

## II. PROPERTY/CASUALTY RATIOS

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This chapter describes the financial ratios of the statistical phase of IRIS and offers suggestions for interpreting ratio results as well as for determining the types of further analysis that need to be performed. The purpose of IRIS is to assist state insurance departments in allocating resources to those insurers in greatest need of regulatory attention.

The suggestions for analysis included in the discussion of each financial ratio are intended to assist state regulators in the interpretation of ratio results. The financial analyst or examiner should adjust the depth and direction of their analysis in accordance with their knowledge of the insurer and its particular circumstances.

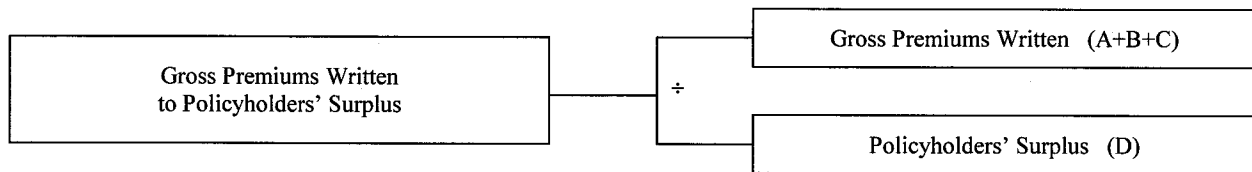
Analysis should begin with a review of the insurer's ratio results. The financial analyst or examiner should note the ratios reported outside the usual ranges and the amounts by which such values deviate from those ranges.

All ratios are reported as percentages, rounded to the nearest percent. For the Investment Yield ratio, results are rounded to the nearest tenth of one percent.

### Ratio Ranges

Ratio	Unusual Values Equal to or	
	Over	Under
1. Gross Premiums Written to Policyholders' Surplus	900	---
2. Net Premiums Written to Policyholders' Surplus	300	---
3. Change in Net Premiums Written	33	-33
4. Surplus Aid to Policyholders' Surplus	15	---
5. Two-Year Overall Operating Ratio	100	---
6. Investment Yield	6.5	3.0
7. Gross Change in Policyholders' Surplus	50	-10
8. Change in Adjusted Policyholders' Surplus	25	-10
9. Adjusted Liabilities to Liquid Assets	100	---
10. Gross Agents' Balances (in collection) to Policyholders' Surplus	40	---
11. One-Year Reserve Development to Policyholders' Surplus	20	---
12. Two-Year Reserve Development to Policyholders' Surplus	20	---
13. Estimated Current Reserve Deficiency to Policyholders' Surplus	25	---

## P/C OVERALL RATIO 1 - GROSS PREMIUMS WRITTEN TO POLICYHOLDERS' SURPLUS



A. Direct Premiums Written	Page 8, Line 35, Column 1	_____
B. Reinsurance Assumed – Affiliates	Page 8, Line 35, Column 2	_____
C. Reinsurance Assumed – Non-Affiliates	Page 8, Line 35, Column 3	_____
D. Policyholders' Surplus	Page 3, Line 37, Column 1	_____

Result =  $100 * (A+B+C) / D$  \_\_\_\_\_ %

- If D is zero or negative, result is 999.
- If D is positive and (A+B+C) is negative, result is zero.

Policyholders' surplus provides a cushion for absorbing losses. This ratio measures the adequacy of the cushion without the effect of premiums ceded to reinsurers. The higher the ratio, the more risk the insurer bears in relation to policyholders' surplus.

The usual range for the ratio includes results up to 900 percent.

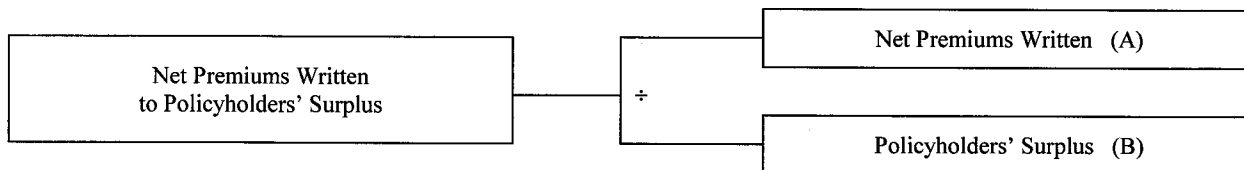
There are some potential problems that could result from high gross premiums written in relation to policyholders' surplus. Consider the following:

1. An insurer's Gross Premiums Written to Policyholders' Surplus ratio reflects its policyholders' surplus exposure on all business written on a direct or assumed basis, without considering the effect of reinsurance. Therefore, it is important to review the result of this ratio with that of Ratio 2, Net Premiums Written to Policyholders' Surplus. If the disparity between the two ratios is large, the insurer may be relying heavily on reinsurance. To the extent that the reinsurers are financially sound and make prompt payments to the insurer, this may not be a problem. However, the insurer is liable to the policyholder whether or not the reinsurer makes good on its obligations to the insurer. Under a pooling arrangement, the results of the gross premiums written to policyholders' surplus ratio may be skewed.
2. The distribution of premium between property/casualty lines of business should be reviewed when analyzing this ratio. Insurers with a larger portion of premium from long-tail lines, such as workers' compensation, should generally maintain a lower Gross Premiums Written to Policyholders' Surplus ratio, as it is more difficult to accurately estimate potential losses for these lines of business, resulting in a greater variability of losses.

## **P/C OVERALL RATIO 1 - GROSS PREMIUMS WRITTEN TO POLICYHOLDERS' SURPLUS**

3. The percentage of assumed business versus direct business should be reviewed to determine how the insurer generates business. In general, an insurer has less control over business it assumes. However, this does not mean that direct business is preferable to assumed business. Special consideration should be given to assumptions among affiliates that are not part of a pooling arrangement. Assumptions of this type should be investigated to determine the ceding entity's expertise in writing the line of business, its overall underwriting experience, the reason(s) for not retaining the business, and the reason(s) for not utilizing outside reinsurance.
4. Determine whether the insurer's business is profitable and whether profits are stable, increasing, or decreasing. Ratio 5, Two-Year Overall Operating Ratio, provides a measure of profitability for the preceding two years. In general, insurers with stable profits and adequate reinsurance coverage with financially sound reinsurers are better able to sustain a higher Gross Premiums Written to Policyholders' Surplus ratio than insurers with losses, unstable profits, or inadequate reinsurance coverage and/or financially unsound reinsurers.

## P/C OVERALL RATIO 2 - NET PREMIUMS WRITTEN TO POLICYHOLDERS' SURPLUS



A. Net Premiums Written

Page 8, Line 35, Column 6

B. Policyholders' Surplus

Page 3, Line 37, Column 1

Result = 100 \* (A / B)

\_\_\_\_\_ %

- If B is zero or negative, result is 999.
- If B is positive and A is negative, result is zero.

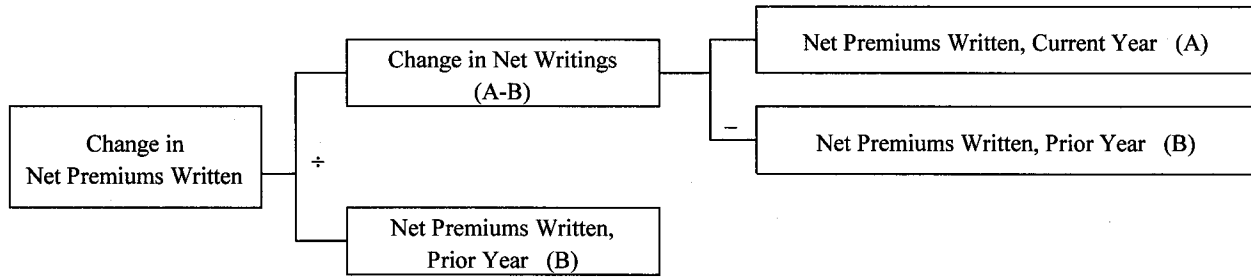
This ratio measures the adequacy of the policyholders' surplus cushion, net of the effects of premiums ceded to reinsurers. The higher the ratio, the more risk the insurer bears in relation to policyholders' surplus.

The usual range for the ratio includes results up to 300 percent.

There are some potential problems that could result from high net premiums written in relation to policyholders' surplus. The following should be taken into consideration:

1. If the insurer is a member of a group of affiliated companies, consider reviewing this ratio on a consolidated basis. The higher the risk to which other affiliated companies are exposed, the greater the cause for concern.
2. Determine whether the insurer's business is profitable and whether profits are stable, increasing, or decreasing. Ratio 5, Two-Year Overall Operating Ratio, provides a measure of profitability for the preceding two years. In general, insurers with stable profits are better able to sustain a higher ratio of net writings to policyholders' surplus without undue risk than insurers with losses or unstable profits.
3. The distribution of premium between property and liability lines of business should be reviewed when analyzing this ratio. Insurers with a larger portion of premium from long-tail lines, such as workers' compensation, should generally maintain a lower Net Premiums Written to Policyholders' Surplus ratio. It is more difficult to accurately estimate potential losses for long-tailed business lines, resulting in greater variability of losses.
4. Determine the level of adequacy of the insurer's reinsurance protection against large losses, catastrophes, etc. Review the reinsurance contracts that are in place to determine the level of retention by the insurer.
5. Determine the quality of the reinsurers. For material cessions, review the reinsurers' financial statements to determine their financial stability. For those situations where collateral must be posted, ensure that the proper level and type of collateral is in place.

**P/C OVERALL RATIO 3 - CHANGE IN NET PREMIUMS WRITTEN**



A. Net Premiums Written, Current Year  
 B. Net Premiums Written, Prior Year

Page 8, Line 35, Column 6  
 PY: Page 8, Line 35, Column 6

\_\_\_\_\_  
 \_\_\_\_\_

Result =  $100 * (A-B) / B$

\_\_\_\_\_  
 \_\_\_\_\_  
 %

- If A and B are both zero or negative, result is zero.
- If A is positive and B is zero or negative, result is 999.

Material increases or decreases in net premiums written could indicate a lack of stability in the insurer's operations and/or management. A large increase in premiums may indicate entry into new lines of business or geographic locations. In addition, such an increase in premiums may be a sign that the insurer is attempting to increase cash flow in order to meet current loss payments. A large decrease in premiums may indicate the discontinuance of certain lines of business, scaled back writings due to large losses in certain lines, loss of market share due to competition, or increased use of reinsurance.

The usual range for the ratio includes results from -33 percent to 33 percent.

Familiarity with the insurer's operations and history is useful in judging the importance of ratio results falling outside the range limits. Such results frequently indicate instability that may include dramatic shifts in product mix, marketing areas, or underwriting policy. When an unstable situation is apparent, further analysis or examination should be directed toward the following:

1. Determine whether the insurer's assets are properly valued and sufficient liquidity is available to meet cash demands. Consider the results of Ratio 9, Adjusted Liabilities to Liquid Assets, and review Schedules A through E.
2. Review the insurer's loss reserves and understand the level of adequacy by reviewing the reserve ratios (Ratios 11, 12, and 13) and Schedule P.

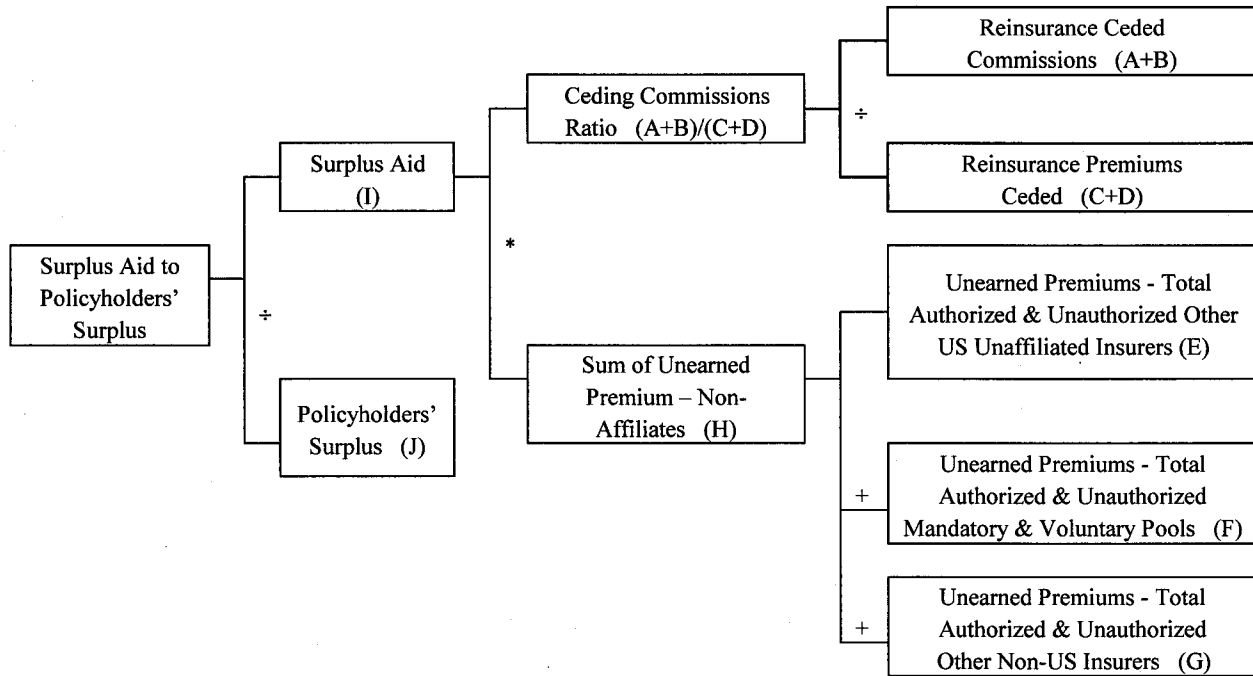
It is important to determine whether a notable increase in writings indicates that the insurer is increasing cash flow to pay current claims. This may be the case if the insurer's recent reserves were inadequate (see the one-year and two-year reserve development, Ratios 11 and 12). An increase in writings, particularly in the liability lines, to pay current claims provides a very short-term solution to underlying problems and quickly increases the risk of insolvency.

### **P/C OVERALL RATIO 3 - CHANGE IN NET PREMIUMS WRITTEN**

An increase in writings does not necessarily indicate difficulties that would threaten an insurer's solvency if they are accompanied by a reasonably low Net Premiums Written to Policyholders' Surplus ratio (Ratio 2), adequate reserving (Ratios 11, 12, and 13), profitable operations (Ratio 5), and a relatively stable product mix.

A decrease in net premiums written with somewhat stable gross writings may indicate that an insurer is attempting to increase cash flow related to ceding commissions from non-affiliated reinsurance. A review of Surplus Aid to Policyholders' Surplus ratio (Ratio 4) may help in understanding ratio results below the usual lower range.

**P/C OVERALL RATIO 4 - SURPLUS AID TO POLICYHOLDERS' SURPLUS**



- |   |  |       |
|---|--|-------|
| A. Reinsurance Ceded Commissions  | Page 11, Line 2.3, Column 2  | _____ |
| B. Reinsurance Ceded Contingent Commissions   | Page 11, Line 2.6, Column 2  | _____ |
| C. Reinsurance Premiums Ceded – Affiliates  | Page 8, Line 35, Column 4  | _____ |
| D. Reinsurance Premiums Ceded – Non-Affiliates  | Page 8, Line 35, Column 5  | _____ |
| E. Unearned Premiums – Total Authorized and Unauthorized Other US Unaffiliated Insurers | Page 22, Line (0599999 + 1499999), Column 13, * 1000                     | _____ |
| F. Unearned Premiums – Total Authorized and Unauthorized Mandatory and Voluntary Pools  | Page 22, Line (0699999 + 0799999 + 1599999 + 1699999), Column 13, * 1000 | _____ |
| G. Unearned Premiums – Total Authorized and Unauthorized Other Non-US Insurers          | Page 22, Line (0899999 + 1799999), Column 13, * 1000                     | _____ |
| H. Sum of Unearned Premiums (E+F+G)   |  | _____ |
| I. Surplus Aid = [(A+B) / (C+D)] * H  |  | _____ |
| J. Policyholders' Surplus   | Page 3, Line 37, Column 1  | _____ |

Result = 100 \* I / J \_\_\_\_\_ %

- If (C+D) or I is zero or negative, result is zero.
- If I is positive and J is zero or negative, result is 999.

The use of surplus aid reinsurance treaties may be an indication that company management believes policyholders' surplus to be inadequate. Additionally, the continued solvency of insurers with a large portion of policyholders' surplus resulting from surplus aid may depend on the continuing participation in the treaty with the reinsurer.

The usual range for the ratio includes results less than 15 percent.

#### **P/C OVERALL RATIO 4 - SURPLUS AID TO POLICYHOLDERS' SURPLUS**

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The Surplus Aid to Policyholders' Surplus ratio is of primary importance for the following reasons:

1. The existence of significant amounts of surplus aid may be an indication that policyholders' surplus is inadequate.
2. Surplus aid could improve results on other ratios enough to conceal important areas of concern.

For the reasons previously stated, all insurers with ratios greater than 15 percent should be given careful scrutiny regardless of their scores on other ratios. The following ratio results should be recalculated with policyholders' surplus adjusted to remove surplus aid:

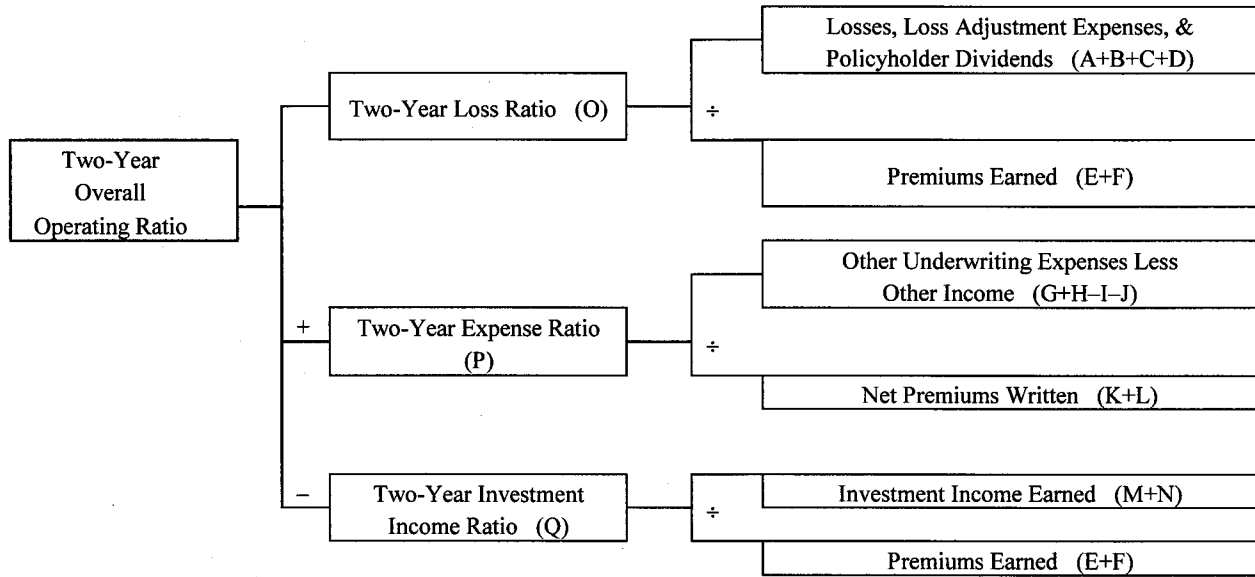
1. Gross and Net Premiums Written to Policyholders' Surplus (Ratios 1 and 2).
2. Gross Change in Policyholders' Surplus (Ratio 7). The previous year's policyholders' surplus should also be adjusted to remove surplus aid.
3. Gross Agents' Balances (in collection) to Policyholders' Surplus (Ratio 10).
4. Estimated Current Reserve Deficiency to Policyholders' Surplus (Ratio 13).

These adjustments can be made without recalculating the numerator. Divide the result for each ratio by the difference between one and the surplus aid ratio result expressed as a decimal.

If an insurer's IRIS value falls outside the usual range for several of the above ratios, they should be given higher priority. Reinsurance treaties of all insurers with a Surplus Aid to Policyholders' Surplus ratio of more than 15 percent should be reviewed. This analysis should determine the potential impact on the insurer's solvency should the treaty be cancelled.



**P/C PROFITABILITY RATIO 5 - TWO-YEAR OVERALL OPERATING RATIO**



A. Losses and LAE Incurred, Current Year	Page 4, Line 2 + 3, Column 1	_____
B. Losses and LAE Incurred, Prior Year	PY: Page 4, Line 2 + 3, Column 1	_____
C. Dividends to Policyholders, Current Year	Page 4, Line 17, Column 1	_____
D. Dividends to Policyholders, Prior Year	PY: Page 4, Line 17, Column 1	_____
E. Premiums Earned, Current Year	Page 4, Line 1, Column 1	_____
F. Premiums Earned, Prior Year	PY: Page 4, Line 1, Column 1	_____
G. Other Underwriting Exp & Write-ins, Current Year	Page 4, Line 4 + 5, Column 1	_____
H. Other Underwriting Exp & Write-ins, Prior Year	PY: Page 4, Line 4 + 5, Column 1	_____
I. Total Other Income, Current Year	Page 4, Line 15, Column 1	_____
J. Total Other Income, Prior Year	PY: Page 4, Line 15, Column 1	_____
K. Net Premiums Written, Current Year	Page 8, Line 35, Column 6	_____
L. Net Premiums Written, Prior Year	PY: Page 8, Line 35, Column 6	_____
M. Net Investment Income Earned, Current Year	Page 4, Line 9, Column 1	_____
N. Net Investment Income Earned, Prior Year	PY: Page 4, Line 9, Column 1	_____
O. Loss Ratio = 100 * [(A+B+C+D) / (E+F)]		_____ %
P. Expense Ratio = 100 * [(G+H-I-J) / (K+L)]		_____ %
Q. Investment Income Ratio = 100 * [(M+N) / (E+F)]		_____ %

Result = (O+P-Q) \_\_\_\_\_ %

- If (A+B+C+D+G+H-I-J-M-N) is zero or negative, result is zero.
- If (E+F) or (K+L) is zero or negative, result is 999.

The Two-Year Overall Operating Ratio is a measure of the profitability of an insurance company. Ultimately, the profitability of the business is a principal determinant of the insurer's financial stability and solvency.

## **P/C PROFITABILITY RATIO 5 - TWO-YEAR OVERALL OPERATING RATIO**

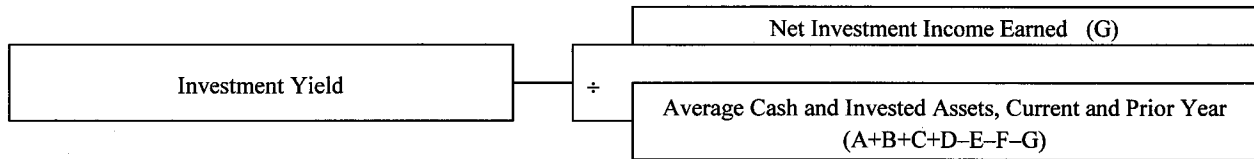
The usual range for the ratio includes results less than 100 percent. A Two-Year Overall Operating Ratio below 100 percent indicates an operating profit and a ratio result above 100 percent indicates an operating loss. Analysis of the Two-Year Overall Operating Ratio is helpful in determining the reasons behind the insurer's poor performance, whether it is due to a high loss ratio, a high expense ratio, or a low return on investments. When analyzing the result, it is sometimes necessary to consider the result of Ratio 11, One-Year Reserve Development to Policyholders' Surplus, and Ratio 13, Estimated Current Reserve Deficiency to Policyholders' Surplus, because prior year reserve development or current reserve deficiency may understate or overstate the true operating position of an insurer. For an insurer with a result outside the usual range on Ratio 11, the analyst should recalculate this ratio after eliminating the prior year development to obtain a more accurate picture of the insurer's current operating position.

A high loss ratio may be a result of large amounts of losses incurred on poorly developed lines of business and/or reserve strengthening on certain lines of business. Loss adjustment expenses may be high due to inflated claims adjustment fees on adverse business.

A high expense ratio may be due to high commission and brokerage fees, as well as inflated salaries and other operating expenses.

The subtraction of the investment income ratio allows insurers a credit of their investment earnings to offset underwriting losses. The investment income ratio should be reviewed to understand the components that impact the Two-Year Overall Operating Ratio.

**P/C PROFITABILITY RATIO 6 - INVESTMENT YIELD**



A. Total Cash and Invested Assets, Current Year	Page 2, Line 12, Column 3	_____
B. Total Cash and Invested Assets, Prior Year	PY: Page 2, Line 12, Column 3	_____
C. Investment Inc. Due & Accrd, Current Year	Page 2, Line 14, Column 3	_____
D. Investment Inc. Due & Accrd, Prior Year	PY: Page 2, Line 14, Column 3	_____
E. Borrowed Money, Current Year	Page 3, Line 8, Column 1	_____
F. Borrowed Money, Prior Year	PY: Page 3, Line 8, Column 1	_____
G. Net Investment Income Earned	Page 4, Line 9, Column 1	_____

Result = 200 \* [G / (A+B+C+D-E-F-G)] \_\_\_\_\_ %

- Limit result to a minimum of zero.

The Investment Yield ratio provides the percentage of annual income on an investment portfolio.

The usual range for the ratio includes results greater than 3.0 percent and less than 6.5 percent.

The analyst should review the types of investments reported in the annual financial statement, Schedules A through E, and the yield on each type of investment as reported on the Exhibit of Net Investment Income to determine the cause of a high or low investment yield.

**Low yields may be caused by:**

1. Speculative Investments  
These investments occasionally produce large capital gains over the long run but provide little income in the interim. Analysis should focus on the proper valuation of these investments and the determination of their stability and liquidity.
2. Large Investments in Affiliated Entities Under the Control of the Company  
Analysis should focus on the appropriateness of these investments, their value, and their liquidity.
3. Large Investments in Home Office Facilities  
Analysis should focus on the ability of the insurer to afford its facilities while maintaining liquidity. Also, review the adequacy of the amount of rent charged to underwriting expenses and credited to investment income.
4. Considerable Investments in Tax-Exempt Bonds  
Analysis should focus on an estimate of the current fair value of these securities, which may be substantially less than the book/adjusted carrying value. If an insurer is currently paying federal income taxes and has large amounts of tax-exempt securities, its after-tax yield could be comparable to that of other insurers with a substantially higher before-tax yield derived from taxable securities. This type of investment philosophy is viewed as conservative.

## P/C PROFITABILITY RATIO 6 - INVESTMENT YIELD

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5. Significant Interest Payments on Borrowed Money

Large borrowings by an insurer may result in significant interest payments, which will reduce the insurer's investment yield. Some reinsurance contracts may also require interest payments, which will also reduce the yield. In either instance, apart from the reduction in investment yield, these situations should be investigated further to determine if they are symptomatic of other problems, such as lack of liquidity.

6. Extraordinarily High Investment Expenses

Although an insurer may be investing in assets that would be expected to provide an adequate return, investment expenses and other deductions from investment income may be reducing the net investment yield.

**High yields may be caused by:**

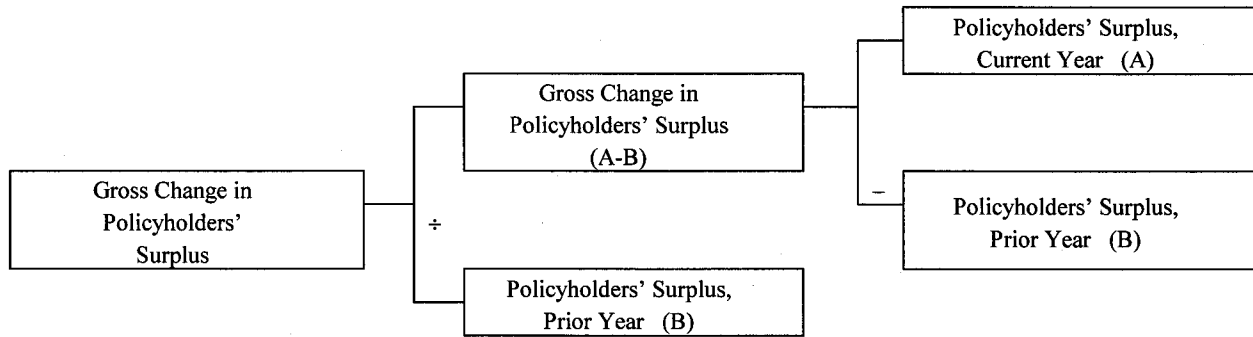
1. Investments in High-Risk Instruments

High-risk instruments could excessively leverage surplus and may fall outside statutory limitations.

2. Extraordinary Dividend Payments from Subsidiaries to the Parent

Review dividend laws for the insurer's state of domicile.

**P/C PROFITABILITY RATIO 7 - GROSS CHANGE IN POLICYHOLDERS' SURPLUS**



A. Policyholders' Surplus, Current Year  
 B. Policyholders' Surplus, Prior Year

Page 3, Line 37, Column 1  
 PY: Page 3, Line 37, Column 1

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%

Result = 100 \* [(A-B) / B]

- If A is zero or negative, result is -99.
- If A is positive and B is zero or negative, result is 999.

The Gross Change in Policyholders' Surplus ratio is the ultimate measure of improvement or deterioration in the insurer's financial condition during the year.

The usual range for the ratio includes results less than 50 percent and greater than -10 percent.

The lower range (-10 percent) is set more conservatively since a decrease in policyholders' surplus is a cause for concern. The upper range (50 percent) is used because a number of insolvent insurers report dramatic increases in policyholders' surplus prior to insolvency. Large increases in policyholders' surplus may be an indication of instability and may sometimes be related to the shifting of capital from other companies within a group, significant growth, or mergers and acquisitions.

If the ratio result falls below -10 percent, further analysis should be directed at determining the reasons for the change and whether these factors will be repeated in future years. This analysis compares the changes to policyholders' surplus for the two years and identifies the major factors affecting increases or decreases in policyholders' surplus, including but not limited to:

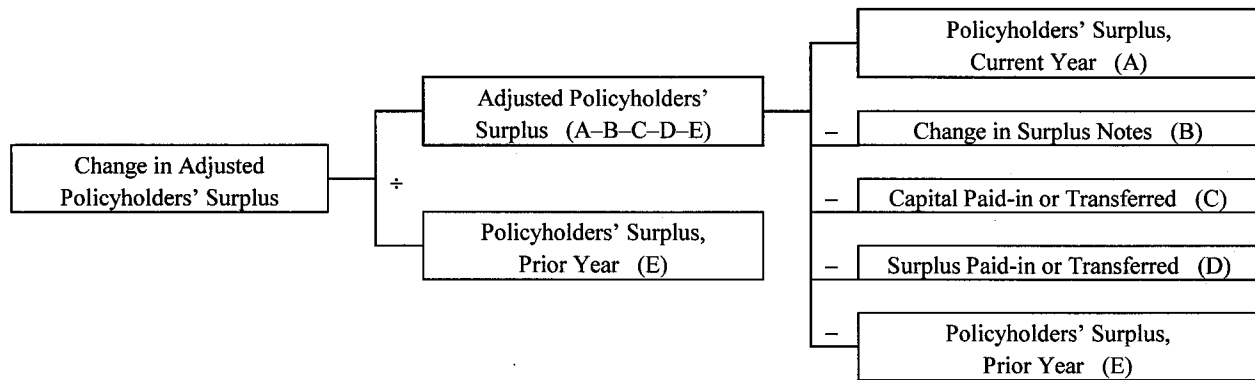
1. Net income (also review the Two-Year Overall Operating Ratio, Ratio 5).
2. Unrealized capital gains or losses – Review the Exhibit of Capital Gains (Losses) in the annual financial statement and compare the current components to the prior year-end components to determine which categories of investments are responsible for the changes in unrealized capital gains or losses. Determine whether a change in common stock was caused by decreases in the value of subsidiaries. If so, analyze the subsidiary to determine any solvency concerns.

## P/C PROFITABILITY RATIO 7 - GROSS CHANGE IN POLICYHOLDERS' SURPLUS

Review the insurer's investments and the supporting annual financial statement Schedules A through E. Determine whether changes in unrealized gains or losses were in line with changes experienced by other insurers investing in similar classes of assets during the same time period. If large unrealized losses have occurred, understand the steps the insurer took to protect it against further losses. If large unrealized gains have occurred, determine whether this was attributable to stock market increases, which could create a temporary rise in surplus.

3. To view the collective effects of a change in surplus notes, capital paid-in or transferred, and surplus paid-in or transferred, a review of Ratio 8, Change in Adjusted Policyholders' Surplus is suggested.
4. Dividends to stockholders.
5. Changes in nonadmitted assets – Review the Exhibit of Nonadmitted Assets in the annual financial statement.
6. Changes in surplus aid from reinsurance (Ratio 4).
7. Accounting changes and corrections of errors – Review Notes to financial statement #2 to determine the nature of the changes. Determine whether the insurer's changes are consistent with changes experienced by other insurers with similar lines of business. Understand whether the changes will have a material impact on current year operations and/or future periods.
8. Change in net deferred income tax – Review Notes to financial statement #9 to obtain a greater understanding of the sources of the insurer's book/tax differences and the changes in these items during the current year.
9. Change in ownership or program direction.

## P/C PROFITABILITY RATIO 8 - CHANGE IN ADJUSTED POLICYHOLDERS' SURPLUS



A. Policyholders' Surplus, Current Year	Page 3, Line 37, Column 1	_____
B. Change in Surplus Notes	Page 4, Line 29, Column 1	_____
C. Capital Paid-in or Transferred	Page 4, Line 32.1 + 32.2 + 32.3, Column 1	_____
D. Surplus Paid-in or Transferred	Page 4, Line 33.1 + 33.2 + 33.3, Column 1	_____
E. Policyholders' Surplus, Prior Year	PY: Page 3, Line 37, Column 1	_____

Result = [(A-B-C-D-E) / ABS(E)] \* 100 \_\_\_\_\_ %

- If A is zero or negative, result is -99.
- If A is positive and E is zero or negative, result is 999.

This ratio measures the improvement or deterioration in the insurer's financial condition during the year based on operational results.

The usual range for the ratio includes results less than 25 percent and greater than -10 percent.

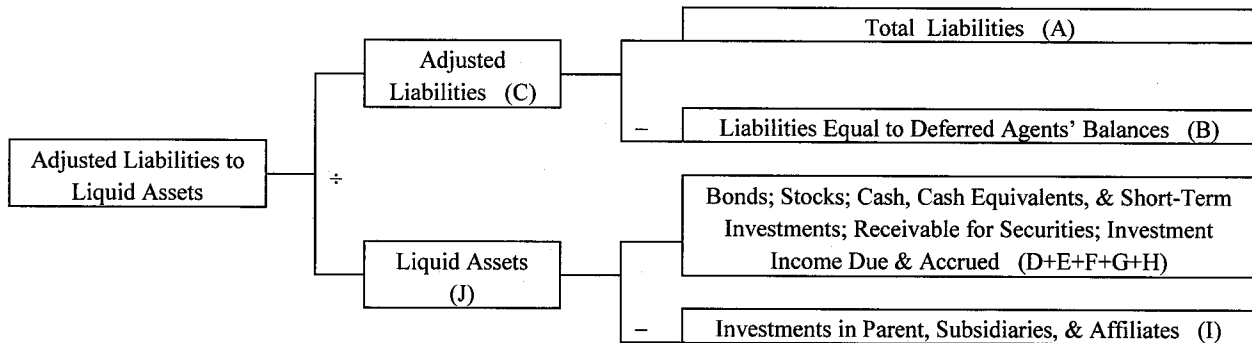
Changes in surplus notes, capital changes, and surplus adjustments are removed from policyholders' surplus in order to highlight the insurer's actual operations. In some cases, insurers may use capital contributions as a method of masking changes in surplus directly tied to operational issues. By removing these contributions, a more accurate picture of changes in policyholders' surplus from operations is obtained.

The lower range (-10 percent) is set more conservatively since a decrease in policyholders' surplus is a cause for concern. The upper range (25 percent) is used because a number of insolvent insurers have dramatic increases in policyholders' surplus prior to insolvency.

The following factors may contribute to increases or decreases in policyholders' surplus:

- Net income
- Net unrealized capital gains or losses
- Changes in nonadmitted assets
- Changes in provision for reinsurance
- Cumulative effect of changes in accounting principles
- Dividends to stockholders
- Changes in treasury stock
- Other gains or losses

## P/C LIQUIDITY RATIO 9 - ADJUSTED LIABILITIES TO LIQUID ASSETS



A. Total Liabilities	Page 3, Line 28, Column 1	_____
B. Liabilities Equal to Deferred Agents' Balances	Page 2, Line 15.2, Column 3	_____
C. Adjusted Liabilities = (A-B)		_____
D. Bonds	Page 2, Line 1, Column 3	_____
E. Stocks, Preferred & Common	Page 2, Line 2.1 + 2.2, Column 3	_____
F. Cash, Cash Equivalents & Short-Term Investments	Page 2, Line 5, Column 3	_____
G. Receivable for Securities	Page 2, Line 9, Column 3	_____
H. Investment Income Due & Accrued	Page 2, Line 14, Column 3	_____
I. Investments in Parent, Sub, & Affiliates	Page 17, Line 42 + 43 + 44 + 45, Column 1	_____
J. Liquid Assets = (D+E+F+G+H-I)		_____

Result = 100 \* (C / J) \_\_\_\_\_ %

• If J is zero or negative, result is 999.

The Adjusted Liabilities to Liquid Assets ratio is a measure of the insurer's ability to meet financial demands. It also provides a rough indication of the possible implications for policyholders if liquidation becomes necessary. Total liabilities are adjusted to remove the amount of liabilities equal to deferred agents' balances. Agents' balances deferred and not yet due is not a liquid asset; therefore, an adjustment is made to remove the corresponding liability. Note that bonds are included in this ratio at their annual book/adjusted carrying value, which is not necessarily equal to their fair value.

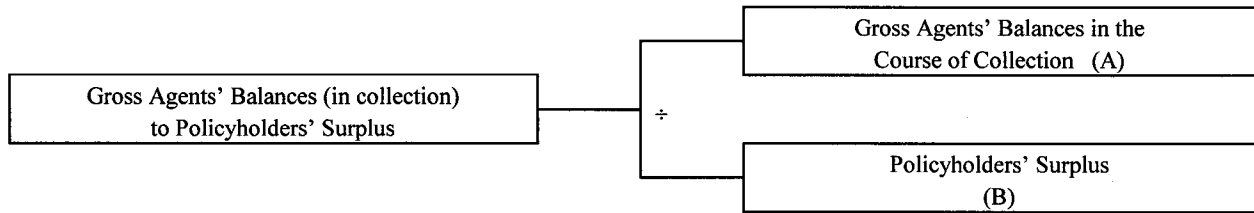
The usual range for the ratio includes results below 100 percent.

Past analysis has shown that many insurers who become insolvent report increasing Adjusted Liabilities to Liquid Assets in their final years. Therefore, in interpreting the result of this ratio, it is important to consider its trend, as well as the current year result. Often, insurers maintaining large deposits with reinsured companies have unusually high ratio results. The deposits are excluded from liquid assets but the offsetting reinsurance liabilities are included in total liabilities.

Further analysis of an insurer with a high Adjusted Liabilities to Liquid Assets ratio should focus on the adequacy of reserves and on proper valuation, mix, and liquidity of assets to determine whether the insurer will be able to meet its obligations to policyholders.



**P/C LIQUIDITY RATIO 10 - GROSS AGENTS' BALANCES (IN COLLECTION) TO POLICYHOLDERS' SURPLUS**



A. Gross Agents' Balances in the Course of Collection      Page 2, Line 15.1, Column 3      \_\_\_\_\_  
 B. Policyholders' Surplus      Page 3, Line 37, Column 1      \_\_\_\_\_

Result = 100 \* (A / B)      \_\_\_\_\_ %

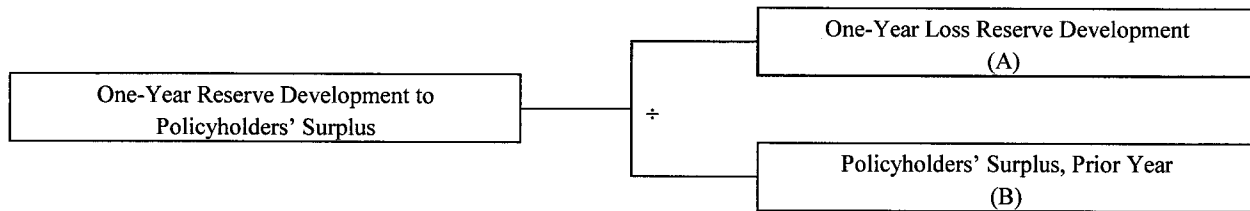
- If A is zero or negative, result is zero.
- If A is positive and B is zero or negative, result is 999.

This ratio measures agents' balances booked as written and billed to agents in relation to the insurer's policyholders' surplus.

The usual range for the ratio includes results less than 40 percent.

If the amount of agents' balances is of concern, further analysis should determine whether agents' balances that are more than 90 days old may have been included as an admitted asset. With regard to reinsurance companies, agents' balances represent amounts due from reinsured companies that, in many cases, are subject to regulation. For reinsurers, premium amounts due may be offset against losses payable to the same insurer in the event of insolvency.

**P/C RESERVE RATIO 11 - ONE-YEAR RESERVE DEVELOPMENT TO POLICYHOLDERS' SURPLUS**



A. One-Year Loss Reserve Development

Page 32, Part 2, Line 12, Column 11 \* 1000

B. Policyholders' Surplus, Prior Year

PY: Page 3, Line 37, Column 1

Result = 100 \* (A / B)

\_\_\_\_\_ %

- If A is positive and B is zero or negative, result is 999.

This ratio measures the development of unpaid loss and loss adjustment expenses based on loss and loss adjustment expenses reported one year prior.

The estimate of losses outstanding a year prior and up to the current statement date is the sum of the current reserves for those losses still outstanding plus the payments on those losses made during the past year. The difference between this current estimate and the reserves that were established at the end of the prior year is the one-year reserve development. If the current estimate is greater than the prior year reserves, reserves are deficient. If the current estimate is less than the prior year reserves, reserves are redundant. A positive ratio result indicates a deficiency, while a negative result indicates a redundancy.

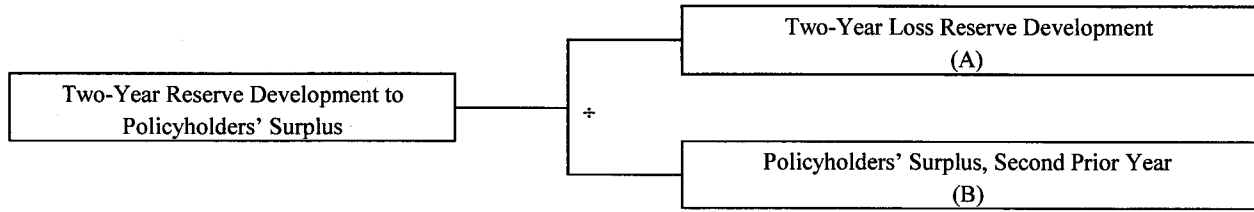
The usual range for the ratio includes results less than 20 percent.

For insurers with reserves that appear to be deficient, further analysis should focus on determining which lines of business and which accident years resulted in the deficiency. The amount of deficiency for each line of business and accident year may be determined from Schedule P, Part 2.

If the insurer's ratio results consistently show adverse development and/or Ratio 12, Two-Year Reserve Development to Policyholders' Surplus result is consistently worse than the One-Year Reserve Development to Policyholders' Surplus ratio, the insurer may be intentionally understating its reserves and deficiencies are appearing as losses are paid. Significant increases in this ratio might also be indicative of reserve strengthening, while significant decreases might be indicative of current reserve understatements.

An analysis of Schedule P will assist in determining the reasons for reserve deficiencies, such as payments in excess of the amounts reserved. However, an on-site examination may be required to resolve any serious questions regarding the adequacy of reserves.

**P/C RESERVE RATIO 12 - TWO-YEAR RESERVE DEVELOPMENT TO POLICYHOLDERS' SURPLUS**



A. Two-Year Loss Reserve Development Page 32, Part 2, Line 12, Column 12 \* 1000  
 B. Policyholders' Surplus, Second Prior Year 2<sup>nd</sup> PY: Page 3, Line 35, Column 1

Result = 100 \* (A / B) %

- If A is positive and B is zero or negative, result is 999.

This ratio measures the development of unpaid loss and loss adjustment expenses based on loss and loss adjustment expenses reported two years prior. The two-year reserve development is the sum of the current reserve for losses incurred more than two years prior, plus payments on those losses during the past two years, minus reserves established for those losses two years earlier.

Negative results indicate that reserves originally set were redundant and claims have been settled at less than their original estimate. Positive results indicate that reserves were deficient and have since developed adversely. If the insurer's ratio results consistently show adverse development and/or the two-year reserve development to policyholders' surplus ratio result is consistently worse than the one-year reserve development to policyholders' surplus, the insurer may be intentionally understating its reserves.

The following could cause adverse ratio results:

- Strengthening of deficient loss and LAE reserves held at the end of the second prior year-end
- Write-off of paid and unpaid losses for uncollectible reinsurance
- Commutation of ceded reinsurance
- Change in tabular reserve discounts

The usual range for the ratio includes results less than 20 percent.

For suggestions on interpreting ratio results and further analysis, refer to the comments on Ratio 11, One-Year Reserve Development to Policyholders' Surplus.



### **P/C RESERVE RATIO 13 – EST. CURR. RESERVE DEFICIENCY TO POLICYHOLDERS’ SURPLUS**

This ratio provides an estimate on the adequacy of current reserves. This estimated deficiency is the difference between the estimated reserves required by the insurer and the actual reserves maintained.

The usual range for the ratio includes results less than 25 percent.

The results of this ratio can be distorted by significant changes in premium volume. A major increase in premiums earned can produce ratio results that indicate a deficiency greater than the actual deficiency or vice versa. However, within the normal range of variations in premiums from year to year, the distortion from changes in premiums is not significant.

Ratio results can also be affected by changes in product mix, especially if there is a change in the balance between property and liability lines of business. A significant shift in premiums from property to liability lines may cause this ratio to reflect understated reserve deficiencies. For insurers that have had major shifts in product mix, the estimated current reserve deficiency or redundancy should be calculated separately for the major product groups using the approach described above for each.

Within these limitations, the ratio provides a reasonable estimate of the adequacy of reserves and can be used to determine whether an insurer has corrected reserve deficiencies that may have existed in the past.