

Risk-Based Capital General Overview

Overview

The NAIC risk-based capital (RBC) system was created to provide a capital adequacy standard that is related to risk, raises a safety net for insurers, is uniform among the states, and provides regulatory authority for timely action. A separate RBC formula exists for each of the primary insurance types: Life, Property/Casualty, and Health. Each formula utilizes a generic formula approach rather than a modeling approach, although the Life RBC Formula has recently incorporated some modeling related to interest rate risk.

As a generic formula, every single risk exposure of a company is not necessarily captured in the formula. The formula focuses on the material risks that are common for the particular insurance type. For example, interest rate risk is included in the Life RBC formula because the risk of losses due to changes in interest rate levels is a material risk for many life insurance products. Investment and other asset risks, on the other hand, are experienced by all insurers and so are included in all three formulas. Investment risk includes: default of principal and/or interest for bonds and mortgage loans, default and passed dividends for preferred stock, decrease in fair value for common stock and real estate. Other asset risks included in the formulas cover credit risk and concentration risk.

The generic formula setup typically pulls an amount from the statutory financial statement and assesses a factor to calculate an RBC risk charge. The factors are based upon relevant statistics, for example bond default rates were used to establish the factors assessed against the six credit quality designations of bonds (1 being highest quality with a minimal factor, and 6 being lowest quality with the highest factor). The calculation of an RBC risk charge is performed for every individual risk item included in the specific RBC formula.

The NAIC Risk-Based Capital system has two main components: 1) the risk-based capital formula, that establishes a hypothetical minimum capital level that is compared to a company's actual capital level, and 2) a risk-based capital model law that grants automatic authority to the state insurance regulator to take specific actions based on the level of impairment.

The NAIC's Risk-Based Capital for Insurers Model Act (Volume II-312) applies to Property/Casualty and Life insurance companies. This Model Act is an NAIC accreditation standard, most U.S. insurance jurisdictions have adopted statutes, regulations or bulletins that are substantially similar to the NAIC Model Act 312. The Health Organizations Model Act (Volume II-315) applies to Health insurance companies. This Model Act is not currently an NAIC accreditation standard but well over 30 U.S. insurance jurisdictions have adopted statutes, regulations or bulletins that are substantially similar to the NAIC Model Act 315.

Results of the RBC Calculation

A completed RBC calculation of a company is considered confidential and not available to the public. However, the overall results of the RBC calculation are reported on the Five-Year Historical Data Page of the Statutory Annual Statement. In addition, the formulas that companies use to calculate the RBC would be available from the Publications area of the NAIC Store.

http://www.naic.org/store_pub_accounting_reporting.htm#rbc_forecast

The two amounts reported on the Five-Year Historical Data Page are:

1. Total Adjusted Capital (actual amount of capital and surplus the company has)
2. Authorized Control Level Risk-Based Capital (1 of 4 levels of calculated minimum capital)

The Risks:

Separate risk-based capital models apply to Life companies, Property/Casualty companies and Health organizations. These different formulas reflect the differences in the economic environments facing these different companies. Some common risks identified in the RBC models include:

1. Asset Risk – Affiliates,
2. Asset Risk-Other (including credit risk, interest rate risk, and market risk)
3. Underwriting Risk or Insurance Risk
4. Business Risk.

Components of the Life risk-based capital formula include C0 – Asset Risk – Affiliates; C1 – Asset Risk – Other; C2 – Insurance Risk; C3 – Interest Rate Risk, Health Credit Risk, and Market Risk; C4 – Business Risk. The Property/Casualty and Health formulas take a slightly different approach to each of these components to reflect the differences in risks associated with the different insurance types. Components of the Property/Casualty risk-based capital formula include R0 – Asset Risk – Subsidiary Insurance Companies; R1 – Asset Risk – Fixed Income; R2 – Asset Risk – Equity; R3 – Asset Risk – Credit; R4 – Underwriting Risk – Reserves; R5 – Underwriting Risk – Net Written Premium. Components of the Health risk-based capital formula include H0 – Asset Risk – Affiliates; H1 – Asset Risk – Other; H2 – Underwriting Risk; H3 – Credit Risk; H4 – Business Risk.

Asset Risk – Affiliate

The asset risk – affiliate is the risk of default of assets for affiliated investments. The risk-based capital requirement of downstream insurance subsidiaries owned by the insurer is calculated based on the Total Risk-Based Capital After Covariance of the subsidiary and then prorated based on the percent of ownership. The RBC requirement for other subsidiaries (those affiliates not subject to RBC, such as, title insurers, mono-line financial guaranty insurers and mono-line mortgage guaranty insurers) is calculated based on a set factor. The parent company is required to hold an equivalent amount of risk-based capital to protect against financial downturns of affiliates. Off-balance sheet items are included in this risk component and these include non-controlled assets, derivative instruments (for Life companies only), guarantees for affiliates, and contingent liabilities.

Asset Risk – Other

The risk represents the potential for default of principal and interest or fluctuation in fair value of assets. Fixed income assets include bonds, collateral loans and mortgage loans, short-term investments, cash, and other long-term invested assets. Equity assets include unaffiliated common and preferred stock, real estate, and long-term assets. All insurance companies are subject to an asset concentration factor that reflects the additional risk of high concentrations in a single issuer.

Insurance Risk/Underwriting Risk

Insurance risk for Life companies is the equivalent of the underwriting risk for Property/Casualty and Health companies. The life insurance risk factors calculate the surplus needed to provide for excess claims; both from random fluctuations and from inaccurate pricing for future level of claims (e.g. experience fluctuation risk). Property/casualty companies calculate underwriting risk for reserves and premiums. These calculations reflect the risk of pricing and reserving errors. Because reserves for various types of business possess different frequency and severity characteristics, the formula applies separate factors to each major line of business. These factors are adjusted for company experience and investment potential. The Underwriting Risk for Reserves and Premiums Written are calculated in much the same manner, by multiplying a set of factors times the reserves or the net written premiums. The predominant risk faced by Health companies is that medical expenses will exceed the premiums collected. The Health formula recognizes that larger blocks of business will have relatively less fluctuations; therefore, tiered factors are used to recognize the increased stability that comes with higher volume. The Health formula also includes an adjustment to recognize the beneficial effect of managed care arrangements in decreasing the fluctuations in medical expenses. Managed-care credits reduce the base underwriting risk for each of the major lines of business. Property/Casualty and Health insurers also calculate excessive growth. This calculation recognizes that companies that grow rapidly may have greater reserve deficiencies.

Interest Rate Risk (Life Insurers Only)

The interest rate risk encompasses the risk of losses due to changes in interest rate levels. The factors in this calculation represent the surplus necessary to provide for a lack of synchronization of asset and liability cash flows. The impact of interest rate change is greatest on those products where the guarantees are most in favor of the policyholders and where the policyholder is most likely to respond to changes in interest rates by withdrawing funds from the insurer. Therefore, risk categories vary by the withdrawal provision (i.e. whether there is substantial penalty for withdrawal).

Business Risk (Life & Health Insurers)

Business Risk for Life insurers is based on premium income, annuity considerations and separate account liabilities. Also, included in business risk exposures is litigation, expenses relating to certain Accident and Health coverages and ASO and ASC expenses. However, Business Risk for Health insurers consists of the following sub-components: Administrative Expense Risk (variability of operating expenses), Non-Underwritten and Limited Risk (collectability of payments for administering third party programs), Guaranty Fund Assessment Risk and Excessive Growth. These sub-components recognize that instability can result from poor controls on administrative expenses as well as from instability in medical expenses.

The Formulas

The formulas apply a covariance calculation to determine the appropriate risk-based capital. Simply stated, the covariance calculation reduces the aggregate amount of RBC because it is unlikely that all of the risk components will be impaired simultaneously.

Life Covariance Calculation = $C0 + C4a + \text{Square Root of } [(C1o + C3a)^2 + (C1cs + C3c)^2 + (C2)^2 + (C3b)^2 + (C4b)^2]$

P/C Covariance Calculation = $R0 + \text{Square Root of } [(R1)^2 + (R2)^2 + (R3)^2 + (R4)^2 + (R5)^2]$

Health Covariance Calculation = $H0 + \text{Square Root of } [(H1)^2 + (H2)^2 + (H3)^2 + (H4)^2]$

The levels of regulatory action are determined from the risk-based capital after covariance. The covariance adjustment reflects the fact that the cumulative risk of several independent, components is less than the sum of the individual risk. The formulas do not include the insurance affiliate equity investment risk and off-balance sheet risk inside of the covariance adjustment. The covariance adjustment follows the steps of adding together items that are believed to be correlated, leaving the balance of risks that not correlated. The covariance adjustment then squares these resulting groups, adds the resulting squares together and takes the square root of the sum of the squares. The covariance adjustment reduces the volatility of the smaller risks and increases the importance of the largest risks affected by the adjustment.

Action Levels

There are five outcomes to the RBC calculation which are determined by comparing a company's Total Adjusted Capital to its Authorized Control Level Risk-Based Capital. The level of required risk-based capital is calculated and reported annually. Depending upon the level of the reported risk-based capital, a number of remedial actions, if necessary, are available as follows:

1. No action:
Total Adjusted Capital of 200% or more of Authorized Control Level results in "no action."
2. Company Action Level:
Total Adjusted Capital of 150 to 200% of Authorized Control Level results in Company Action Level under which the insurer must prepare a report to the regulator outlining a comprehensive financial plan that identifies the conditions that contributed to the company's financial condition. This Plan must contain proposals to correct the financial problems and provide projections of the financial condition, both with and without the proposed corrections. The Plan also must list the key assumptions underlying the projections and identify the quality of, and the problems associated with, the insurer's business. If a company fails to file this comprehensive financial plan, this failure to respond triggers the Regulatory Action Level.

3. Regulatory Action Level:

Total Adjusted Capital of 100 to 150% of Authorized Control Level triggers a Regulatory Action Level. At this level, an insurance company is also required to file an action plan, and the state insurance commissioner is required to perform any examinations or analyses to the insurer's business and operations that he or she deems necessary. The state insurance commissioner also issues appropriate corrective orders to address the company's financial problems.

4. Authorized Control Level:

Total Adjusted Capital 70 to 100% of the Authorized Control Level triggers an Authorized Control Level. This is the first point that the regulator to take control of the insurer. This authorization is in addition to the remedies available at the higher action levels. It is important to note that the law grants the insurance commissioner this power automatically. This action level occurs at a point where the insurer may still be technically solvent.

5. Mandatory Control Level:

Total Adjusted Capital of less than 70% triggers a Mandatory Control Level that requires the regulator to take steps to place the insurer under control. This situation can occur while the insurer still has a positive level of capital and surplus; although a number of companies that trigger this action level are technically insolvent (liabilities exceed assets).

Trend Test

Life

Companies whose total adjusted capital is between 2.0 and 2.5 times their Authorized Control Level of Risk-Based Capital are subject to a trend test. The trend test calculates the greater of the decrease in the margin between the current year and prior year and the average of the past three years. The assumption is that the decrease could occur again in the coming year. Any company with a negative trend below a certain level would trigger a company action level event.

Property/Casualty

An RBC ratio between 200 and 300% and a combined ratio greater than 120%, triggers a company action level event if the Property/Casualty trend test has been enacted in the regulations by the particular jurisdiction(s) the company is domiciled or licensed.

Health

Starting with year-end 2009 RBC, the Health formula will also contain a trend test. If the RBC ratio is between 200 and 300% and a combined ratio greater than 105%, a company action level event will be triggered if the Health trend test has been enacted in the regulations by the particular jurisdiction(s) the company is domiciled or licensed in.