

## Rating Methodology by Sector

### **Life Insurance**

The following mainly applies to life insurance companies in Japan. The credit ratings of a life insurance company is assessed by focusing on the characteristics of its life insurance business, business base, management team, management policies, financial performance, investment, liquidity, capital adequacy, financial flexibility, and risk management. JCR applies this rating methodology with the necessary changes in the indicators for analysis to overseas life insurance companies and insurance groups, based on laws, accounting system, financial administration in which these entities are located.

#### **1. Business base**

##### (1) Characteristics of the industry

While total amount of insurance in force with respect to death benefit products, which were core earnings sources for life insurance companies traditionally, has been on the decline against the background of aging society with fewer children, needs for protection with respect to risk of longevity such as third sector insurance and annuity products have risen. As a result, product mix for life insurance companies has been changing gradually.

In addition to entry barriers to life insurance business as shown by its license system, in cases where complicated and long-term protection insurance products are sold through a channel representing one insurance company exclusively, it is difficult to compare products and price competition is not likely to occur. Meanwhile, sales by comparison by insurance agencies representing multiple insurance companies, which are emerging channels, can more easily cause competition, placing downward pressure on profitability of life insurance companies gradually.

Policies in force of death benefit products can generate relatively stable cash flow by avoiding high investment risk while maintaining the amount of policies required to benefit from the law of large numbers, based on rigid underwriting standards. On the other hand, if operations are inconsistent with the appropriate management of insurance liabilities, such as inadequate management of interest rate risks, a loss margin on long-term life insurance products may put pressure on profitability. The quality of asset liability management affects a company's levels and stability of earnings and cash flow.

While there is growth potential in third sector insurance products against the background of the increasing social needs for these products, these products should be designed based on appropriate risk management in addition to safety margins because of uncertainty about incidence rate of insured events.

As for investment insurance products, insurance-related profit or loss on such products is limited and profitability is low. Variable annuities with guaranteed minimum benefits have a complex risk profile, and ensuring future earnings from such products may not be easy, given the rapid increase in

market risk volatility without adequate preparations for risk management.

Life insurance companies are supervised by the Financial Services Agency and required to calculate their solvency margin which indicates the adequacy of their risk buffer. Although the solvency margin ratio contributes to the promotion of risk management of life insurance companies to a degree, there have been some life insurance companies that have gone bankrupt with a solvency margin ratio exceeding 200%—the threshold rate where prompt corrective measures are taken. The calculation standards for the solvency margin ratio will be revised in the future, which is expected to facilitate an understanding of true level of financial soundness.

The insurance policies of the failed insurance company may be continued through policy transfers, mergers, and stock acquisition by another insurance company. Policy reserves, however, are reduced in some cases. Excluding policies with high assumed interest rates, up to 90% of policy reserves at the time of bankruptcy are compensated for by the Life Insurance Policyholders Protection Corporation of Japan, and the remaining 10% are determined based on reorganization strategies. The policy conditions may be revised, such as in assumed interest rate and policy reserve reductions. Part of the funding of the Life Insurance Policyholders Protection Corporation of Japan comes from sound life insurance companies' contributions, and any bankruptcy imposes a certain financial burden on those sound life insurance companies.

## (2) Important factors in market position and competitiveness

Such factors as customer base, product composition, market characteristics, sale channel system, conditions of business diversification, and conditions of niche markets are analyzed to forecast future performance. Examples of sources of competitiveness include brand power that can promote customer trust, high business efficiency that can maximize price competitiveness without sacrificing profitability, and a sales channel that can provide access to superior customers.

JCR places high values on profitability, risk profile and conditions of diversification of product portfolio when making analysis of a product. In general, those products that facilitate capital accumulation through long-term stable earnings are more positively assessed than those products whose earnings are highly volatile. Insurance products are not patented, and development of best-selling products is often imitated by competitors. Differentiation based on salability is, thus, not easy.

For life insurance companies, economies of scale may allow a business base strengthening that involves large IT investments. If competing life insurance companies sell products of the same types, business efficiency higher than that of other companies based on economies of scale may become a source of competitiveness. The unit cost of each insurance company, therefore, is also analyzed.

Meanwhile, the scale does not guarantee success. Niche players in specific markets that are capable of defending themselves from competitors may increase their earnings strength in the future. There may be cases in which the high added value of products and services is increased by effectively and flexibly providing policy coverage and services that appeal to a specific customer base or sales channel to

acquire policyholders with specific needs without sacrificing the risk-adjusted returns.

Sales channels are analyzed based on the strength of their connection with specific life insurance companies in each channel, conditions of diversification, cost efficiency, and other perspectives. Whether the life insurance companies to be analyzed are continuously acquiring high-quality insurance policies from each sales channel under adequate internal management is assessed.

### (3) Management strategy and policy

Strategy development and performance by the management team are carefully studied. An understanding of the management strategy allows more in-depth evaluation than simple quantitative analysis. Allocation of management resources is an internal factor that can be controlled by management and has an impact on competitive strength, profitability and financial strength of each company. From the viewpoint of the details of its strategy, the effectiveness of the business, the durability against financial risk, and other such matters, the validity of management vision, ability to execute strategy, and other skills are analyzed. In addition to an appropriate understanding by management of risks, whether or not a culture placing emphasis on risk management takes root in the organization is an important point.

## 2. Financial base

### (1) Performance and earnings strength

In evaluating financial performance, JCR focuses on the ability of an insurance company's strategy to connect competitiveness with profitability as well as financial results, growth potential, and quality. JCR also pays attention to sales activities. Given that sales of whole life medical insurance products in addition to conventional death benefit products have been on the rise in recent years, JCR makes an analysis of business performance based on multiple indicators including total amount of insurance in force, annualized premiums, and total assets.

JCR's income analysis includes past earning trends, future earnings, and the stability and quality of earnings. For participating policies (with-profits policies), policyholder dividends are considered as a cost of acquiring customers, and profit after payment of policyholder dividends is taken as criteria for profitability. Additional information on transfer to and reversal of policy reserves associated with variable annuities with guaranteed minimum benefits is analyzed, including an analysis of adjusted and unadjusted basic profit; analysis of mortality, interest, and expense gains; analysis of factors that increase or decrease MCEV\* or Market Consistent Embedded Value; and sensitivity analysis associated with MCEV.

\*MCEV: One of the indicators of enterprise value and performance used by life insurance companies.

It is a total value of "modified net assets" calculated from balance sheet and off-balance unrealized gains or losses and "value of policies in force," which is present value of future

profits generated by the policies in force.

An insurance company's earning capacity helps strengthen the capital through internal reserves, one of the major rating viewpoints in evaluating its financial base. Many management teams use income indicators for major strategic targets, and the appropriateness of such targets and the ability to execute strategy, i.e., the capabilities of the management, are likely to affect earnings.

In making analyses, JCR considers a company's future performance, in which the possibility of changes in the income structure brought about by changes in the industry environment and management strategy, in addition to past business performance trends, is considered. Given the cases where variable annuities with high underwriting risk have been sold largely before Lehman Shock, JCR focuses on risk-adjusted returns of high-risk products and considers the effect of them on earnings and financial standing.

For indicators for earnings power, JCR refers to financial results and future profit analysis. Analysis of investment-related profit or loss concentrates on interest income from interest-bearing bonds while paying also attention to assumed interest rates.

JCR makes an analysis of insurance-related profit or loss including insurance revenue, payments for insurance claims, annuities, benefits, cash surrender value, transfer to and reversal of policy reserves, and expense payments. In addition to focus on mortality gains from death benefit products and third sector insurance, JCR also pays attention to changes to the cost structure, policy retention rate, price policy, and other factors for expense gains or losses. For medical and nursing care insurance, there might be more cases than cases for death benefit products where an actual incidence rate is differ from the expected incidence rate based on the past data against the background of progress in medical technology and changes to various systems related to medical and nursing services. For whole life medical insurance products and whole life nursing care insurance, it is necessary to set an expected incidence rate in consideration of normally anticipated events such as a rise in incidence rate according to the aging. If these products are not designed to cope well with a risk of higher actual incidence rate than the expected incidence rate, profits from these products might be lower in future years than assumed initially. JCR therefore focuses on scenario tests for incidence and the results of such scenario tests, and refers to them when making an analysis.

In cases where savings insurance products are sold by agencies of financial institutions, JCR focuses on sensitivity of the products to changes to economic and financial environments and the investment related to the sensitivity. JCR also focuses on scenario tests based on characteristics of risks for the products sold through channels described above and the results of such scenario tests, and refers to them when making an analysis.

Key financial indicators:

- Basic profit
- Mortality gains / losses

- Operating profits / losses
- Investment profits / losses
- Factors of increase/decrease in value of policies in force and sensitivity (referred when available)
- Investment-related profits / losses
- Total amount of insurance in force
- Annualized premiums
- Total assets

(2) Risk profile, such as asset quality

Life insurance companies carry a certain level of investment risk based on the business characteristics that facilitate forecasts of payments of key product premiums, and each company has a different asset allocation as well as risk profile and returns on each asset. JCR analyzes whether companies carry out asset management with a controllable risk profile and ensure risk-adjusted returns while controlling interest rate risks through investment appropriate for the debt characteristics. Considering that risk profiles and investment returns vary depending on the investment style or type of working assets, such factors as techniques of asset liability management and risk management, and composition of working assets are also analyzed. Working assets are evaluated in view not only of asset quality but the effect of diversification and other aspects.

(3) Liquidity

Liquidity is analyzed based on whether it allows prompt payment of insurance benefits in a stress scenario, taking into account the risk of price fluctuations. Liquidity is affected by such factors as the composition of working assets, deduction of cancelled products, presence of fair value adjustment function, sales channels, and customer base. JCR takes into account an analysis of cancellation behavior with respect to a phase of an increase in interest rates in light of ALM system of each company. For example, it should be reminded that cancellation behaviors of policyholders might differ when savings insurance products were sold through sales staff channel from such behaviors when these products were sold through agencies such as financial institutions.

Key financial indicators:

- Liquidity levels (of cash and cash equivalents, government bonds, etc.) and component ratio of major assets

(4) Capital adequacy

In addition to making an analysis of capital adequacy of real equity capital in light of an assessment of market value of assets and liabilities combined (based on economic value), JCR refers to indicators under the current regulations. JCR takes into consideration investment risk, underwriting risk and operational risk when evaluating capital adequacy of real equity capital. JCR also pays attention to an

interest rate risk of assets and liabilities combined based on an internal model of each insurance company. As assessment methods of market value of assets and liabilities combined are not considered the same completely among individual companies, JCR makes analyses of various figures in terms of internal control while also paying attention to characteristics of calculation method of each company.

JCR takes into consideration the following as items constituting a modified equity capital when referring to the indicators under the current regulations: Excess of cash surrender value over policy reserve in light of economic value of contracts with negative spread as much as possible, part of valuation difference on securities, accumulated redeemed foundation funds, reserve for redemption of foundation funds, reserve for price fluctuations, contingency reserve, unappropriated reserve for policyholder dividends, and other legal reserves in addition to surplus (after deduction of distributed income) and accumulated redeemed foundation funds for a mutual company or capital stock and capital surplus for a joint-stock company. A stress test of unrealized profits and losses on stocks is performed in addition to the financial results of a single year. Hybrid securities, which combine the elements of liabilities and capital, are also taken into the analysis of capital adequacy. With respect to risk quantity, in case of price fluctuation risks related to stocks, for example, a risk coefficient based on volatility is given that takes into account changes in stock prices over a long period of time.

Key financial indicators:

- Equity ratio

#### (5) Financial flexibility

The ability to flexibly raise funds in various markets when a large amount of capital is needed is assessed. Additionally, when a company has a large amount of unrealized gains, JCR focuses on whether it can realize such gains without impairing its business. The ability to create future internal reserves is also a positive factor in financial flexibility.

#### (6) Risk management system

How much the management strategy primarily for profit and risk management has penetrated into the entire company is assessed. More specifically, the level of penetration and sharing of risk preferences consistent with the internal risk tolerance, improvement of risk management and control system on top management's initiative, the internal system incorporating the risk control process, and efforts to raise risk awareness at the business unit level are among the aspects to be evaluated. The status of risk governance is also analyzed from the perspective of governance and organizational structure of risk management functions. Further, the internal unity of the risk management system, appropriateness of risk measuring and monitoring, alert level for each type of risk, and maximum limit for risk are also evaluated. JCR analyzes each insurance company's responses to the appearance of unexpected risk in view of timely detection and control of newly emerging risk and how it applies the lessons learned from the emergence of new risk.



The allocation of required capital and economic capital to each risk, strategic measures based on indicators of economic risk and returns, an understanding of the effect of strategic measures on the regulatory required equity capital, a strategic asset allocation within the range of risk tolerance specified in advance, risk-adjusted pricing based on the study of risk and returns of insurance products, the suspension of sales or re-pricing of insurance policies in response to a deviation of the results of risk and return analysis from the initial assumptions, and a capital plan based on the process of optimizing decisions on risk and returns are some of the criteria for evaluating the strategy for optimization of risk-adjusted returns.

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