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RISK-SENSITIVE EARLY WARNING AND PERFORMANCE RATIOS

"DRAFT VERSION FOR FIRST REVIEW ONLY"

Submitted to:

Minstry of Finance and Economy
Head of Insurance Department
Republic of Armenia

Submitted by:

BearingPoint
1676 International Drive
McLean, VA 22102
USA

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Risk-Sensitive Financial Report

Three things can cause an insurance company to become insolvent:

- Poor management
- Poor investments
- Poor underwriting

These ratios attempt to compare, through objective means, certain financial information which reflects the performance of a company's management, investments and underwriting relative to standards of performance necessary to maintain future solvency.

While the tests themselves are objective, the interpretation of the results will require subjective analysis. Below both the objective utility of the ratios as well as some of the analytical judgments, which will be necessary, to properly use of the ratios are discussed.

1. CHANGE IN NET WORTH.

The trend of an insurers' net worth[1], as well as its absolute magnitude, is a fundamental measure of a company's financial condition. More than any other indicator, it measures objectively the performance of management, investment operations and insurance underwriting.

Definition:

- **Net Worth, Current Period – Net Worth, Prior Period DIVIDED BY Net Worth, Prior Period**

We suggest that values between 0% and 15% for this ratio should be considered normal; in other words, further investigation would be warranted if the figure were outside this range. For example, any company experiencing a loss in net worth between years and particularly as a trend is in a financial position which makes it less able to absorb further deteriorations in net worth, be it from poor underwriting experience, poor investment performance, lack of oversight of the sales force (perhaps causing high lapse rates) or administrative expenses which are not adequately controlled.

On the other hand, an increase in net worth which is in excess of the usual range may reflect, for example, a bulk-reinsurance arrangement leading to an initial large in-flow of cash but providing also for continuing obligations to service the business.

[1] "net worth" mean assets minus liabilities

Of course, there may be non-distressing explanations for unusual values (say, the issue of new shares). It is for the analyst to use this ratio as a signal that he should look more deeply into the company's operations. If the financial statements taken as a whole do not provide an explanation, then further inquiry would be merited.

Finally, care must be taken in reviewing all of the items that comprise this account. For example, a company may exhibit a result within normal limits, but there may have been a large unrealized gain on investments' that prompted the company to pay a corresponding dividend to its shareholders. Of course, a payment of cash dividends based upon unrealized gains would be imprudent and be indicative of improvidence and misunderstanding of the nature of statutory accounting. Also, since dividends are ordinarily paid in the next succeeding year, the analyst should always utilize the prior period data in evaluating the results of this test.

2. INCREASE IN PREMIUMS.

Generally speaking, insurance companies should be increasing their volume of insurance business. A company that is losing premium volume is often a problem for regulators.

This ratio provides a gauge by which we can assess the ability of management to control growth.

Definition:

- **Net Premiums[2], Current Period – Net Premiums, Prior Period DIVIDED BY Net Premiums, Prior Period**

Further investigation would be warranted if the increase is outside the range 0-20% for the year. A figure of less than 0% for a company in what is likely to be a growing industry would indicate stagnation, perhaps because of internal management problems or dissatisfaction on the part of existing policyholders leading to high lapse rates. As noted above, growth exceeding 20% may possibly indicate that the company is trying to increase its market share rapidly at the risk of its future solvency.

Again, this ratio must be viewed in the context of the company's over-all financial position and its ability to absorb new business costs (use of the solvency margin is of particular utility in this case). The relative maturity of the company must be considered since a newly formed insurer will ordinarily have unusual values in its early years. However, even (and, perhaps, especially) new insurers can grow too fast.

[2] "Net Premiums" refers to all Premium net of reinsurance.

Finally, the lack of an Armenian mortality table makes any rapid expansion of life insurance a relatively riskier proposition than it would be if mortality could be anticipated in a more precise manner.

3. PROFITABILITY.

This ratio takes a picture of an insurer's success, or lack thereof, in operating its business. It is a tautology to state that insurers who do not make a profit are more likely to experience solvency problems than companies that operate profitably. This ratio focuses on the insurers results from its business operations and thus is more precise than the change in net worth ratio which, of course, can be affected by matters not strictly related to the sale of insurance, such as unrealized gains or losses on investments, dividends to shareholders or changes in non-admitted assets.

Definition:

- **Net Income, before taxes DIVIDED BY Premium Income**

Any figure within the range 0-15% should be considered a usual value for this test.

While a negative figure is a cause for concern, such, by itself, is not necessarily a predictor of impending financial difficulties. For example, a company offering a new product may experience initial losses. This could be expected to occur for life companies selling a large number of annuity contracts in conjunction with pension funds.

On the other hand, a ratio showing a larger than usual profit may likewise be indicative of financial problems and should prompt further investigation. Perhaps a company has begun to issue a large amount of accident and health business – ordinarily, such business will not initially produce a significant volume of claims, but as the business matures claim costs will rise to the levels anticipated in constructing the premium rates. There is a danger, however, that this initial "profitability" could result in the payment of dividends to shareholders in excess of prudent levels.

4. NET INVESTMENT INCOME.

Because the nature of life and annuity products requires a life insurance company to earn a specified amount of income in order to accumulate the reserve funds necessary to pay expected benefits, and because in non-life insurance p[products investment income is the only margin against loss predictions, any company whose investment returns are not the equivalent of the risk-free rate of return in Armenia is a cause for great concern.

Definition:

- **Net Investment Income DIVIDED BY Average Cash and Invested Assets**

Subsidiary definitions:

- **Net Investment Income includes Realized Capital Gains/Losses.**
- **Average Cash and Invested Assets is the average of the start of year and end of year balances for this item.**

Invested assets ought to provide investment returns and if they do not additional information should be sought. For instance, a company may be heavily invested in assets which are non-performing, thus calling in to question not only future earnings but also the ultimate safety of the entire investment. The Ministry of Finance and Economy ought to establish an acceptable value for this ratio based on the yield of Government securities.

5. LIQUID ASSETS TO TOTAL LIABILITIES.

This is sometimes called the "quick assets" test. Even though the insurance regulations require that reserves be invested in very safe and liquid investments, all of the insurer's liabilities ought to be appropriately managed. The regulations also call for the insurer having a duration analysis and asset-liability matching program.

Definition:

- **Liquid Assets DIVIDED BY Total Liabilities**

Subsidiary definitions:

- **Liquid Assets includes Cash and Cash Equivalents, Bank Deposits, Marketable Securities (shares and bonds) traded on Stock Exchanges, and obligations of the Government of Armenia**

We suggest that if this ratio falls below 70%, the financial analyst should make further investigations.

6. COMBINED RATIO.

This ratio is the combination of the loss ratio and the expense ratio that an insurance company experiences on its business.

Definition:

$$\frac{\textbf{Incurred Losses}}{\textbf{Net Premiums Earned}} + \frac{\textbf{Incurred Expenses}}{\textbf{Net Premiums Earned}}$$

Subsidiary definitions:

- **Incurred losses consist of net losses paid, reported but not yet paid, and incurred but not yet reported, and net loss adjustment expenses corresponding to each of these incurred loss categories.**
- **Expenses include Commissions and Other Underwriting Expenses incurred.**
- **Net Premiums Earned are premiums earned net of premiums ceded to reinsurers after adjustment for commission received (if any) on such cessions.**

The Combined Ratio focuses on the profitability of underwriting. A ratio greater than 1.00 means (roughly speaking) that underwriting by itself is unprofitable, and the company is having to rely on its investment income to ensure profitability overall. In turn, this implies that, with given product pricing and administrative efficiency, any downturn in market investment yields could cause profits to disappear.

Since it is profitability overall which matters, a Combined Ratio of 1.00 or more is not necessarily a sign of financial distress: it depends what investment yields are available, and how effectively funds at the disposal of the company can be deployed. In circumstances in which market investment yields are high, it is to be expected that competition will push underwriting profits down (through lower prices or through the acceptance of poorer risks at existing prices). For this reason, the Combined Ratio should be looked at in conjunction with the Ratio of Investment Income to Premiums Earned [see Test 4]. As well, the regulator should be concerned mainly with companies for which the Combined Ratio is high relative to the average for all companies, because these companies may be underestimating the magnitude of the risks they are underwriting, or they may be being managed inefficiently.

The two components of the Combined Ratio indicate the levels of losses (claims) and marketing and administrative expenses, respectively. Again, by making comparisons with industry averages, the regulator will gain further insight as to whether there may be problems of poor risk selection or pricing, or of low operational efficiency.

7. RATIO OF AGENTS' BALANCES AND UNCOLLECTED PREMIUMS TO NET WORTH

Definition:

$$\frac{\textbf{Agents' Balances and Uncollected Premiums}}{\textbf{Surplus}}$$

As noted previously, a low investment income ratio may indicate failure to collect premium payments promptly (and perhaps a general lack of control over agents and brokers), resulting in the company holding a relatively large amount of non-earning, relatively risky assets. This ratio provides a quick check on this possibility. Any value in excess of twenty-five percent (25%) is unusually high and merits additional investigation by the financial analyst.

Accordingly, this ratio not only is an indicator of management's performance in monitoring agents and collecting premiums in a timely basis, but it is an also an indicator of well management is maintaining cash flow and liquidity