

# Insurer Financial Performance

## INSURER PROFITABILITY AND INCOME AND EXPENSE MANAGEMENT

Sound management of an insurer includes careful attention to its financial performance. An important aspect of an insurer's financial performance is its profitability and whether it generates enough profit to survive and grow.

To survive long term, an insurer must generate more income than it spends; that is, an insurer's revenue must exceed its expenses. In a given month or year, an insurer's expenses might exceed its revenues, requiring the insurer to pay some of those expenses with accumulated funds. Such a pattern, however, will eventually deplete accumulated funds, and the insurer will fail. Like any other business, an insurer must manage its revenue and expenses to produce an overall income gain (revenue minus expenses) from its operations and to ensure profitability.

### Managing Insurer Income

Insurers charge their insureds premiums for insurance coverage, part of which insurers invest to earn additional income. Consequently, insurers receive income from these two major sources: the sale of insurance and the investment of funds.

The sale of insurance generates underwriting income, which is the amount remaining (either a gain or a loss) after underwriting losses and expenses are subtracted from premiums. The investment of funds generates investment income, which is the amount remaining (either a gain or a loss) after investment expenses are subtracted from the gross amount earned on investments during a period. While some insurers receive other income from the sale of specialized services or other incidental activities, most of the income an insurer receives is either underwriting income or investment income.

During a particular calendar year, an insurer calculates its written premiums by totaling the premiums charged on all policies written with effective dates of January 1 through December 31 of that year. Written premiums are the total premiums on all policies put into effect, or "written," during a given period. For example, when a policy is written to become effective on July 1 for a premium of \$600, that entire \$600 is counted as written premiums on July 1, even though the insurer may not have collected it yet. If the policy is changed on September 12, resulting in a \$75 refund, the insurer's written premiums

### 3.4 Property and Liability Insurance Principles

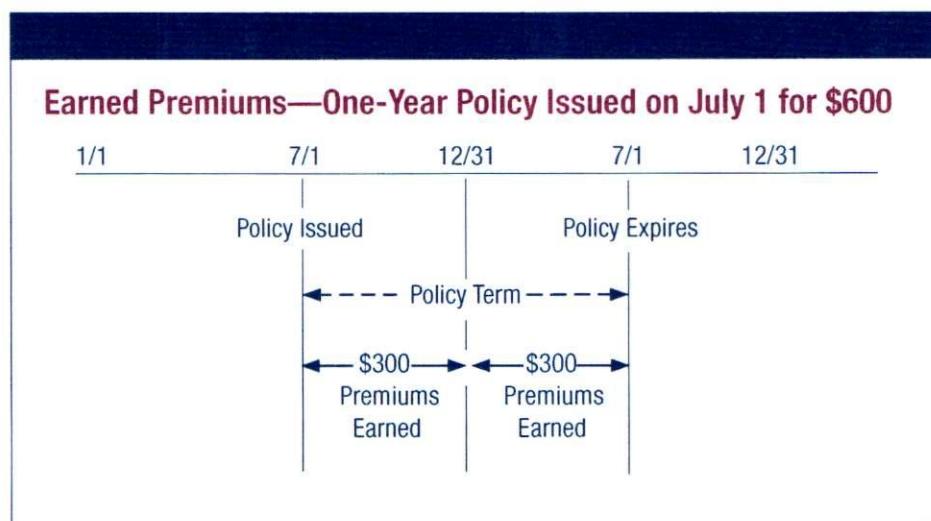
are reduced by \$75 on September 12. Although written premiums provide a source of cash for insurers, rules of accounting allow insurers to recognize only earned premiums on their income statement.

Earned premiums are the portion of the written premiums that apply to the part of the policy period that has already occurred. The remaining portion of written premiums applies to the policy period that has not yet occurred and is therefore called unearned premiums, representing insurance coverage yet to be provided.

Earned and unearned premiums can be compared to a non-insurance business transaction; for example, how a magazine subscription might operate. When a subscriber pays a \$24 annual subscription fee for a monthly magazine, the publisher does not “earn” the entire \$24 subscription amount until the magazine has been provided for twelve months. If the subscriber cancels the subscription after receiving only six monthly issues, the publisher might refund \$12, or half of the subscription amount—the “unearned” portion. Likewise, when an insured pays a premium of \$600 on July 1 for a one-year policy, the \$600 premium is not fully “earned” until the end of the twelve-month coverage period. The entire \$600, however, is considered written premiums for the current calendar year.

As the exhibit shows, only half of the \$600 annual premium paid on July 1 is earned as of the end of the calendar year because only six months, or half of the protection period, has passed. Therefore, at the end of the calendar year, the insurer calculates \$300 of earned premiums and \$300 of unearned premiums for this policy. See the exhibit “Earned Premiums—One-Year Policy Issued on July 1 for \$600.”

During the next calendar year, between January 1 and July 1, the unearned portion of the premium is earned as coverage is provided by the insurer. If this policy is not renewed on July 1 of the second year, the insurer records no written premiums for this policy in the second year (remember that the entire



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\$600 was considered to be written during the first year). The insurer records only the earned premiums of \$300 from the previous year's written premium. See the exhibit "Examples of Written, Earned, and Unearned Premiums."

### Examples of Written, Earned, and Unearned Premiums

Annual policy with \$600 premium is effective July 1.

At the end of Calendar Year 1:

Written premiums = \$600.

Earned premiums = \$300 (6 of the 12 months of coverage have elapsed).

Unearned premiums = \$300 (6 of the 12 months of coverage have not elapsed).

At the end of Calendar Year 2 (assuming the policy is not renewed):

Written premiums = \$0.

Earned premiums = \$300 (the remaining 6 months of coverage have elapsed).

Unearned premiums = \$0 (there is no more coverage; all the premium is earned).

If instead the annual policy were effective December 1 of that year, then the written premium would be the same, the full \$600; but the earned premium would be \$50 (1 of the 12 months has elapsed), and the unearned premium would be \$550 (for the other 11 months). At the end of that calendar year, assuming the policy was not renewed, the earned premiums would be \$550, and the written and unearned premiums would be \$0.

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### Underwriting Income

Underwriting income is an insurer's gain or loss as determined by subtracting the insurer's paid losses and **loss adjustment expenses (LAE)** from its earned premiums (the revenue from the insurer's underwriting operations). The losses paid by an insurer's policies plus the expenses associated with controlling and adjusting those losses are the primary underwriting expenses.

When calculating underwriting income for the year, or for any other period, an insurer must determine the portion of its written premiums that is earned premiums and the portion that is unearned premiums during the period, because if the policy were subsequently canceled by the insurer or the policyholder, the unearned income would not be earned. Consequently, the use of written premiums could create a false impression of profitability.

#### Loss adjustment expense (LAE)

The expense that an insurer incurs to investigate, defend, and settle claims according to the terms specified in the insurance policy.

### Investment Income

Because an insurer collects premiums from its policyholders and pays claims for its policyholders, an insurer handles large amounts of money. Insurers invest available funds to generate additional income. Investment income can



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be substantial, particularly during periods of high interest rates or high returns in the stock market. Insurers have investment departments that manage funds to earn the highest possible return from investments while ensuring that funds are secure and available to meet the insurer's obligations.

An insurer has investment funds available for two reasons. First, an insurer is legally required to maintain a certain amount of funds, called policyholders' surplus, to meet its obligations even after catastrophic losses. When the insurer is operating profitably, its policyholders' surplus is generally available for investment.

Second, the insurer usually receives premiums before it pays claims on the corresponding policies. Thus, an insurer can invest premiums and earn additional income until those funds are needed to pay claims. However, when an insurer settles claims, it must have funds readily available to meet its obligations. Similarly, if a policy is canceled before the end of the policy period, the insurer must have funds available to refund the unearned premiums.

## Managing Insurer Expenses

An insurer's expenses fall into two broad categories: expenses associated with underwriting activities and expenses associated with investment activities. Expenses associated with underwriting activities include payment for losses, loss adjustment expenses, and other underwriting expenses. Some insurers also pay dividends to their policyholders. Expenses associated with investment activities include salaries and other general expenses related to running the investment department.

### Underwriting Activity Expenses

The major expense category for most insurers is payment for losses arising from claims. Claims are demands for payment made by insureds based on the conditions specified in their insurance policies. For property-casualty insurers, loss payments often represent 70 percent to 80 percent of their total costs.

Claims are not necessarily settled immediately after a loss occurs. Sometimes the loss is not reported right away. When the loss is reported, the insurer's claim representative investigates the loss and verifies whether it is covered before the insurer pays the claim. Liability claims may involve lengthy legal proceedings. Some losses occur in one year but are settled in a later year. In any given year, an insurer knows only the amount of losses it has paid so far, but not a definite amount it will ultimately pay on claims.

To compare revenue and expenses, an insurer must calculate not only its **paid losses** but also its **incurred losses**. A paid loss is a definite amount. Paid losses do not include those losses in the process of settlement or **incurred but not reported (IBNR) losses**. Therefore, another method of measuring losses is to calculate incurred losses for a particular period using a basic illustration:

#### Paid losses

Losses that have been paid to, or on behalf of, insureds during a given period.

#### Incurred losses

The losses that have occurred during a specific period, no matter when claims resulting from the losses are paid.

#### Incurred but not reported (IBNR) losses

Losses that have occurred but have not yet been reported to the insurer.



$$\text{Incurred losses} = \text{Paid losses} + \text{Loss reserves}$$

Insurers also incur loss adjustment expenses. For property insurance claims, a claim representative must identify the cause of the loss and decide whether the loss is covered by the policy. If the loss is covered, a claim representative must determine the covered amount. For liability claims, a claim representative must determine whether the insured is legally responsible for the bodily injury or property damage that is the basis of the claim and, if so, for how much. Determining the legal responsibility of the insured for a loss might require a complex and costly investigation. In addition to paying covered losses, liability insurers often pay the costs to defend the insured in the event of a lawsuit, regardless of whether the insured is ultimately held responsible for the damages. Thus, loss adjustment expenses associated with a liability claim can be substantial.

In addition to losses and loss adjustment expenses, the costs of providing insurance include significant “other underwriting expenses,” which can apply to multiple departments and can be categorized as these: acquisition expenses; general expenses; and premium taxes, licenses, and fees.

Acquisition expenses—the category of other underwriting expenses associated with acquiring new business—are significant. All property-casualty insurers have a marketing system to market and distribute their products. This system includes individuals involved directly with sales (usually called agents, brokers, producers, or sales representatives) and the administrative staff who manage and support the sales effort.

Many people who directly generate insurance sales for insurers receive a commission. Others receive a salary, or a combination of salary and commission, and sometimes also a bonus based on sales, profit, or some other measure of productivity. While some insurers operate completely or in part without salespeople (usually through direct response systems such as mail, telephone, and the Internet), these insurers must still employ and pay staff to manage and administer their marketing operations. Additionally, various personnel and technical resources are needed to review insurance applications, issue insurance policies, and manage billings. Advertising expenses may also be a significant component of insurer acquisition expenses.

General expenses are the category of other underwriting expenses that insurers incur when underwriting and issuing insurance policies. Although these expenses do not relate directly to activities such as claims, marketing, and underwriting, they are crucial to the insurers’ operations. These general expenses are associated with staffing and maintaining functional departments such as accounting, legal, statistical and data management, actuarial, customer service, information technology, and building maintenance. In addition, insurers must provide the necessary services to support these functions.

Premium taxes, licenses, and fees are another category of other underwriting expenses. In the United States, states levy premium taxes, which are usually



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#### Dividends

The portion of an organization's profits that is paid to shareholders.

a percentage of all premiums generated by the insurer in a particular state. Insurers must hold and pay for licenses in most states in which they operate.

Some insurers choose to return a portion of premiums to policyholders as **dividends**, which may be paid out on a regular basis or may be associated with a special circumstance. Mutual insurers may pay a dividend to policyholders when operating results have been good. Dividends may also be paid by any insurer as a marketing technique. Insurers who want to provide the lowest cost to their policyholders may prefer to accomplish that by paying dividends only after their operating results warrant such payments. In this way, the insurer's solvency is better protected than it would be by charging low rates up front with little margin for error.

## Investment Activity Expenses

An insurer's investment department includes a staff of professional investment managers who oversee the company's investment program and provide accounting of all invested funds. The investment department devises investment strategy and implements it by purchasing and selling stocks, bonds, and other investments. Investment expenses include staff salaries and all other expenses related to the investment department's activities. Insurers deduct these expenses from investment income on their financial statements to calculate the net investment income. Gains or losses realized from the sale of invested assets are added to net investment income, resulting in net investment gain or loss, which represents an insurer's total results from investment activities.

$$\text{Net investment income} = \text{Investment income} - \text{Investment expenses}$$

## Insurer Profitability

Profitability is the ultimate goal of all insurers. Adding net underwriting gain or loss for a specific period to net investment gain or loss for the corresponding period shows an insurer's overall gain or loss from operations—its profitability. Examining the result of this calculation gives a more complete picture of an insurer's profitability than net underwriting gain or loss because net investment gains generally help to offset underwriting losses.

$$\text{Overall gain or loss from operations} = \text{Net investment gain or loss} + \text{Net underwriting gain or loss}$$

An insurer's net income before taxes is the sum of its total earned premiums and investment income minus its total losses and other expenses in the corresponding period. Some adjustments for other income items might be necessary. For example, the insurer might have to write off some uncollected premiums, or it might have to add premiums that were written off during the previous period but were ultimately collected during the current period. Adjustments might also be necessary for a gain or loss on the sale of equipment or other items. Mutual insurers would also deduct dividends to policyholders from their income.



Like other businesses, insurers pay income taxes on their taxable income. Taxable income might differ from net income before taxes because of the special requirements of the tax code. For example, a portion of interest earnings from qualified municipal bonds is not taxed, and deductions for certain expenses are limited. Insurers often adjust their investment strategy in response to changing tax laws.

After an insurer has paid losses and reserved money to pay additional losses, expenses, and income taxes, the remainder is net income, which belongs to the owners of the company. The owners may receive a portion of this remainder as dividends. For a publicly held company, such dividends are payable to the shareholders.

The amount that remains after dividends are paid becomes an addition to the insurer's surplus. Surplus enables the insurer to grow and expand its operations in the future. An insurer that generates adequate return (or profit) will attract and maintain the investment funds it needs to survive and grow.

## **UNDERSTANDING INSURER FINANCIAL STATEMENTS**

To meet their objectives of profitability and continuity for the long term, insurers must carefully monitor their financial performance. Insurers must record and report financial information in a consistent manner, using various financial statements.

To monitor financial performance, insurers and others, including regulators and financial rating organizations (such as A.M. Best Company and Standard & Poor's Corporation), examine insurers' financial statements. Insurers must prepare accurate financial statements that describe the company's financial position in an objective, standardized format. To protect the public's interests, regulators impose requirements on insurers' financial statements to ensure that they do not overstate their true financial condition. Two important financial statements are the balance sheet and the income statement.

### **Balance Sheet**

The balance sheet shows an insurer's financial position at a particular point in time and includes the insurer's assets, liabilities, and policyholders' surplus. See the exhibit "Calladell Insurance Balance Sheet as of December 31, 20XX."

### **Assets**

Insurers accumulate funds when they receive premium and investment income. Insurers do not immediately need all of their premium income to



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| Calladell Insurance Balance Sheet as of December 31, 20XX |       |
|---|-------|
| (All figures are in \$ millions.)                         |       |
| Admitted Assets:  |       |
| Cash and short-term investments                           | 20.1  |
| Bonds   | 67.2  |
| Common stock  | 42.8  |
| Total Admitted Assets                                     | 130.1 |
| Liabilities:  |       |
| Loss reserve and loss expense reserve                     | 16.5  |
| Unearned premium reserve                                  | 5.0   |
| Other liabilities   | 60.1  |
| Total Liabilities   | 81.6  |
| Policyholders' Surplus                                    | 48.5  |
| Total Liabilities and Policyholders' Surplus              | 130.1 |

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#### Assets

Types of property, both tangible and intangible, owned by an entity.

#### Admitted assets

Assets meeting minimum standards of liquidity that an insurer is allowed to report on its balance sheet in accordance with statutory accounting principles.

#### Nonadmitted assets

Types of property, such as office furniture and equipment, that regulators do not allow insurers to show as assets on financial statements because these assets cannot readily be converted to cash at or near their market value.

pay claims and operating expenses. In the meantime, insurers invest them in income-producing assets.

Assets typically accumulated by an insurer include cash, stocks, and bonds; property, such as buildings, office furniture, and equipment; and accounts receivable from policyholders, agents, brokers, and reinsurers. Financial reports filed with state insurance regulators require an insurer's assets to be classified as either admitted assets or nonadmitted assets.

**Admitted assets** are types of property that regulators allow insurers to show as assets on their financial statements. Because these types of assets could easily be liquidated, or converted to cash at or near the property's market value, regulators allow admitted assets to be shown on insurers' financial statements. In addition to cash, admitted assets include stocks, bonds, mortgages, real estate, certain computer equipment, and premium balances due in less than ninety days.

**Nonadmitted assets** cannot be readily converted to cash at or near their market value if the insurer were to liquidate its holdings. For this reason, regulators do not allow insurers to show them as assets on their financial statements. Nonadmitted assets include premiums that are more than ninety days overdue.



## Liabilities

An insurer has a financial obligation to its policyholders: It must satisfy legitimate claims submitted by insureds and other parties. The major **liabilities** of an insurer arise from this financial obligation to pay claims. Three types of liabilities are found on an insurer's financial statements:

- Loss reserve and loss expense reserve
- Unearned premium reserve
- Other liabilities (typically small, miscellaneous obligations)

The **loss reserve** is considered a liability because it represents a financial obligation owed by the insurer. It is the insurer's best estimate of the final settlement amount on claims that have not yet been settled. Although establishing loss reserves for claims whose value is not yet definite might seem impossible, insurers use their experience, the law of large numbers, and their actuarial and statistical expertise to make reliable estimates of future claim settlement values. Insurers also set up the loss expense reserve to estimate the cost of settling the claims included in the loss reserve.

The **unearned premium reserve** is the total of an insurer's unearned premiums on all policies at a particular time. The unearned premium reserve is a liability because it represents insurance premiums prepaid by insureds for services that the insurer has not yet rendered. If the insurer ceased operations and canceled all of its policies, the unearned premium reserve would represent the total of premium refunds that the insurer would owe its current policyholders.

The "other liabilities" category is much smaller than the loss reserve, the loss expense reserve, and the unearned premium reserve. However, some insurers have a significant obligation reflected in the liability for reinsurance transactions.

## Policyholders' Surplus

**Policyholders' surplus** measures the difference between what the company owns (its admitted assets) and what it owes (its liabilities). It provides a cushion that is available should the insurer have an adverse financial experience. While premiums may include a margin for error, that margin might not be sufficient to offset unexpected losses, particularly catastrophic losses. If losses exceed expectations, the insurer must draw on its surplus to make required claim payments. Policyholders' surplus also provides the necessary resources if the insurer decides to expand into a new territory or develop new insurance products. Thus, the amount of policyholders' surplus an insurer holds is an important measure of its financial condition.

Although a balance sheet shows an insurer's assets and liabilities only as of a particular date, the figures change constantly. Insurers establish unearned premium reserves for premiums they receive. The unearned premium reserve for each policy declines with the passage of time. Also, losses occur and insur-

### Liabilities

Financial obligations, or debts, owed by a company to another entity, usually the policyholder in the case of an insurer.

### Loss reserve

An estimate of the amount of money the insurer expects to pay in the future for losses that have already occurred and been reported, but are not yet settled.

### Unearned premium reserve

An insurer liability representing the amount of premiums received from policyholders that are not yet earned.

### Policyholders' surplus

Under statutory accounting principles (SAP), an insurer's total admitted assets minus its total liabilities.



ers establish loss reserves. New policies are written, and old policies expire or are renewed. Meanwhile, the insurer buys and sells stocks, bonds, and other investments as needed to meet its obligations while earning investment income. Therefore, an analysis of an insurer's assets and liabilities is only current at the date of the balance sheet, which presents a snapshot of the financial position of the insurer at that point in time.

## Income Statement

An insurer's income statement shows the insurer's revenues, expenses, and net income for a particular period, usually one year. It compares the revenues generated with the expenses incurred to produce those revenues. The income statement lists these items:

- Revenues—earned premiums
- Expenses—incurred losses, loss adjustment expenses, and other underwriting expenses (acquisition expenses; general expenses; and premium taxes, licenses, and fees)
- Net underwriting gain or loss—earned premiums less total expenses
- Net investment income—investment income less investment expenses
- Net income before income taxes—net underwriting gain (loss) plus net investment income

In the income statement depicted for Calladell Insurance, its revenues from earned premiums during the year totaled \$14.5 million. In the same year, the insurer's expenses totaled \$20.3 million. These expenses included incurred losses; loss adjustment expenses; acquisition expenses; general expenses; and premium taxes, licenses, and fees. Because its losses and underwriting expenses exceeded its earned premiums, Calladell experienced a net underwriting loss of \$5.8 million. However, Calladell also earned net investment income of \$13 million during the year. Therefore, Calladell Insurance realized a net income gain of \$7.2 million before income taxes. See the exhibit "Calladell Insurance Income Statement for the Year Ending December 31, 20XX."



**Calladell Insurance Income Statement for the Year Ending December 31, 20XX**

(All figures are in \$ millions.)

Revenues:

|                 |      |
|-----------------|------|
| Earned Premiums | 14.5 |
|-----------------|------|

Expenses:

|                 |      |
|-----------------|------|
| Incurred losses | 13.4 |
|-----------------|------|

|                          |     |
|--------------------------|-----|
| Loss adjustment expenses | 3.1 |
|--------------------------|-----|

Other underwriting expenses:

|                      |     |
|----------------------|-----|
| Acquisition expenses | 2.0 |
|----------------------|-----|

|                  |     |
|------------------|-----|
| General expenses | 1.4 |
|------------------|-----|

|                                   |     |
|-----------------------------------|-----|
| Premium taxes, licenses, and fees | 0.4 |
|-----------------------------------|-----|

|                |      |
|----------------|------|
| Total expenses | 20.3 |
|----------------|------|

|                              |       |
|------------------------------|-------|
| Net Underwriting Gain (Loss) | (5.8) |
|------------------------------|-------|

|                       |      |
|-----------------------|------|
| Net Investment Income | 13.0 |
|-----------------------|------|

|                                |     |
|--------------------------------|-----|
| Net Income Before Income Taxes | 7.2 |
|--------------------------------|-----|

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## ANALYZING INSURER FINANCIAL RATIO CALCULATIONS

Comparing two items produces a ratio that highlights a particular aspect of financial performance. Several such ratios are widely used in the insurance industry by many people and organizations.

Property-casualty insurers examine their financial performance ratios to identify strengths and weaknesses in their operations. Investors analyze the ratios to identify the insurers that are most attractive as investments. Regulators examine the ratios to determine whether insurers have the financial strength to remain viable in the long term and to meet their financial obligations to policyholders and other parties. Insurance producers gauge an insurer's financial condition as one factor when selecting insurers with which they place business. Individual insurance company ratios are developed and calculated by insurers' actuaries using a variety of financial reporting programs and statistical gathering tools. The accuracy of the gathered and reported financial information, analyzed via ratios, is particularly important from both regulatory and investment perspectives.



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These ratios are used to measure an insurer's profitability:

- Loss ratio
- Expense ratio
- Combined ratio
- Investment income ratio
- Overall operating ratio

## Loss Ratio

### Loss ratio

A ratio that measures losses and loss adjustment expenses against earned premiums and that reflects the percentage of premiums being consumed by losses.

The **loss ratio** compares an insurer's incurred losses and loss adjustment expenses to its earned premiums for a specific time period.

Maintaining a reasonable loss ratio helps ensure an insurer's profitability. Insurers may set a target for their loss ratio and then analyze the ratio periodically by examining the components of the loss ratio and determining any necessary changes to help meet the target ratio. For example, at the beginning of a year, management decided to target a 70 percent loss ratio for the year. As each month progressed, the loss ratio was recalculated, based on the company's experience to date, to determine whether the insurer was meeting the targeted 70 percent.

The result of the loss ratio is converted into a percentage and the ratio indicates the proportion of earned premiums that is used to fund corresponding losses and their settlement. If an insurer is not meeting its loss ratio target, it should review each component of the loss ratio to determine changes it might implement to better meet its target and improve its financial health.

An insurer could examine the total losses it incurred and consider how it might reduce that amount. An insurer could review the types of insurance that it writes and evaluate the loss potential for those types or the territories where it writes that insurance. For example, auto insurance in California is highly susceptible to losses, so an insurer might consider the effect of reducing the volume of personal and commercial auto insurance it writes in California and increasing the volume of auto insurance it writes in areas less susceptible to losses. Likewise, the insurer might consider its exposure to catastrophic storms. If it writes a high volume of property insurance along the Florida coasts that are susceptible to hurricane-driven winds, the insurer might consider increasing the volume it writes in areas less susceptible to hurricane winds.

In consideration of the loss adjusting expense component of its loss ratio, an insurer should examine any circumstances that could increase its loss adjustment expenses. An insurer might have higher than average loss adjustment expenses in general—perhaps because of its overhead costs or legal fees incurred, and need to reassess its claim processes in these areas. Alternatively, handling losses in areas hit hard by catastrophes requires additional spending because of damage to the infrastructure in the catastrophe area. Computer



transmission equipment, cell phone towers, and telephone lines may not be available; therefore manual estimating of losses, handwritten loss drafts, and manual delivery services may result in the need for more processing staff, added costs, and additional loss adjusting expenses. These issues suggest that insurers should limit their volume of business in catastrophe areas. Any excessive loss adjusting expenses reduce an insurer's overall profit.

An insurer should also examine its earned premium and determine whether its pricing is appropriate based on the losses and loss expenses it incurs. An insurer might be able to improve its profitability by increasing its premiums, if it can do so and still remain competitive. If increased pricing is not an option, an insurer might improve its earned premium by expanding to write other types of insurance that might have less competition and have the potential to increase the insurer's earned income. Offering new, innovative types of insurance might offer a solution.

As it reviews each component of the loss ratio, an insurer should consider how any changes it implements could affect the loss ratio and, ultimately, its financial health.

Financial analysts use various tools to calculate loss ratios following a prescribed formula, as illustrated:

$$\text{Loss ratio} = \frac{\text{Incurred losses (including loss adjustment expenses)}}{\text{Earned premiums}}$$

## Expense Ratio

The **expense ratio** compares an insurer's incurred underwriting expenses to its written premiums in a specific time period.

When converted into a percentage, the expense ratio indicates the proportion of an insurer's written premiums that is used to pay acquisition costs; general expenses; and premium taxes, licensing, and fees. This ratio indicates an insurer's general cost of doing business as a proportion of the premiums it has written. (Investment income and investment expenses are not part of either the loss ratio or the expense ratio.)

The expense ratio gives a general picture of how efficiently an insurer is operating. Insurers examine their expense ratios routinely to manage their cash flow and control expenses. An insurer might set a target amount for its expense ratio, such as 25 percent. It would then monitor its earned premiums and its underwriting expenses and make any changes to better meet its target ratio.

The written premium component of the expense ratio might suggest that an insurer should increase its written premiums while managing its growth by staying the course with a plan developed previously to support its growth mode.

### Expense ratio

An insurer's incurred underwriting expenses for a given period divided by its written premiums for the same period.



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By examining the expense ratio, an insurer might determine that it needs to reduce its acquisition costs. For example, an insurer might discontinue an agency incentive program that generates higher acquisition costs in commissions for new business, but from which the business that results is not profitable or is less profitable because it is not retained for subsequent policy terms.

Alternately, the general expense component of the expense ratio might suggest that the insurer should reduce costs in that area. For example, an insurer might offer an employee incentive program to encourage employees to work more efficiently and make fewer errors. Or, an insurer might install modern cost-saving devices, such as thermal, sealed reflective windows and automatic, timed light switches, in its buildings to reduce its utility costs. This reduction of expenses helps to increase the insurer's overall profit.

Written premiums are used in the expense ratio instead of earned premiums (as in the loss ratio) because many of the underwriting expenses insurers incur involve acquisition expenses, which occur at the beginning of the policy period. Written premiums recognize the entire premium as soon as it is written; therefore it is appropriate for comparing expenses to revenues. Financial analysts use various tools to calculate expense ratios following a prescribed formula, as illustrated:

$$\text{Expense ratio} = \frac{\text{Incurred underwriting expenses}}{\text{Written premiums}}$$

## Combined Ratio

### Combined ratio

A profitability ratio that indicates whether an insurer has made an underwriting loss or gain.

The basic **combined ratio** is determined by adding the loss ratio to the expense ratio. The combined ratio is one of the most commonly used measures of insurer profitability, as it reflects the efficiency with which an insurer is being run by comparing its premiums earned (cash inflows) to its total cash outflows (incurred losses and loss adjustment expenses) generated by its insurance underwriting operations.

When combined ratios are calculated by organizations, the results are decimal expressions such as 0.70 or 1.15. In insurance-industry vernacular, these ratios are typically expressed without the decimals, such as "70" or "115," much as one might express that a baseball player is "batting 333" when the mathematical calculation of getting one hit in each three at-bats results in a batting average of 0.333. An insurer's combined ratio of 70 percent indicates that for every \$1.00 in premium it earned, it paid \$0.70 for losses and expenses.

For profitability, insurers set target combined ratios that are ideally less than 100. Insurers, regulators, investors, and others use insurers' combined ratios to determine how closely an insurer's actual loss experience compares to its expected loss experience.



The combined ratio is considered the accepted measure of an insurer's underwriting performance, even though it does not take into account the insurer's investment income. The lower the combined ratio, the better it is for an insurer. Most insurers consider a combined ratio under 100 to be acceptable, because it indicates a profit from underwriting, even before investment income is considered. In fact, many insurers regularly experience a combined ratio over 100 and attempt to offset underwriting losses with investment income. Overall financial performance includes the results from both an insurer's underwriting activities and its investment activities.

Within the insurance industry, the combined ratio is used to compare profitability among insurers of varying sizes (an insurer's size does not affect the ratio). Consequently, the combined ratio is meaningful to investors and regulators, and it provides a measure to be used in benchmarking and in trending. For example, if the industry as a whole experiences difficulty because of losses or a poor economic environment in terms of expenses for a particular year, most insurers' combined ratios for that year would reflect this. An insurer that maintains a lower combined ratio for that year would stand out as an exceptional insurer.

Financial analysts use various tools to calculate combined ratios following a prescribed formula, as illustrated:

$$\text{Combined ratio} = \text{Loss ratio} + \text{Expense ratio}$$

## Investment Income Ratio

The **investment income ratio** compares the amount of net investment income (investment income minus investment expenses) with earned premiums over a specific period.

The investment income ratio indicates the degree of success achieved in an insurer's investment activities. The more successful an insurer's investment activities are, the higher the ratio. The investment income ratio is affected by an insurer's ability to manage its investments and select a balanced blend of investments (stocks, bonds, real estate, and so forth) so that investment income (dividends, interest, and other earnings) is regulated over time. The investment income ratio is also affected by the phases in the underwriting cycle and by other financial market considerations. When the property-casualty insurance industry goes through a trough in the underwriting cycle, insurers' competitive price cutting results in reduced underwriting profit, making investment income crucial to insurers' profitability. Conversely, when stock prices plummet and other investments in the market are depressed (as in a recession), underwriting gains are essential to insurers' profitability and financial well being.

Financial analysts use various tools to calculate investment income ratios following a prescribed formula, as illustrated:

**Investment income ratio**  
Net investment income  
divided by earned premiums  
for a given period.



$$\text{Investment income ratio} = \frac{\text{Net investment income}}{\text{Earned premiums}}$$

## Overall Operating Ratio

The overall operating ratio is the combined ratio (loss ratio plus expense ratio) minus the investment income ratio (net investment income divided by earned premiums) and can be used to provide an overall measure of the financial performance of an insurer for a specific period.

Actuaries subtract the investment income ratio from the combined ratio because, realistically, investment income offsets an insurer's losses and underwriting expenses. For example, if the combined ratio was 115 (a loss), and the investment ratio was 25 (a profit), then the overall operating ratio would be 90 ( $115 - 25$ ). Of all the commonly used ratios, the overall operating ratio is the most complete measure of insurer financial performance.

To obtain a true picture of an insurer's financial health, overall operating ratios for a number of years should be analyzed. An insurer might have a single bad year that is offset by a pattern of profitability over a longer period.

Financial analysts use various tools to calculate overall operating ratios following a prescribed formula, as illustrated:

$$\text{Overall operating ratio} = \text{Combined ratio} - \text{Investment income ratio}$$

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### Apply Your Knowledge

Janet is a regional underwriting manager for Calladell Insurance and wants to determine how successful her team of underwriters has been in selecting profitable new business over the past nine months.

Which one of these ratios can Janet examine to best determine Calladell's underwriting profitability?

- a. Loss ratio
- b. Combined ratio
- c. Investment ratio
- d. Expense ratio

*Feedback:* b. The combined ratio is considered the accepted measure of an insurer's underwriting performance or profitability because it provides a snapshot of the insurer's income from its underwriting operations (earned premium) with the costs it incurs in generating the income (expenses) and the costs of providing the service promised in the insurance contract (loss payments and the expenses associated with those losses)—essentially, the insurer's costs of doing business. An insurer's revenue and underwriting expenses are unique compared with the revenue and expenses of other types



of business. The loss ratio and expense ratio are important components of the combined ratio, but neither gives the full picture of the insurer's underwriting results or profitability.

If Calladell's combined ratio was 95, what would that mean to Janet?

- a. This would indicate that Calladell's underwriting operation was profitable over the nine-month period.
- b. This would indicate that Calladell's underwriting operation was not profitable over the nine-month period.
- c. This would indicate that Calladell's underwriting expenses exceeded its underwriting profit for the nine-month period.
- d. This would indicate that Calladell's underwriting profit exceeded its underwriting expenses for the nine-month period.

*Feedback:* a. A combined ratio of less than 100 (such as 95) indicates that Calladell achieved an underwriting profit over the nine-month period. To determine the relationship between underwriting expenses and underwriting profit, Janet would need to know the loss ratio and the expense ratio. A combined ratio of 95 percent would indicate to Janet that for every \$1.00 in premium that Calladell earned, it paid \$0.95 for losses and expenses.

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## KNOWLEDGE TO ACTION: FINANCIAL RATIOS AND INSURER FINANCIAL PERFORMANCE CASE

An analysis of an insurer's financial ratios provides a view of the insurer's profitability. Knowing how to apply financial ratios is an important skill. This activity will help you apply financial ratios in a business case. As you progress through this case study, you can check your understanding of the concepts by answering the Knowledge to Action questions.

Leightoff Insurance Company writes commercial property, commercial liability, and workers compensation insurance. Leightoff has suffered underwriting losses for each of the previous two years in its overall book of business and has hired a financial analyst, Maggie, to analyze the company's underwriting results using its financial ratios for the end of the current year. Maggie must be prepared to explain to Leightoff's management her analysis and any changes she recommends for future years.



## Overview of the Procedure

To determine whether Leightoff achieved an underwriting gain for the year and, if so, the causes of this outcome, Maggie must perform these steps:

- Examine the company's loss ratio
- Examine the company's expense ratio
- Analyze the company's combined ratio

To complete the process, Maggie uses Leightoff's partial financial statement for the end of the year. For simplicity, assume that all of Leightoff's policies are renewed annually and that it issues its policies with a January 1 effective date. See the exhibit "Leightoff Insurance Income Statement for the Year Ending December 31, 20XX."

| <b>Leightoff Insurance Income Statement for the Year Ending December 31, 20XX</b> |  |      |
|---|--|------|
| (All figures are in millions of U.S. dollars.)                                    |  |      |
| Revenues:   |  |      |
| Earned premiums   |  | 28.7 |
| Expenses:   |  |      |
| Incurred losses   |  | 18.5 |
| Loss adjustment expenses  |  | 3.0  |
| Other underwriting expenses:  |  |      |
| Acquisition expenses  |  | 5.2  |
| General expenses  |  | 2.5  |
| Premium taxes, licenses, and fees   |  | 0.3  |
| Total expenses  |  | 29.5 |

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## Examine the Loss Ratio

To determine Leightoff's combined ratio, Maggie must first calculate Leightoff's loss ratio. To perform the loss ratio calculation, Maggie reviews the income statement to obtain Leightoff's earned premium (\$28.7 million), its incurred losses (\$18.5 million), and its loss adjustment expenses (\$3 million). She determines that Leightoff's loss ratio is 0.749, which is expressed as 75 percent. While this ratio is acceptable, Maggie determines that Leightoff could take some actions to reduce its loss ratio.



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### **Knowledge to Action**

Leightoff proposes to take the following actions in the next year. Determine which of these actions could improve Leightoff's loss ratio, and explain how the ratio would be affected.

- a. Leightoff will implement a risk control services program that rewards commercial policyholders for implementing practices that reduce their commercial property, commercial liability, and workers compensation losses.
- b. Leightoff will invest a greater volume of its policyholders' surplus in stocks to generate higher earnings.
- c. Leightoff will add workers compensation services for its policyholders that exceed the benefits offered by its competition and enable it to charge higher premiums.
- d. Leightoff will implement a "green" initiative for all of its buildings that includes installing solar panels and similar improvements to reduce heating and cooling costs.

*Feedback:* a. and c. To improve its loss ratio, Leightoff should find means to increase its earned premium and/or to decrease its losses and loss adjusting expenses. Implementing a risk control services program for policyholders could reduce the amount of losses that Leightoff must pay, and offering additional workers compensation services to its policyholders could enable Leightoff to charge higher premiums, leading to an increase in its earned premiums. Stock investments would not have an effect on the loss ratio, and a "green" initiative to control Leightoff's general expenses would not affect its loss ratio.

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### **Examine the Expense Ratio**

To determine Leightoff's combined ratio, Maggie must next calculate Leightoff's expense ratio. Because all of Leightoff's policies are annual and are issued effective January 1, they all expire on January 1 of the following year. Therefore, Leightoff's written premium is nearly equal to its earned premium at the end of the year (assume it is equal for the expense ratio calculation).

To perform the expense ratio calculation, Maggie reviews the income statement to obtain Leightoff's written (earned) premium (\$28.7 million) and its incurred underwriting expenses. Leightoff's underwriting expenses include acquisition expenses of \$5.2 million; general expenses of \$2.5 million; and premium taxes, licenses, and fees of \$0.3 million. Maggie determines that Leightoff's expense ratio is 0.279, which is expressed as 28 percent. While this ratio is acceptable, Maggie determines that Leightoff could take some actions to further reduce its expense ratio.



### ***Knowledge to Action***

Leightoff proposes to take the following actions in the next year. Determine which of these actions could improve Leightoff's expense ratio, and explain how the ratio would be affected.

- a. Leightoff will hire an experienced investment manager to balance its investment portfolio and regulate its investment earnings.
- b. Leightoff will implement a quality control program for its employees that rewards error-free work products and reduces the need for and cost of rework.
- c. Leightoff will discontinue a costly agency visitation program requiring underwriters to travel extensively and will instead encourage the use of electronic communications.
- d. Leightoff will implement a policy requirement that policyholders use arbitration instead of litigation to settle disputes on property values in loss settlements.

*Feedback:* b. and c. Leightoff should find ways to increase its earned premium and/or to decrease its "other underwriting expenses" (acquisition and general expenses, premium taxes, licenses, and fees). Implementing a quality control program for employees that rewards error-free work and reduces the cost of rework would help decrease Leightoff's general expenses. Discontinuing a costly agency visitation program would reduce its acquisition costs. Both of these actions would reduce Leightoff's expense ratio. An investment manager could help increase investment earnings or their stability, and an arbitration requirement for property value disputes could reduce loss adjusting expenses, but neither of these activities would affect Leightoff's expense ratio.

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## **Analyze the Combined Ratio**

To determine Leightoff's combined ratio, Maggie must use the amounts she has calculated for Leightoff's loss ratio (75 percent) and expense ratio (28 percent). Maggie calculates the ratio as 103 percent.

### ***Knowledge to Action***

Explain how each of these actions that Leightoff expects to implement could improve its combined ratio.

- Leightoff will review the profitability of each type of insurance it writes and increase the volume written of the most profitable types while reduc-



ing the volume written of the least profitable types by nonrenewing policies of those types that exceed a specified loss threshold.

- Leightoff will reward its most productive employees with pay increases and control its operating costs by requiring each department to reduce its expenses for the next year by 5 percent.

*Feedback:* Leightoff's combined ratio of 103 percent indicates that Leightoff has suffered an underwriting loss of 3 percent for the year. This means that for every \$1.00 in premium it earned, Leightoff has paid \$1.03 for losses and expenses. If Leightoff increased the volume of the most profitable types of insurance it writes and reduced the volume of the nonprofitable types it writes by nonrenewing policies with excessive losses, its earned premiums will increase and its losses and loss adjustment expenses will decline. The result will be an improved combined ratio. Rewarding productive employees will help with retention of valuable staff and reduce hiring costs, while a required reduction in departmental budgets can help lower other operating costs.

These actions could improve Leightoff's combined ratio, which is a crucial measure of an insurer's profitability for investors and regulators.

## SUMMARY

For an insurer to survive long term and grow, its revenue must exceed its expenses. An insurer must manage its revenue and expenses to produce an overall income gain (revenue minus expenses) from its operations and to ensure profitability.

The balance sheet, which measures an insurer's financial position, shows the insurer's assets, liabilities, and policyholders' surplus on a given date, such as the last day of the year. The income statement is a financial statement that shows an insurer's revenues, expenses, and net income for a particular period, usually one year.

Analyzing the relationship of different ratios, the components of the ratios, and how insurers' activities throughout the year can promote overall financial health can help both regulators and investors determine how well insurers are performing. An insurer's actuaries first develop and compile the ratios used in this analysis, including the insurer's loss ratio, expense ratio, combined ratio, investment income ratio, and overall operating ratio.

Understanding the significance of financial ratios and their components can help an insurer monitor its financial health and make necessary changes to improve its financial performance.



