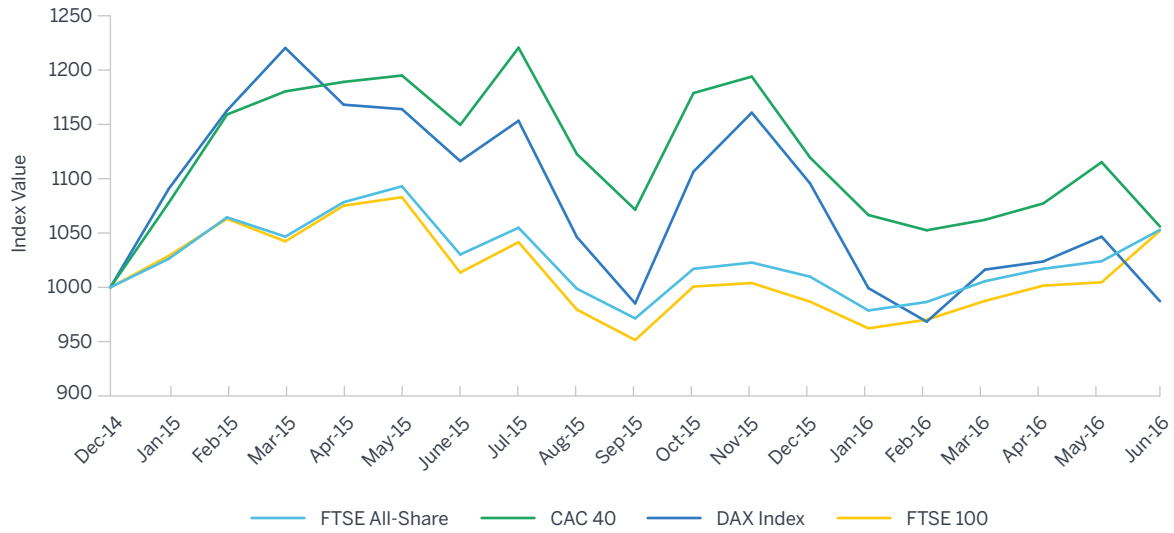
2 Egoshina, T. et al. (August 2016). 2015 Embedded Value Results: Europe – Generating Value. Milliman Research Report.
http://www.milliman.com/uploadedFiles/insight/2016/2288LDP_Europe_20160913.pdf

June 2016 mid-year reporting, European market

THE STORY IN EUROPE

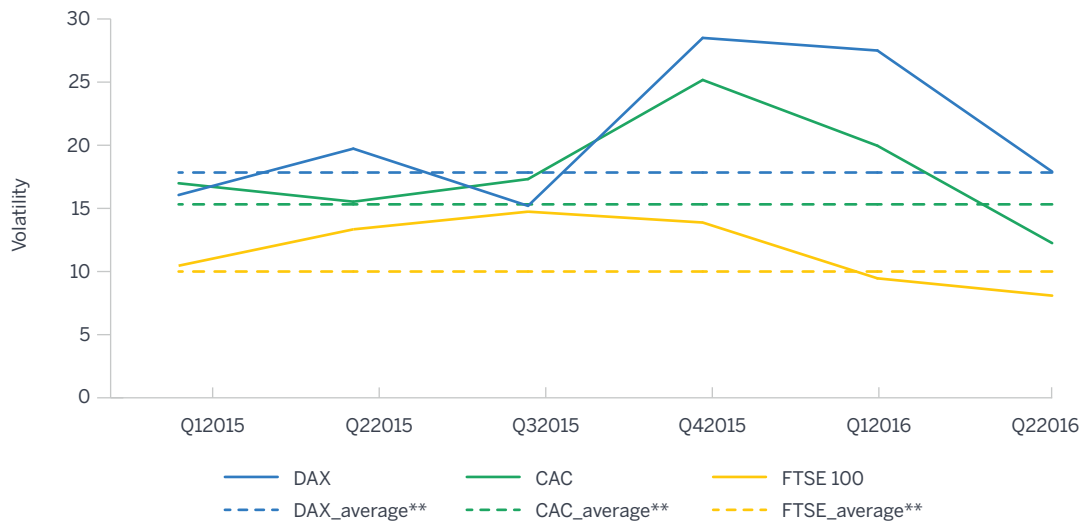
Market conditions have continued to be challenging in Europe, with high levels of short-term volatility. Equity markets have exhibited poor and variable growth over the last 18 months, with the FTSE All-Share, CAC 40, DAX and FTSE 100 indices all broadly returning to their year-end 2014 values by the end of Q2 2016 (as shown in Figure 1).

FIGURE 1: RECENT EQUITY MARKET PERFORMANCE



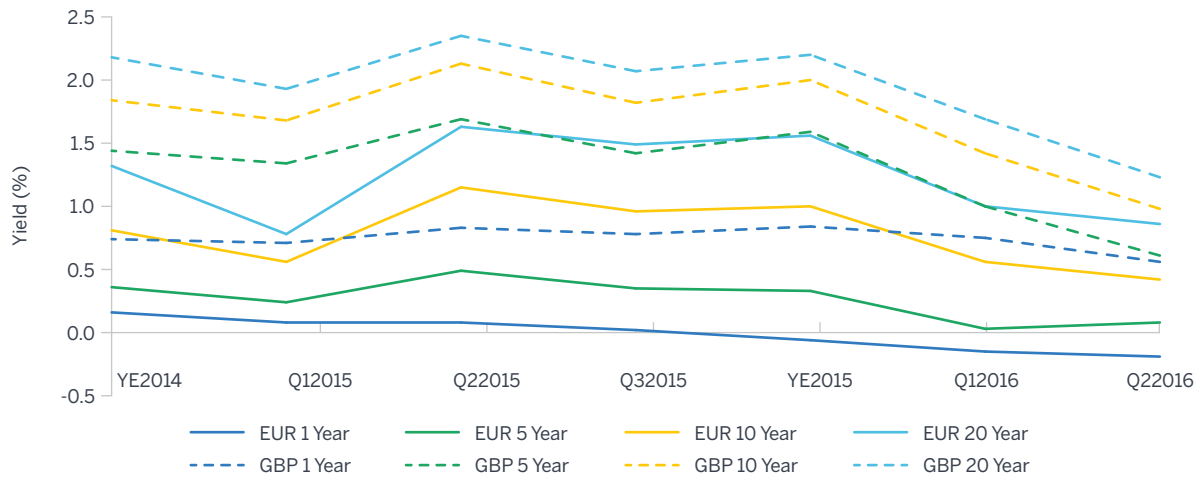
Source: Bloomberg
Indices above are the gross total return indices and have been rebased to 1,000 as at 31 December 2014

FIGURE 2: APPROXIMATE SIX-MONTH VOLATILITY (ANNUALISED)*



Source: Bloomberg
Underlying source indices used are the gross total return indices
* Approximate volatility calculated using percentage monthly change in index
** Average taken over 2015 and the first half of 2016

Figure 2 shows that equity markets exhibited increased volatility over the second half of 2015, with the market starting to flatten out over the first half of 2016. Whilst there were some signs of recovery for UK equities in the first half of 2016, Eurozone equities have seen a downward trend up to the end of Q2 2016. Implied volatilities for UK equities have increased marginally from year-end 2015 to mid-year 2016.

FIGURE 3: RECENT TRENDS IN GBP AND EUR SWAP RATES

Source: Bloomberg

Interest rates in Europe remain at historical lows, continuing to negatively affect many life insurers. Figure 3 shows that interest rates continued to fall in the first half of 2016 at all durations. In particular, short duration yields in the Eurozone have become negative and sterling swap yields have suffered a sharp decline since the end of 2015, with medium- and long-term yields falling by 1% from an already historically low position. The low interest rate environment presents an ongoing challenge for insurers across Europe—reducing or destroying the value of in-force business sold with investment guarantees and putting pressure on new business sales with regard to both margins and volumes.

Recently, national supervisory authorities in a number of European countries have advised (re)insurers that they will need to adapt their Solvency II internal models to handle negative interest rates and to ensure that they are sufficiently capitalised against interest rates continuing to fall.

DEVELOPMENTS IN EMBEDDED VALUE REPORTING DUE TO SOLVENCY II

Embedded value reporting in Europe continues to evolve as companies adapt to the new solvency regime. The EEV and MCEV Principles and Guidance, amended in May 2016, leave some room for interpretation about how to allow for Solvency II and give a lot of freedom as to how closely companies align their Solvency II and embedded value methodologies. Below we provide an overview of the changes made by companies in our survey to their embedded value methodologies.

Legal & General

Following its decision to discontinue EV reporting, Legal & General provided a replacement measure of new business profitability under the new Solvency II regime. The ‘Solvency II Value’ metric provides a measure of the value created in the business allowing for the run-off of Solvency II capital. This metric essentially follows the EEV Principles, but assumes profit emergence on a Solvency II basis instead of the previous Solvency I Pillar I regime, with other methodologies unchanged. Legal & General stated that a Solvency II value reporting framework, which incorporates best estimate cash flows in relation to insurance assets and liabilities, has replaced EEV reporting in the management information used internally to measure and monitor capital resources.

Legal & General also noted that Solvency II has elements which are inconsistent with the Group’s own view and definition of economic capital, and so it maintains a risk-based capital model that is used to calculate the Group’s economic capital balance sheet.

Economic capital surplus³ can represent the value of the company and in this sense can be compared to previously produced EEV measures and the current Solvency II measure.

3 Economic capital surplus is the excess of eligible own funds on an economic basis over the economic capital requirement, and represents the amount of capital available to the company in excess of that required to sustain it in a 1-in-200 year risk event.

Solvency II own funds at mid-year 2016 are materially lower compared with economic capital surplus (£5.3 billion vs £8.1 billion). The key differences between the two measures include:

- The use of a different matching adjustment (economic matching adjustment) to calculate economic capital surplus. This adjustment is derived using the same approach as the Solvency II matching adjustment, but any constraints Legal & General considers to be economically artificial, such as capping the yield on assets with a credit rating below BBB and any ineligibility of certain assets and liabilities, have not been applied. Switching from using the Solvency II matching adjustment to the economic matching adjustment results in an increase in value of £2.2 billion.
- The use of a different calibration for longevity risk between the economic capital and Solvency II balance sheets. Legal & General stated in its report that, under economic capital, the calibration is chosen to ensure that the balance sheet makes sufficient allowance to meet the 1-in-200 year stress to longevity over the runoff of the liabilities, rather than just over a one-year time frame as required by Solvency II. Switching from using the Solvency II calibration results in an increase in value of £0.6 billion.
- A small adjustment of £0.1 billion, due to a different view on capital fungibility and transferability between Solvency II and economic capital.
- Replacing the risk margin with a recapitalisation cost, which represents the cost of recapitalising the balance sheet following a stress event. The impact of this change is immaterial.
- An additional adjustment of £0.1 billion, due to differences in the methods used for group consolidation between Solvency II and economic capital.

Aviva

Aviva has discontinued its MCEV reporting as of 2016, but the company has reported the Group's value of new business on both an MCEV basis and on an adjusted Solvency II basis at mid-year 2016. Adjusted Solvency II VNB is defined as the increase in Solvency II own funds, which includes additional business which is covered by the MCEV value but is not in scope for the unadjusted Solvency II value (e.g. UK and Asia Healthcare business). The impact of contract boundaries imposed under Solvency II is also removed.

The MCEV value of new business is approximately 30% higher than the equivalent adjusted Solvency II value (£583 million vs £448 million). The main cause of this difference, amounting to £123 million, is the replacement of the risk margin with the MCEV cost of non-hedgeable risk. Differences in economic assumptions also cause a small reduction of £12 million.

Prudential

Prudential has continued to report EEV results as at mid-year 2016. In addition it has disclosed a reconciliation between the EEV basis shareholders' equity and the total shareholders' equity on a Solvency II basis as at 1 January 2016. The EEV basis value was £32.4 million, compared with £31.9 million under Solvency II.

Net worth is £2.8 million higher using the Solvency II basis as a result of the following:

- A release in the prudent margins under Solvency I leading to an increase in net worth.
- A portion of future transfers from the with-profits funds being recognised, leading to a further increase.
- An increase in the capital requirements under Solvency II, partially offsetting the above two items.

The net value of in-force business (VIF) fell by £3.2 million as a result of the following:

- The factors which lead to an increase in the net worth, as described above, cause a corresponding reduction in the VIF.
- The runoff of the risk margin, which is captured in the VIF, leads to a further reduction.
- The higher capital requirements under Solvency II lead to an increase in the cost of capital, which is deducted from the VIF.

Chesnara

Chesnara has taken a similar approach to Legal & General, having replaced its EEV reporting with a new 'Economic Value' (EcV) metric but has continued to report the value of new business using the embedded value methodology, as it deemed it to 'remain the most commercially relevant and consistent measure at this point in time'.

Its 'Economic Value' metric is broadly similar to EEV but is derived from Solvency II own funds. The EEV was £455.2 million as at year-end 2015 compared with an economic value of £453.4 million—less than a 0.5% difference.

The economic value at mid-year 2016 was £459.9 million, compared with Solvency II own funds of £389.6 million. The main differences in the two measures are as follows:

- A reduction in the cost of capital rate used in the calculation of the risk margin from 6% to 3%. Chesnara believes that the risk margin under Solvency II places an unrealistic value on the cost of capital. This leads to an increase of £37.6 million in the Solvency II own funds.
- The removal of Solvency II contract boundaries restrictions. Instead, the realistic value of future cash flows on all in-force contracts is allowed for. This leads to an additional increase of £18.9 million in the Solvency II own funds.
- The removal of restrictions placed on ring-fenced funds under Solvency II, as they are deemed to be temporary in nature, leading to a further increase in Solvency II own funds of £5.2 million.
- The recognition of dividends in the period in which they are paid. At mid-year 2016 there was a proposed interim dividend of £8.6 million which was not included in the economic value.

Phoenix

Phoenix confirmed in its interim report that it has aligned its key performance metrics to the Solvency II framework and will no longer be reporting the MCEV measure.

Rothesay Life

Rothesay Life has continued to publish MCEV results as at mid-year 2016. The company has stated that the mid-year 2016 MCEV of £2.1 billion includes an explicit allowance for Solvency II, in line with the revision to the MCEV Principles.

The net worth is determined on a statutory International Financial Reporting Standards (IFRS) basis, with the allowance for Solvency II being made through the VIF.

The present value of future profits (PVFP) is calculated on an IFRS basis. The allowances for Solvency II have instead been made through the required capital and associated frictional costs of capital. Rothesay Life has stated that the impact of this is presentational and that the resulting MCEV would be unchanged had the allowance been made within the PVFP. As at mid-year 2016 it has determined the appropriate required capital to be the greater of the following:

- Solvency II Pillar 1 technical provisions plus 130% of the Solvency Capital Requirement.
- Best estimate liabilities plus the economic capital requirement, equivalent to the one-year value-at-risk to a 99.8% confidence interval.

The company also stated that the cost of non-hedgeable risk is calculated in line with the Own Risk and Solvency Assessment (ORSA) and results in an annual capital charge of 3.5%.

Royal London

Royal London has stated that it continues to calculate its EEV results based on the previous realistic balance sheet regime of the Prudential Regulation Authority (PRA), in particular applying the margins of prudence within assumptions and the definition of contract boundaries in line with the previous regime. It has aligned certain aspects of methodology with Solvency II such as using the swap curve for discounting the cash flows and a change in the methodology to reserve for reinsurer default.

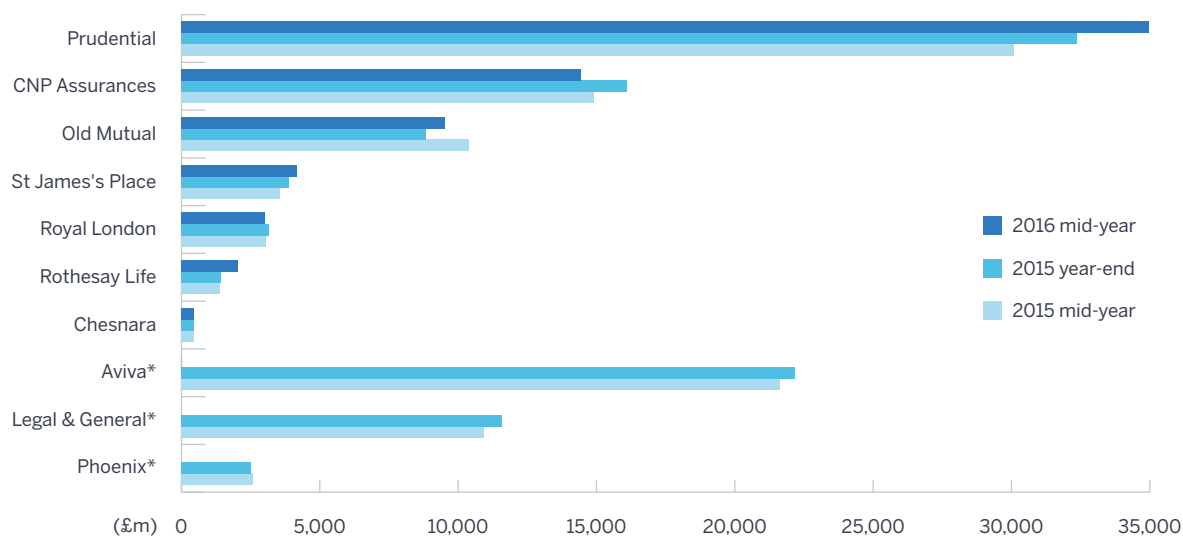
The effect of these changes has been an increase in the net worth of £164 million and a reduction in the VIF of £346 million, resulting in a net reduction in the Group's EEV of £182m.

EMBEDDED VALUE RESULTS

There has been a reduction in firms reporting on an embedded value basis at half-year (HY) 2016, compared with HY 2015. Three firms included in our HY 2015 survey (Aviva, Legal & General and Phoenix) had not published a HY 2016 EV result at the time of writing.

The companies included in our mid-year update had mixed results over the first six months of 2016, which is partly a reflection of persistently low interest rates and poor growth in the equity markets. Two companies included in our survey (CNP Assurances and Royal London) saw their embedded value fall since year-end 2015.

FIGURE 4: PUBLISHED EMBEDDED VALUE RESULTS AT MID-YEAR 2016, YEAR-END 2015 AND MID-YEAR 2015



*Did not disclose Embedded Value information for mid-year 2016.

The embedded values presented in Figure 4 include both covered and non-covered business. The firms exhibiting increases in embedded value (in domestic reporting currency) since year-end 2015 were Rothesay Life, Prudential, St James's Place and Old Mutual.

Rothesay Life's significant increase in embedded value over the first six months of 2016 was fuelled by acquisitions and positive economic variances.

Embedded value growth for Prudential was mainly due to increased value of new business and stable returns from existing business. The largest component of new business growth was from Prudential's Asia operations.

Old Mutual's increase was largely due to an increase in its value of non-covered business. Emerging markets operations exhibited positive experience and economic variances and growth in new business value, offset by net transfers due to acquisitions and dividends paid, which led to the aggregate embedded value of emerging markets operations staying broadly the same.

New business contributions for St James's Place rose by around 11% from the previous year, which reflects increased sales volumes. However, the extent of this growth was dampened by the change in business mix over the year towards lower-margin pensions, larger-investment/lower-margin investment business and business written in the firm's Asia operations.

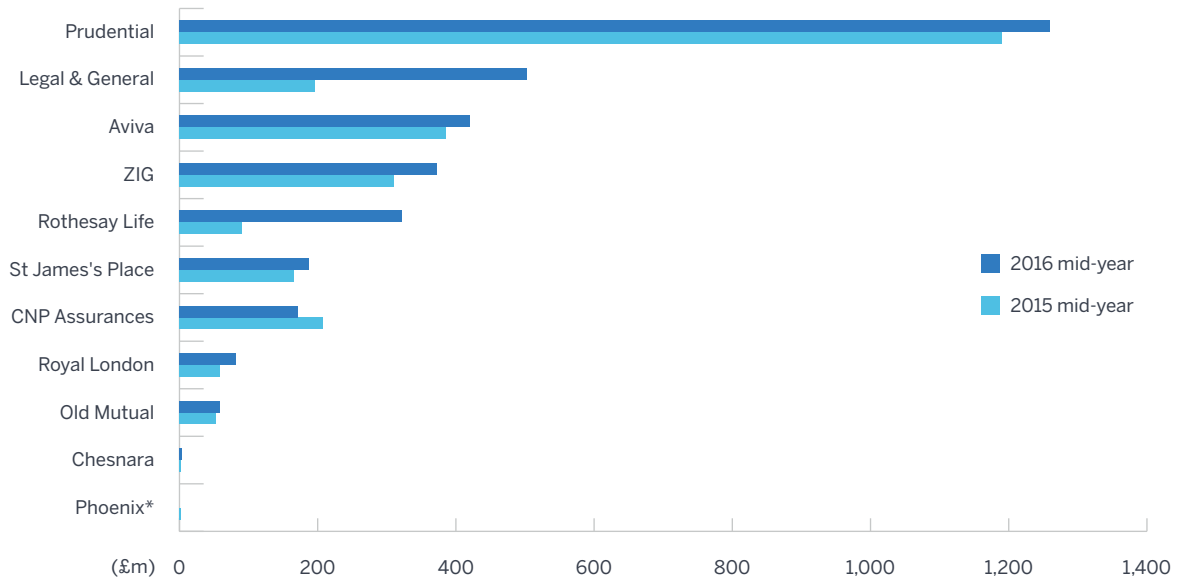
VALUE OF NEW BUSINESS

New business experience for companies in our survey has been generally positive compared with last year, with the total VNB reaching £3.4 billion at mid-year 2016 compared with £2.7 billion at mid-year 2015.

However, the level of growth in VNB for individual companies varied over the first half of 2016, ranging from 5%-10% (Prudential and Aviva) to 150% (Legal & General) and 250% (Rothesay Life).

Figure 5 shows the VNB performance over the periods up to mid-year 2015 and mid-year 2016. Prudential, Legal & General and Aviva took the top three positions in terms of VNB at mid-year 2016.

FIGURE 5: PUBLISHED VALUE OF NEW BUSINESS AT MID-YEAR 2016 AND MID-YEAR 2015



*Did not disclose Value of New Business information for mid-year 2016.

Legal & General and Rothesay Life took the top spot in terms of relative growth in VNB over the equivalent period in 2015. The three top performers in terms of VNB growth after Legal & General and Rothesay Life were Chesnara, Royal London and Zurich.

Prudential's value of new business in the first six months of 2016 was more than double that of its nearest competitor in our survey and higher than in the first six months of 2015. This was mainly because of higher volumes due to continuing growth in Asia, as the VNB margins have broadly remained the same as they were previously.

Rothesay Life's significant increase in its VNB reflects acquisition of an annuity portfolio from Aegon UK.

Legal & General's large increase in VNB compared with mid-year 2015 was a result of higher annuity sales of £3.8 billion (HY 2015 £1.3 billion). In addition, bulk annuity sales were £3.6 billion, although considered in isolation this movement is somewhat misleading as it includes a £2.9 billion back book annuity transaction with Aegon UK for which Legal & General has retained the longevity risk. In HY 2016 Legal & General reinsured £444 million of longevity risk in relation to new business.

Chesnara increased its VNB by 55% (67% excluding the business written in Countrywide Assured, which was not open to new business in 2016) and this growth has been largely attributed to an increase in volumes, although a modest increase in margins was also noted.

Royal London saw a material increase in its value of new business at mid-year 2016 compared with mid-year 2015. This was primarily due to both an increase in volumes of new business and an increase in new business margins for pensions business—which has been boosted by the growth of a “secondary” automatic enrolment market (where advisers recommend schemes move to take advantage of better quality scheme administration or investment options).

Zurich saw an increase of approximately 20% in its value of new business at mid-year 2016 compared with mid-year 2015. This was due to an increase in new business margins, most materially (weighted by new business annual premium equivalent) in Europe, although the impact of this has been dampened by a decrease in volumes of new business.

OTHER MEASURES OF VALUE

In this section we briefly discuss how developments in both Solvency II and IFRS reporting may impact embedded value reporting going forward.

Solvency II developments

The Solvency II regime came into force on 1 January 2016 and, understandably, firms in Europe have been working towards compliance with the new regime and finalising processes to provide Solvency II balance sheet reporting going forward.

Those firms with a December year-end have already submitted Solvency II Day One results as well as two Solvency II quarterly submissions at Q1 2016 and Q2 2016 to the local regulators and will be looking to produce their first full annual returns as at 31 December 2016. This annual return includes the Solvency II Pillar 3 regulatory reporting requirements of a Solvency and Financial Condition Report (SFCR) and Regulatory Supervisory Report (RSR) and will need to be submitted to the local regulators by 19 May 2017 for solos (1 July 2017 for groups).

All firms are also expected to produce an Own Risk Solvency Assessment (ORSA) in 2016 (which includes the 'Forward Looking Assessment of Own Risk'). Although there is no hard deadline for the ORSA report, it must be submitted to the PRA within two weeks of its completion and will need to be submitted by December 2016.

There has been some discussion in the market as to the likely remaining life span of EV reporting in light of Solvency II. Based on our sample, we have seen three firms included in our HY 2015 survey ceasing to publish a HY 2016 EV result at the time of writing.

On the other hand some companies may continue to align their embedded value methodologies with Solvency II. Companies and users of companies' accounts would ideally prefer Solvency II and embedded value reporting to converge as far as possible so that common assumptions and calculations can be used. However, the existence of features of Solvency II that are not market-consistent—such as the volatility adjustment (VA), matching adjustment (MA), and transitional measures which may (if used) last for 16 years—might distort Solvency II results, imposing the need for a fully market-consistent reporting metric. Ultimately it will depend on whether stakeholders and market analysts find that Solvency II numbers meet their requirements for understanding the value of firms' businesses.

Despite this uncertainty there is still an appetite to continue reporting information around new business levels and the value of new business using an embedded value approach. In some cases, this information may be calculated in line with Solvency II reporting.

IFRS developments

The International Accounting Standards Board (IASB) continues to make progress on its long-running project on insurance contracts. Following the feedback received on the Exposure Draft⁴ (ED) issued, the IASB made a number of tentative decisions and amendments to proposals in the Exposure Draft. The feedback received and subsequent decisions made have been summarised in the 'Feedback Statement' paper⁵ published by IASB in August 2016.

The main outstanding area remains the accounting for participating contracts (with-profits). The IASB still plans to consider implications arising from the tentative decision that the mirroring approach proposed in the Exposure Draft should not be permitted or required. In light of this, the timetable for the final standard has potentially been delayed—the earliest possible date for the final standard is late 2016 or early 2017. Mandatory implementation is likely to be three years after the publication of the standard.

4 Exposure Draft ED/2013/7 Insurance Contracts, published in June 2013.

5 IFRS: How We Responded to Feedback on the 2013 Exposure Draft. <http://www.ifrs.org/Current-Projects/IASB-Projects/Insurance-Contracts/Documents/2016/Feedback-Statement.pdf>

March 2016 year-end reporting, Japanese market

Japanese embedded value (EV) disclosures offer valuable insights into market dynamics that are not available from other sources. However, results for the fiscal year ending 31 March 2016 require careful scrutiny. Low interest rates are causing unprecedented challenges for life insurers in Japan and in many other jurisdictions. Due in part to aggressive intervention by the Bank of Japan (BOJ), 10-year Japanese government bond (JGB) yields were negative on 31 March and remained in negative territory throughout the first half of the new fiscal year. It is highly unclear how sustainable BOJ policy is, and what the longer-term implications may be for Japan's economy and Japan's life insurers. In an effort to present results that adhere to a market-consistent philosophy but reflect today's unusual market circumstances and the long-term nature of life insurance risks, several companies have adopted changes in methodology or presentation of results. While companies have carefully reflected on these changes and they have for the most part been judiciously applied, they do make comparability of results among companies more difficult than in the past. We describe some of the key reporting issues that companies are grappling with in sections that follow.

Due in large part to the low interest rate environment and declining equity values, most companies experienced significant reductions in embedded value from fiscal 2014 to fiscal 2015. For listed companies, stock prices declined by a broadly similar amount; as a result, the ratio of market cap to embedded value has remained well below one.

As at the fiscal year ending 31 March 2016, 11 domestic Japanese life insurance entities, representing 20 separate life insurance companies, disclosed embedded values. The number of reporting entities declined by two. Orix Life, which had published on a traditional embedded value basis (TEV) through fiscal 2014, chose not to publish, as did Mitsui Life, following its acquisition by Nippon Life. The increase in the number of reporting life insurance companies reflects major U.S. acquisitions by Meiji Yasuda and Sumitomo (StanCorp and Symetra), and the disclosure of NeoFirst Life, a recent strategic domestic acquisition by Dai-ichi Life.

Companies that reported embedded values account for approximately 70% of Japanese domestic life insurance industry assets. In addition, several subsidiaries of European insurers report embedded value results as part of their parents' reporting processes. All reporting entities adopt, in principal, a market-consistent approach. Four of the 11 have fully adopted the CFO Forum's market-consistent embedded value (MCEV)⁶ principles. The three companies that have recently acquired important U.S. operations (Dai-ichi Life, Meiji Yasuda Life and Sumitomo Life) have moved away from a market-consistent basis for these U.S. subsidiaries due, in part, to the challenges inherent in applying market-consistent methods on spread business; however, their approach remains within the overall EEV framework.

Figure 6 shows the framework followed by our group of Japanese entities over fiscal years 2015, 2014 and 2013 & 2012.

FIGURE 6: EV REPORTING PRINCIPLES

EV REPORTING PRINCIPLES	2015		2014		2013 & 2012	
	REPORTING ENTITIES	INDIVIDUAL COMPANIES	REPORTING ENTITIES	INDIVIDUAL COMPANIES	REPORTING ENTITIES	INDIVIDUAL MEMBERS
EEV	0	3	0	1	0	0
Market-Consistent EEV	7	11	8	11	8	11
MCEV	4	6	4	6	3	5
Other	0	0	1	1	3	3
Total	11	20	13	19	14	19

Source: Embedded value disclosures

In spite of the fact that all reporting companies follow CFO Forum guidance with only minor deviations, as we noted above, several companies have introduced methodology changes this year in an effort to cope with the extraordinary financial market environment.

⁶ Copyright © Stichting CFO Forum Foundation 2008.

RECENT TRENDS IN REPORTED EMBEDDED VALUE

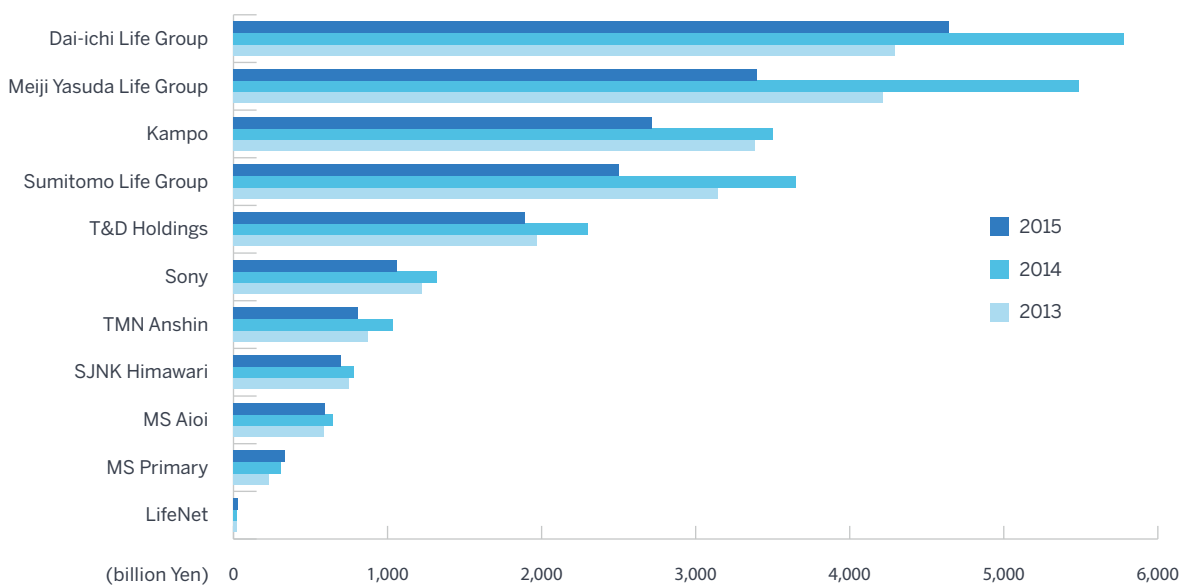
Following six years of steadily increasing embedded values, market conditions took their toll in 2015, leading to a significant decline in reported values at the end of the fiscal year. Values, however, remain above financial crisis lows.

The most significant factors driving this year’s decline are:

- Low or even negative risk-free yields, which affected all companies
- Declining equity values, of significance primarily at the largest companies, because they hold significant equity portfolios
- A strengthening yen and decline in value of foreign currency portfolios; similar to the case with equity values, this factor was most significant at the largest companies

Published embedded values for the past three years are shown in Figure 7.

FIGURE 7: PUBLISHED EMBEDDED VALUE RESULTS AT YEAR-END 2015, 2014 AND 2013

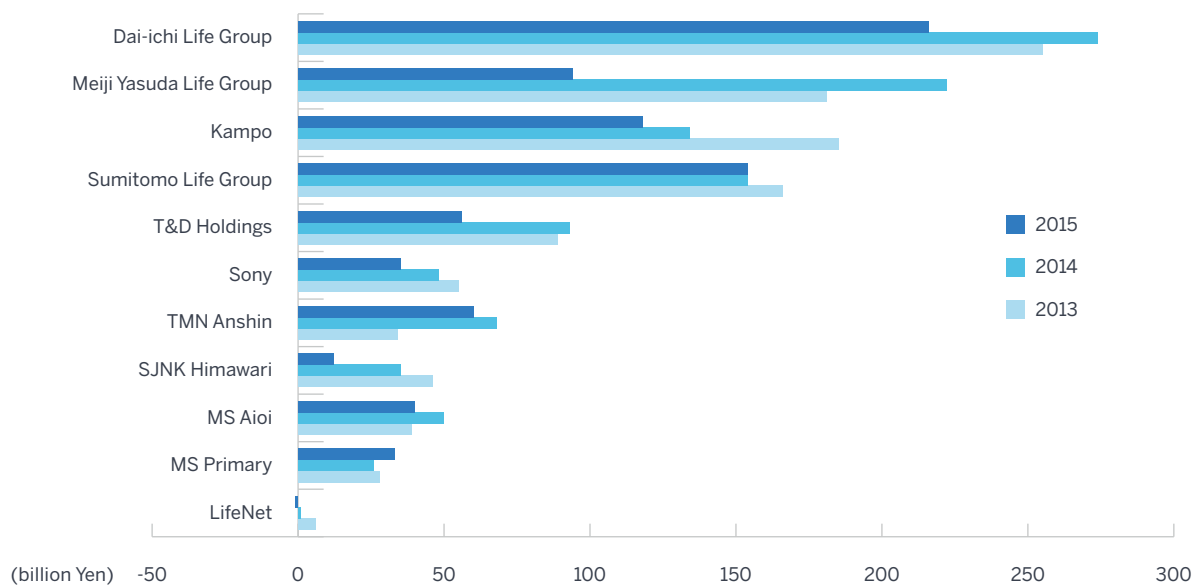


Source: Embedded value disclosures, prior to any restatements.

Facing adverse financial market conditions, embedded values for most companies have sunk to a range similar to those reported around 2011 and 2012. Relative positions are mainly unchanged from the prior year; Dai-ichi Life and Meiji Yasuda remained in the number one and two spots, with Kampo edging out Sumitomo to return to the third position. Year-by-year comparisons require some caution. For example, Dai-ichi Life’s embedded value is larger than it otherwise would have been due to share issuance connected with their acquisition of Protective. Methodology changes may also affect the comparison of one year to the next.

Recent trends in new business values are shown in Figure 8.

FIGURE 8: PUBLISHED VALUE OF NEW BUSINESS AT YEAR-END 2015, 2014 AND 2013



Source: Embedded value disclosures, prior to any restatements.⁷

While all companies continue to add significant value through new sales, most companies saw a material decline in new business value and there is a considerable difference in trends among the various market participants. The decline in value generated from new sales was due mainly to diminishing new business margins in the face of low interest rates. Some caution is required in comparing results, due to methodology differences among companies. In particular, some companies use point-of-sale assumptions to value new business, whereas some companies use end-of-year assumptions. In a typical situation, one might not expect materially different results. In the current extraordinary interest rate environment, the difference can be substantial.

RISK DISCOUNT RATE OVERVIEW

The key areas of consideration when determining the risk discount rate to use in the calculation of embedded value results include:

- Whether to construct the risk discount rate using a bottom-up or top-down approach
- Whether to use swaps or JGBs as the underlying basis for the risk-free rate
- Whether an allowance for any liquidity premium is made
- The extrapolation of the yield curve

Because the Japanese companies generally follow a market-consistent approach (see Figure 9), a bottom-up approach is the most typical.

In light of low rates and a yield curve that is suppressed by BOJ interventions, extrapolation of the yield curve has become a hotly debated topic. Dai-ichi Life took a firm stand on this topic with their most recent disclosure, choosing to adopt an ultimate forward rate of 3.5%, with extrapolation occurring over a 30-year period beginning at duration 30 in the yield curve.

⁷ First half of period economic assumptions are used for Sumitomo Life Group FY2015 VNB. Sumitomo Life Group VNB uses EoP basis in FY2014 and FY2013. End of each quarter economic assumptions are used for Sony FY2015 VNB. Sony VNB uses EoP basis in FY2014 and FY2013. TMN Anshin in FY2013 result is based on TEV.

FIGURE 9: OVERVIEW OF RISK DISCOUNT RATE CONSTRUCTION

CORPORATE GROUP	PRINCIPLES	RISK DISCOUNT RATE METHODOLOGY	UNDERLYING BASIS FOR DISCOUNT RATE	LIQUIDITY PREMIUM	EXTRAPOLATED RISK-FREE CURVE?
Dai-ichi Life Group	EEV(MC)	bottom-up ^{*1}	JGB	Not Disclosed	Y ^{*5}
Kampo	EEV(MC)	bottom-up	JGB	Not Disclosed	Y, flat beyond year 40
LifeNet	EEV(MC)	bottom-up	swap	Not Disclosed	Not Disclosed
Meiji Yasuda Life Group	EEV(MC)	bottom-up ^{*2}	JGB	Not Disclosed	Y ^{*6}
MS Aioi	EEV(MC)	bottom-up	JGB	Not Disclosed	Y, flat beyond year 40
MS Primary	EEV(MC)	bottom-up	swap	Y for AUD and USD ^{*4}	Y, flat beyond year 40
SJNK ⁸ Himawari	MCEV	bottom-up	JGB	N	Y, flat beyond year 40
Sony	MCEV	bottom-up	JGB	N	Y, flat beyond year 40
Sumitomo Life Group	EEV(MC)	bottom-up ^{*3}	JGB	Not Disclosed	Y ^{*6}
T&D Holdings	MCEV	bottom-up	JGB	N	Y, flat beyond year 40
TMN Anshin	MCEV	bottom-up	JGB	N	Y, flat beyond year 40

*1 Non-VA businesses of Protective Life is calculated based on a top-down approach.

*2 StanCorp Life EEV is calculated based on a top-down approach.

*3 Symetra Life EEV is calculated based on a top-down approach.

*4 For fixed product denominated by AUD and USD. Not applied to VA product and fixed product denominated by other currencies.

*5 For JPY, beyond year 30 ultimate forward rate (3.5%) is set with 30 year convergence period with the Smith-Wilson extrapolation method based on the Insurance Capital Standard (ICS) discussion; Other than JPY, flat beyond 30 years.

*6 Takes into consideration the relevant Japanese swap rate for periods greater than 30 years.

Source: Embedded value disclosures, prior to any restatements.

All reporting companies follow market-consistent methodologies for their Japan operations, and use swap rates or JGB yields to represent the risk-free rate. Many companies prefer to use JGB yields in lieu of swaps, due in part to the relatively high proportion of general account assets allocated to JGBs. MCEV companies using JGBs as the risk-free proxy report a sensitivity showing results under the swap curve. At this point, no company discloses the use of a liquidity premium, with the exception of MS Primary, which has introduced a liquidity premium on products denominated in foreign currency.

All reporting companies adopt some form of yield curve extrapolation, most commonly flat beyond 40 years. Further thoughts on this topic are presented in the section entitled 'Market-consistent methodologies in an era of central bank interventions' below.

INFLATION ASSUMPTIONS

With the ongoing application of quantitative easing in Japan, and the rapid accrual of government debt, we are increasingly seeing intense discussions about appropriate inflation assumptions for embedded value reporting. On the one hand, with a consumer price index (CPI) that has been effectively flat for 20 years and historically low interest rates, there are strong arguments to support a zero inflation assumption.

On the other hand, prices of inflation-indexed bonds demonstrate that the market anticipates the emergence of low inflation. The Abe Administration continues to target 2% inflation, and history suggests that governments that incur high levels of debt may ultimately resort to inflation to decrease the real burden of that debt.

As inflation concerns increase among professionals, a small number of companies have introduced an inflation assumption, as shown in Figure 10.

FIGURE 10: JAPAN DOMESTIC INFLATION ASSUMPTION

COMPANY	ANNUAL INFLATION EXPECTATION
SJNK Himawari	0.380%
Sony	0.091%
TMN Anshin	0.200%

Source: Embedded value disclosures.

In addition, Dai-ichi Life Group assumes U.S. inflation of 2.5% and Australian inflation of 2.75%. Meiji Yasuda Life Group and Sumitomo Life Group assume U.S. inflation of 2.0%.

If signs of inflation begin to emerge in Japan, we anticipate that increasing numbers of companies will introduce a positive inflation outlook for their EV reporting.

COST OF CAPITAL

As the majority of companies apply a market-consistent approach to their embedded value reporting, the cost of capital is typically modelled using a frictional cost approach. The required capital used in the calculation is generally set with reference to the Japanese regulatory solvency standard, often guided by the results of an internal model. It is typical to include a sensitivity showing the value that would emerge assuming adherence only to the minimum statutory requirement.

RESIDUAL NON-HEDGEABLE RISKS

As required by the CFO Forum MCEV Principles, all companies reporting under an MCEV approach explicitly allow for a cost of residual non-hedgeable risks (CRNHR). All follow an economic capital approach, with Sony and SJNK Himawari disclosing methods that parallel those prescribed under Solvency II. Japanese companies reporting under EEV typically employ a simplified model. Details are described in Figure 11.

FIGURE 11: OVERVIEW OF APPROACH TO RESIDUAL NON-HEDGEABLE RISKS

GROUP	MODEL	METHOD	EQUIVALENT COST OF CAPITAL CHARGE ⁹	COVERED RISK
Dai-ichi Life Group	Simple model	Not disclosed	N/A	Operational risk, non-hedgeable market risk, and the risk from uncollectibility of carrying loss on tax accounting basis are explicitly disclosed.
Kampo	Simple model	Not disclosed	N/A	Operational risk, catastrophe risk, and the risk from uncollectibility of carrying loss on tax accounting basis are explicitly disclosed.
LifeNet	Simple model	Not disclosed	N/A	Operational risk, counterparty risk, lapse risk, mortality and morbidity risk are explicitly disclosed.
Meiji Yasuda	Simple model	Not disclosed	N/A	Operational risk, pandemic risk and the risk from uncollectibility of carrying loss on tax accounting basis are explicitly disclosed.
MS Aioi	Simple model	Not disclosed	N/A	Operational risk and the risk from uncollectibility of carrying loss on tax accounting basis are explicitly disclosed.
MS Primary	Simple model	Not disclosed	N/A	Counterparty risk from the reinsurer for minimum guarantee risk from variable insurance, operational risk and the risk from uncollectibility of carrying loss on tax accounting basis are explicitly disclosed.
SJNK Himawari	Solvency II type	Cost of capital	6.00%	An allowance for the uncertainty of non-economic assumptions and the portion of economic assumptions considered to be non-hedgeable.
Sony	Solvency II type	Cost of capital	2.50%	An allowance for the uncertainty of non-economic assumptions and the portion of economic assumptions considered to be non-hedgeable.
Sumitomo Life Group	Not disclosed	Cost of capital	2.50%	Operational risk, unavoidable market risk, uncertainty risk of non-economic assumption and the risk from uncollectibility of carrying loss on tax accounting basis are explicitly disclosed.
T&D Holdings	Economic capital (calibrated to a 99.5 percentile value at risk over one year)	Cost of capital	2.50%	An allowance for the impact of extreme events as operational risk, catastrophe risk, reputational risk, other asymmetric impact of non-economic assumptions, the risk of unrecoverable tax losses and non-hedgeable financial risks. Also an allowance for additional uncertainty which is not included in the elements above is considered.
TMN Anshin	Economic capital (calibrated to a 99.95 percentile value at risk over one year)	Cost of capital	5.75%	An allowance for the uncertainty of non-economic assumptions and the portion of economic assumptions considered to be non-hedgeable.

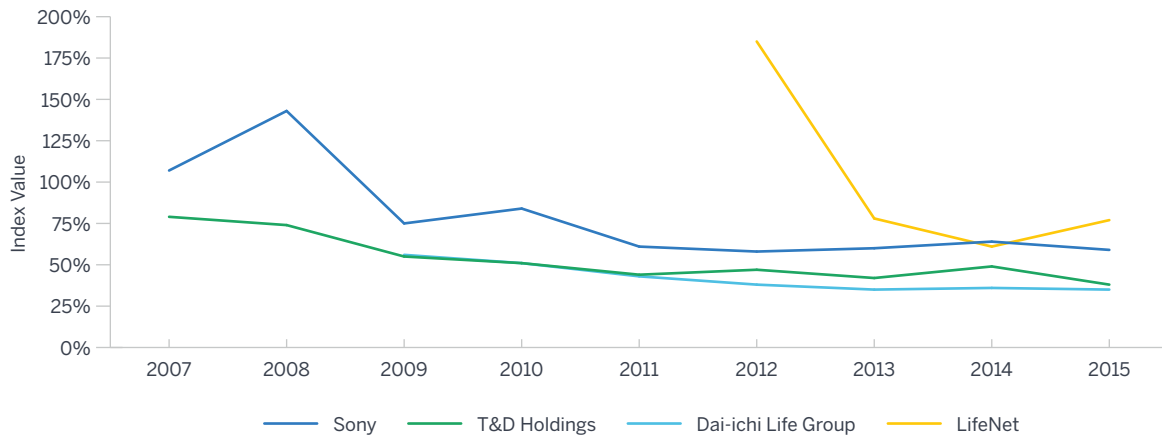
Source: Embedded value disclosures

⁹ At 99.5 percentile value at risk.

MARKET CAPITALISATION

Market capitalisation for Japan’s large listed life insurers declined precipitously in fiscal 2015, particularly in December and January, as it became clear that the BOJ intended to ramp up financial market interventions in an effort to stoke a stable but slow growth economy. Figure 12 shows the trend in market cap to embedded value for listed companies from the time of the financial crisis. For the three large companies, these ratios have been quite stable from 2011 through 2015, seeming to languish in a range of 35% to 60%. Even LifeNet, which listed to some fanfare in 2012, has seen its ratio fall well below 100%, a rather stunning reflection of investor sentiment as it regards the potential for innovation in Japan’s life insurance sector.

FIGURE 12: JAPANESE LISTED LIFE INSURERS – TREND IN MARKET CAPITALISATION TO EMBEDDED VALUE



Note: For Sony, market cap reflects Sony Financial, while embedded value is that for Sony Life, the largest contributor to Sony Financial value.
 Source: Nikkei Kaisha Jouhou, Financial Reports and embedded value disclosures.

The table in Figure 13 describes some of the possible reasons for the low ratios of market capitalisation to EV among Japanese companies.

FIGURE 13: POTENTIAL REASONS UNDERLYING THE LOW RATIOS OF MARKET CAPITALISATION TO EMBEDDED VALUE FOR JAPANESE LISTED LIFE INSURERS

REASON	EXPLANATION
Low Discount Rates and Long-Tail Profits	Some analysts and potential investors may be concerned that the low risk-free rate used to discount long-tail profits leads to an overstatement of value, especially on highly profitable protection business. While the low discount rate should be compensated for by the CRNHR and other elements underlying market-consistent reporting, investors may not fully understand the methodology or may believe that the CRNHR is understated.
Fear of Price Competition	Japanese company mortality and morbidity margins exceed margins that can be earned in many of the developed markets on broadly similar business. Investors likely fear growing price competition.
Saturated Market	The Japanese population is highly insured; the potential size of the market may be declining because of Japan’s declining population and workforce. Combining this concern with the fear of price competition, investors may place little value on new business.
Possible Understatement of the Cost of General Account Options	Insurance companies offering book value withdrawals on traditional savings products face potentially severe disintermediation risk. A material increase in interest rates will certainly lead to an increase in lapses. Though it is difficult to model policyholder behaviour, if rates were to return to historical norms, the market may experience materially increasing lapses. In addition, whilst most companies now believe that liability durations exceed the durations of their asset portfolios, it is not difficult to envision scenarios where this relationship is reversed. Japanese companies may be exposed to material balance sheet risk, and this may be depressing market capitalisations. Though guarantees entail disintermediation risk, in the current low or negative rate environment, lapse rates have been very low, increasing negative spreads on some blocks. Policyholders clearly recognise the value of guarantees and are behaving ‘rationally.’
Broader Macroeconomic Concerns	The low valuation of Japanese life insurers likely reflects general market concern, in particular concerns over Japan’s economy, demographics, global competition, and the prospects for ‘Abenomics’.
Limited Market Acceptance of Embedded Value as a Performance Measure	Analysts may not fully accept or understand the approach. Results have been volatile, which is due both to volatility in life insurer balance sheets and to the impact of fluctuating market interest rates. In spite of the low ratio of market capitalisations to embedded values, price-earnings ratios are rather high. Confusion over this disconnect may be depressing insurer values.

MARKET-CONSISTENT METHODOLOGIES IN AN ERA OF CENTRAL BANK INTERVENTION

Market-consistent methods aim to value all insurer assets and liabilities using methods that parallel the manner in which markets value tradable assets. A primary goal in developing methods and disclosure requirements is to facilitate comparability among reporting companies.

In this era of extreme central bank market interventions, it is interesting to ask what ‘market-consistent’ means. What is the market, and to what extent is it determined or distorted by central bank interventions? It is only somewhat tongue in cheek that we ask the following question: In the current environment, are we calculating market-consistent values, or is it more accurate to say that we are determining ‘central bank consistent embedded value?’ This is a serious question when the Bank of Japan has acquired one third of outstanding JGBs and may be on a course to own half or more. How long will current policy be sustainable? Forecasts of a post-interventionist world are speculative. Companies arguing in favour of employing an ultimate forward rate (UFR) might point to the unsustainability of current BOJ policy, and a view that long-term yields will revert to historical norms.

There are in fact many market factors that underlie current low rates. Even without dramatic central bank interventions, it is likely that rates would currently be at or near historical lows. But what do negative rates mean? Do investors buying bonds with negative yields expect long-term deflation and therefore a positive real return over the long run? Is a small negative yield a cost of holding assets that are otherwise secure? Or, are yields negative simply because the BOJ is willing to buy bonds at a premium over prices that would arise in an unfettered market?

What does it mean to discount liability cash flows at negative rates? If current market rates are negative and a relatively secure profit can be generated, for example, from mortality or morbidity margins, is this profit more valuable if it is received in the future than if it is received today? One can certainly justify an affirmative answer to this question, though it ‘feels’ strange. Intellect and intuition collide.

In this strange era, companies are naturally struggling to present embedded values that are consistent with a market-consistent philosophy, compatible with their own risk management and measurement philosophies, and provide useful information to interested parties.

Issues being discussed include extrapolation of rates, methods for determining the cost of non-hedgeable risks, and appropriate assumptions and timing for new business valuation.

These are all difficult issues. With respect to extrapolation of rates, given that the goal is market consistency, an essential question becomes ‘How credible is the market information embedded in the longer points of the yield curve?’ In an era of exceptionally low rates, cash flows that are projected 40, 50 or 60 years into the future can have a material impact on current reported value. In a more ‘normal’ rate environment, cash flows at these durations may modestly impact results in the present, but the impact will be diminished significantly by discounting. In a zero rate environment, a cash flow 50 years from now will have the same impact as a cash flow today. Though the market-consistent framework should adjust for this oddity through capital cost mechanisms, projecting uncertain liabilities and determining appropriate capital allocations 50 years into the future is a tall order.

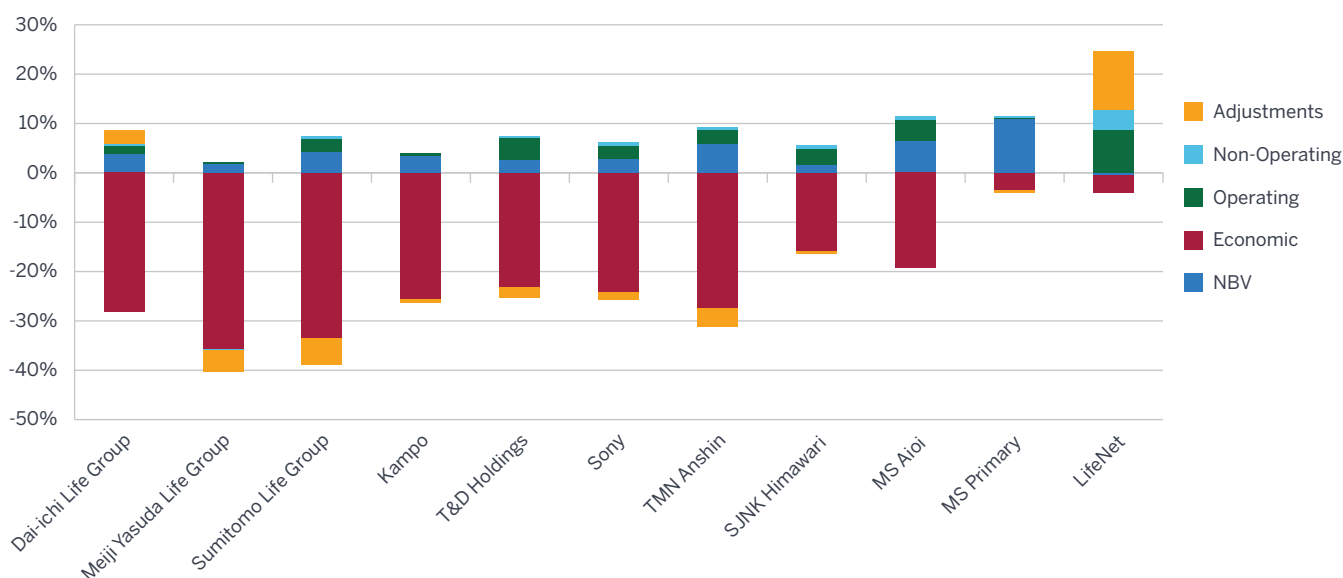
In this environment, EV reporting may be more valuable than ever. A company trying to price its products needs to navigate this strange environment. Reserving, capital allocation and risk management require a careful consideration of these issues. Market-consistent approaches will continue to provide value to management, analysts and other interested parties, as long as companies explain methods with impeccable transparency and offer sensitivity and cash flow information beyond that which is required under CFO Forum principles.

KEY DRIVERS OF VALUE

What are the key drivers of value? What can we expect in future years?

The graph in Figure 14 decomposes the change in embedded value from fiscal 2014 to fiscal 2015 for each of the reporting companies. Each component is expressed as a percentage of beginning year embedded value, so that the sum of the components for a given company is the percentage increase or decrease in embedded value over the course of the year.

FIGURE 14: BREAKDOWN OF CHANGE IN EV FROM FISCAL 2014 TO FISCAL 2015



Source: Embedded value disclosures, prior to any restatements.

Figure 14 dramatically illustrates that economic variances were the most significant factor driving embedded values in fiscal 2015. Insurers are in the business of accepting risk, and can never fully shield themselves from risk. Even for companies that have adopted tight asset-liability management (ALM) controls, negative rates and other market disturbances have led to declining values.

In spite of the harsh environment, most companies added value through new business activities in fiscal 2015, as was shown in Figure 8 above. Though the numbers in Figure 15 need to be reviewed with some caution, we have calculated the ratio of new business value to beginning year EV for FY2014 and FY2015. This ratio reflects the volume and profitability of new business, relative to starting EV.

FIGURE 15: RATIO OF NBV TO EV AT YEAR-END 2015 AND 2014

COMPANY	RATIO NBV TO BEGINNING YEAR EV (%)	
	FY2015	FY2014
Dai-ichi Life Group	3.7	6.4
Meiji Yasuda Life Group	1.7	5.3
Kampo	3.4	4.0
Sumitomo Life Group	4.2	4.9
T&D Holdings	2.4	4.7
Sony	2.7	4.0
TMN Anshin	5.8	7.8
SJNK Himawari	1.6	4.7
MS Aioi	6.3	8.6
MS Primary	10.9	11.2
LifeNet	-0.4	0.4
Average	3.3	5.3

Source: Embedded value disclosures, prior to any restatements.

Naturally one would expect lower ratios for the more mature companies. After adjusting for this factor, we find a correlation between sales of profitable medical business and higher new business value ratios. As sales mix changes from year to year, this ratio can exhibit a fairly substantial degree of volatility.

For several years up until fiscal 2015, the growth in embedded value attributable to new sales had been approximately 5.3% for the overall industry. This declined to about 3.3% in the most recent fiscal year, in large part due to the harsh financial market environment. Pressure on new business value is likely to persist. Although the industry has some room to reprice in the face of historically low interest rates, it is very hard to sell yen denominated investment-oriented products given current market conditions. Over the past decade, the Japanese life insurance industry has moved away from these products, towards risk coverage, low cash value products, variable products and products denominated in foreign currency. Compared to insurers in other developed markets, Japanese life insurers have dealt with and adapted to relatively low interest rates for well over a decade. The current situation, however, is extraordinary. If it persists, companies will need to reinvent themselves, and reflect hard on the nature of their services and customer value propositions.

Companies should not be lulled into the expectation that interest rates will remain low forever. Unless we are witnessing an epic change in the nature of capital formation and capital markets, rates will definitely rise. When this happens, it will test the resourcefulness and resiliency of life insurer marketing and risk management functions. But Japan's insurers reinvented themselves after the post-bubble trauma. They have since dealt with a global financial crisis and a long period of low rates. Undoubtedly, they can reinvent themselves once more.



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