



AMERICAN ACADEMY *of* ACTUARIES

Status Report of the Health Liquidity Work Group To the NAIC Health Entities Working Group March 2002

This report was prepared by the American Academy of Actuaries Health Liquidity Work Group.

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The AAA Liquidity Workgroup has identified a set of potential ratios to be used to test for health organization liquidity. The ratios would be used in a “safe harbor” test. The AAA health liquidity workgroup will use actual data to be provided by the NAIC to determine which ratios are good predictors of an entity’s liquidity strength and develop a weighting scheme for a first level liquidity test. The Workgroup will also develop a second level test that uses off balance sheet adjustments to the first level ratios and finally will describe stress level testing to be done if the safe harbor tests are not passed.

POTENTIAL LIQUIDITY TEST RATIOS

The AAA Liquidity Workgroup has identified ten ratios to potentially use as part of a liquidity test. Most of these ratios are variations of FAST ratios (see attached) and include:

- ✧ Investment Yield (1)
- ✧ Combined Ratio (6)
- ✧ Profit Margin Ratio (7)
- ✧ Liquid assets at market to Short-term Liabilities (18)
- ✧ Change on Capital and Surplus (16)
- ✧ Liquid assets at market Less Current Liabilities to Months of Net Loss
- ✧ Premium Receivable to Premium Revenue (20)
- ✧ Average Number of Days of Unpaid Claims (13)
- ✧ Change in Claims Payable Per Member Per Month (34)

☐ Change in Membership (26)

Since liquidity problems can escalate very quickly it is felt that these ratios should be tested quarterly.

Investment Yield

This ratio is similar to the FAST ratio #1. The ratio compares investment income to cash and invested assets.

A ratio that was too low or too high could indicate that investments are too conservative or too risky. A decrease in the ratio compared to market change could indicate under performance that could impact liquidity.

The relative weight for this ratio would be expected to be low, but it could potentially be used to require a higher ratio of liquid assets to current liabilities.

Combined Ratio

This ratio is similar to FAST ratio # 6. Premium revenue is compared to claim and administrative expense, excluding investment, interest, and taxes.

The recommended ratio differs from the FAST ratio in that it includes ASO/ASC on a consistent basis. Some companies with large ASO blocks could have potential losses from inadequate ASO fees that would cause future liquidity problems.

A ratio rapidly approaching 1 could trigger concern. Any large increases or variability would also trigger concern.

Testing will be done to determine if a ratio of 1 is the correct trigger point and what level of increase or variability is predictive of future problems.

The combined ratio may correlate so closely with the profit margin ratio that only one would need to be tested.

Profit Margin Ratio

This ratio is similar to FAST ratio #7 and would compare underwriting profit to premium revenue.

For the recommended ratio interest income would not be included in profit, but interest expense is included as a reduction to profit.

The ratio, trend in the ratio and variability in the ratio could all trigger concern.

The workgroup intends to test the investment yield ratio, combined ratio and profit margin ratio to determine if only one or two of these ratios would be sufficient for the liquidity test.

Liquid Assets at Market to Short-Term Liabilities -

This is similar to FAST ratio # 18. The ratio is not quite a current ratio in that it compares liquid assets to short-term liabilities.

The recommended ratio includes liquid long-term assets along with short-term assets, but they are valued at current market value. Stocks not traded on a major exchange, private placement bonds, securities that are pledged and restricted securities are not included in the asset category.

A ratio approaching 1 would trigger concern.

Other ratios, such as profit margin ratios, could be used to adjust trigger points. For example a trigger point could be set higher, if high stable profit margins were present.

Change in Capital and Surplus -

This is similar to FAST ratio # 16. It compares the change in capital and surplus to the prior year end capital and surplus.

The Workgroup is considering a ratio using the amount of capital that was required to be infused into the company over the prior year, because companies can mask problems by the time total capital and surplus are reported. The workgroup will test using capital infusion of C&S as a percentage of C&S, although infusions are typically due to losses and may be caught by combined and profit ratios.

This ratio is closely tied to the profit margin ratio in that if the profit margin were positive, the Change in Capital and Surplus would be generally positive also.

Liquid Assets at Market Less Current Liabilities to Months of Net Loss -

This ratio measures the number of months of loss that can continue until current liabilities exceed liquid assets.

A company experiencing periodic monthly or quarterly losses would compare their current monthly losses to the excess of liquid assets over current liabilities. An average of recent losses or the maximum monthly loss could be used.

Testing could only be done on quarterly losses. Companies with current liquidity problems would be reviewed to determine what loss patterns existed prior to the determination that there was a problem.

This ratio is closely tied to profit margin ratios and change in Capital and Surplus analysis. Unlike the change in capital and surplus this ratio only considers liquidity needs and available resources.

Premium Receivable to Premium Revenue –

This ratio is similar to FAST ratio # 20 and would compare premium receivable to premium revenue.

This ratio would include both “admitted” and “non-admitted” premiums receivable.

This ratio will be tested to see if any specific level is correlated with future liquidity problems.

Average Number of Days of Unpaid Claims Ratio –

This ratio is similar to FAST ratio #13 and compares the unpaid claim liability to average amount of paid claims per day.

The recommended formula includes processing of ASO and ASC claims. It is believed that once a company encounters liquidity problems it may slow down claim payments and an early indicator would then be an increase in the number of days of unpaid claims.

The absolute number of days and increases in number of days as a percentage could both trigger concern. The Workgroup initially is considering using change as a percent of number of day to trigger concern.

Change in Claims Payable Per Member Per Month –

This ratio is similar to FAST ratio # 34 and compares claims PMPM in the current year to last year.

This measure would have to be adjusted for medical inflation issues. This ratio would also be influenced by benefit changes such as increasing copays and deductibles.

A large increase in claims PMPM may indicate a deteriorating block of business that could lead to liquidity problems.

This ratio is closely tied to the combined ratio and profit margin ratio. Testing will be done to determine the best predictor of future liquidity problems.

Change in Membership –

This ratio is similar to FAST ratio # 26 and compares the change in membership since last year end to last year end's membership.

The ratio doesn't catch the non-renewals for the next year when it's done on Dec. 31st. Either a ratio that looks at January 1 enrollment rather than December 31 or a first quarter test would be more valuable.

The Workgroup will test this ratio, but other ratios may prove to be better predictors, because they would be less vulnerable to other factors.

LIQUIDITY RATIO TESTING AND DATA REQUEST

Testing will be done to determine the correct trigger point. The goal would be to choose a trigger that would predict a liquidity problem with sufficient time to make corrections.

Health liquidity analysis requires time series focused data to assess leading indicators of liquidity issues. Since liquidity issues can emerge in a fairly short period of time, quarterly data is needed. A minimum of 3 years of data would be useful to assess volatility versus real liquidity concerns.

Data associated with currently produced financial ratios is a starting point for our analysis. In addition, it would be valuable for us to have access to a database (either the NAIC's own, or one of the third-party products such as Thomson/Sheshunoff) of quarterly and annual statement data covering multiple years.

Our approach with these data will be to assess the correlation of the ratio data to company liquidity status. The other financial data will be reviewed to determine if additional data would add to the predictive value of the ratio data.

NEXT STEPS BEYOND RATIO TESTING

The original liquidity test proposed by the AAA consisted of a two-tier safe harbor test and a series of stress tests to be performed if a company did not fall in the safe harbor. In addition to testing the proposed ratios, the workgroup will determine appropriate off balance sheet adjustments to the proposed ratios and further define the stress tests required if the safe harbor is not applicable.

Potential off balance sheet adjustments will be defined for each ratio. Since by definition off balance adjustments are not available in the NAIC database, our professional judgement will be used to make a recommendation of appropriate adjustments.

The stress tests presented in the original AAA report need further definition. The Work Group will also research information on companies that have been identified as having liquidity problems and determine the types of stress tests that would have predicted their particular situation.

The Work Group intends to have the off balance sheet adjustments defined by the June meeting. The stress testing may be more defined by June, but will probably not be complete until the September meeting.

Recommended Ratios by FAST Ratio Number

1. INVESTMENT YIELD

- A. Net Investment Income Earned
- B. Subtotal Cash and Invested Assets

Result = A / B

6. COMBINED RATIO **

- A. Total Medical & Hospital Expenses with ASO
- C. Claims Adjustment Expenses
- E. General Administration Expenses - w/ commission
- G. Total Premium and Premium Equivalence Revenue

Result = (A + C + E) / (G)

7. PROFIT MARGIN RATIO

- A. Net Income (Loss) after tax and investment income
- B. Total Premium Revenue

Result = A / B

13. AVERAGE NUMBER OF DAYS OF UNPAID CLAIMS RATIO **

- A. Claims Unpaid
- B. Unpaid Claims Adjustment Expenses
- C. Total Medical & Hospital Expenses
- E. Claims Adjustment Expenses
- G. Number of Days in Year

Result = (A+B) / [(C+E) / 365]

16. CHANGE IN CAPITAL AND SURPLUS

- A. Total Capital and Surplus – Current Year
- B. Total Capital and Surplus – Prior Year

Result = (A-B) / Absolute Value (B)

18. CURRENT RATIO

- A. Bonds at market w/o non-NAIC approved or private placement bonds or pledged or restricted
- B. Affiliated Bonds if traded on major exchange and not restricted or pledged
- C. Cash and Short-Term Investments
- D. Receivable for Securities
- E. Premiums Receivable
- F. Health Care Receivable
- G. Amounts Recoverable from Reinsurers
- H. Investment Income Due and Accrued

- I. Amounts Due from Self-funded Plans
- J. Amounts Due from Par, Subs,&Affil-Current and approved for payment
- A1. Stock at market if traded on major exchange
- J1. Deferred tax asset

- K. Total Liabilities
- L. Borrowed Money
- M. Borrowed Money – Current portion
- N. Aggregate Write-In
- O. Aggregate Write-In – Current portion

- P. Special Deposits – Short-term

$$\text{Result} = (A+A1+B+C+D+E+F+G+H+I+J+J1-P) / [K-(L-M)-(N-O)]$$

20. PREMIUM RECEIVABLE TO PREMIUM REVENUE

- A. Premiums Receivable
- B. Premium Revenue

$$\text{Result} = A / B$$

26. CHANGE IN ENROLLMENT (MEMBERSHIP)

- A. Total Members - Current Year
- B. Total Members - Prior Year

$$\text{Result} = (A - B) / B$$

34. CHANGE IN CLAIMS PAYABLE PER MEMBER PER MONTH

- A. Claims Payable-CY
- B. Total Member Months-CY

- C. Claims Payable-PY
- D. Total Member Months-PY

$$\text{Result} = (A / B) / (C / D)$$