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Mooney-Cohen-Shuster ACCOUNTING AND TAXATION Fourth Edition

Basic  
Concepts of

ACCOUNTING  
and TAXATION of  
Property/Casualty  
INSURANCE  
COMPANIES

*Fourth Edition*

Sean Mooney, Ph.D., CPCU

Larry Cohen, CPA

Addison Shuster, CPA



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*Fourth Edition 1995*

**Sean Mooney, Ph.D., CPCU**  
Insurance Information Institute

**Larry Cohen, CPA**  
The Mutual Life Insurance Company of New York

**Addison Shuster, CPA**  
Coopers & Lybrand



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## Foreword

Because of the interest of legislators, the media and the public in the accounting practices and taxation of property/casualty insurance companies, the Insurance Information Institute Press is publishing this 1995 expanded edition of a book focusing on the subject. This book joins the long list of products of the Institute, whose purpose is to explain subjects relating to the property/casualty insurance industry, a financial linchpin of our society.

In this edition, the book has been revised to include new developments in accounting and taxation. In addition two new chapters have been added. Chapter 7 on life insurance accounting presents the key elements of that topic, so that readers, particularly those with property/casualty insurance backgrounds, can get a sense of how the accounting system works for the life insurance industry.

Chapter 9 on financial ratios describes the key ratios that are used in analyzing and reporting on property/casualty companies. The products of the accounting system end with financial statements. However, managers, analysts and regulators utilize financial ratios based on the accounting products to describe and understand the financial conditions of insurance companies. This chapter provides the reader with an understanding of the major ratios used in the property/casualty insurance industry.

The book was written by Dr. Sean Mooney, the Institute's senior vice president and economist, with the technical assistance of Larry Cohen, CPA, vice president with Mutual of New York, and Addison Shuster, a partner with Coopers & Lybrand. Because the goal for this text was to explain technical ideas in nontechnical language, it was especially important to have Mr. Cohen's and Mr. Shuster's expertise to ensure accuracy.

We are also grateful for the assistance of John Dunn, senior audit manager at Coopers & Lybrand.

The Insurance Information Institute, an educational, fact-finding and communications organization, is committed to expanding its reputation for distilling complex information into coherent, readable text through all of the books of the Insurance Information Institute Press.

Gordon Stewart  
President

# 1 Introduction

**A**ccounting is a system of recording, analyzing and verifying an organization's financial history. It is a means of communicating financial facts to people who need such information to make decisions. Accounting today is a highly technical and complex process with a sophisticated theoretical base and a large body of widely accepted principles and practices.

## The Products of Accounting

Accounting results in two basic products: management reports that serve the needs of decision makers within the company, and financial reports for interested persons outside the company. Investors, creditors, suppliers and other external groups need information to make decisions concerning their relationship with the company. Financial accounting provides information relevant to those decisions, such as how the company has performed this year compared with last year. By evaluating performance (**operating results**), investors and creditors can get guidance on the financial health of the company, and on its ability to grow and prosper. Accounting also provides information about a company's current resources, the claims against those resources, and the effects of business transactions and other events on the company's general **financial condition**. In short, a financial report makes it easier for interested parties to make rational decisions about the company's future and their own.

Accounting is not the same as financial or management analysis. Accounting statements are like a medical checkup — they tell the “temperature,” “blood pressure” and “weight” of a company — but a “doctor” still must interpret the results. For example, an accountant may report that an insurance company has a profit of \$10 million and capital of \$100 million. Given these figures, a financial analyst can then calculate that the rate of return of this company was 10 percent (\$10 million divided by \$100 million). The financial analyst could further conclude that this rate of return was sub-par, since companies in the same business had a much higher rate of return. A discussion of common financial ratios calculated on the basis of accounting data is provided in chapter 9.

A company's financial condition is reported in a **balance sheet**, which gives a picture of the company's economic condition at one moment in time.

In its simplicity and sophistication, the balance sheet has few if any competitors outside the world of science. Its rationale is based on a simple formula: Asset dollars are equal to claims against assets. An asset is anything wholly owned or effectively controlled by a company. For most corporations, claims against these assets are held by two distinct parties, the owners of the company and outside lenders or creditors of the company. The claims or interests of the owners of the company are known as owners' equity. The claims of creditors are called liabilities. Liabilities include major items such as bond issues and bank loans. However, if a typewriter is purchased on credit, the credited amount is considered a liability. Of note, for insurance companies, major claimants against the assets of the corporation are policyholders and others who have suffered a loss.

The word “balance” in “balance sheet” refers to the concept behind this document, the fact that any addition to or deduction from the total of the asset side of the balance sheet results in an equal rise or decline on the equity and liability side. An increase in total assets will cause an equal increase either in the creditors' claims (the company's debts, for example) or in the owners' equity. If

the value of total assets declines, the owners usually take the loss, but the company still has the same obligations to its creditors, whose claims remain unchanged. In summary, the balance sheet consists of three parts: assets, liabilities and owners' equity.

A company's operating results are presented in an **income statement**, a record of operating activities during the preceding year. The income statement records the revenues received from sales and the costs involved in making those sales, as well as other expenses and sources of profit, such as taxes and investments.

The income statement is typically followed by the annual retained earnings statement. This is essentially a statement of how the owners' equity changed during the course of the year. At its simplest, it shows the accumulated retained earnings at the end of the previous year and adds to that the current year's net profit, less dividend payments, to arrive at a current accumulated retained earnings figure. This figure also appears in the owners' equity section of the balance sheet.

The annual financial report of a company is developed from data gathered through daily bookkeeping procedures. These procedures record such details as the purchase of a typewriter and the receipt of a check from a customer. A basic principle of bookkeeping is double entry. If cash is spent to purchase a typewriter, then this transaction is recorded in two places. It is recorded as a reduction in the cash account and as an increase in another asset account, such as one for office equipment. This double entry system is a very powerful control and checking mechanism, and it also serves to preserve the basic balance sheet equality between total assets and total claims against assets.

The financial report of a company deals with the broad general categories, which have been developed from the detailed bookkeeping process. Throughout this book, we will be discussing these broad categories.

## Fundamental Accounting Principles

All corporate accounting is governed by rules established by the Financial Accounting Standards Board (FASB) and the American Institute of Certified Public Accountants (AICPA). Publicly-owned companies are required by the Securities and Exchange Commission to follow these rules.

These generally accepted accounting principles (GAAP) require, for example, that financial reports be understandable by knowledgeable people and include all significant information (full disclosure). Other general principles require that accounting procedures be consistent and objective. Practical principles set rules for, among other things, determining the value of assets and the point in time when revenues (a payment in advance, for example) become earned income (on delivery of the product or service). The latter is known as the **revenue recognition principle**. The basic concept of revenue recognition is that revenue is recorded at the time when an exchange is made or service is provided — a newspaper sold or a concert performed — rather than when payment is made.

One practical principle is of particular importance. The **matching principle** is a basic principle of GAAP accounting, the usual form of accounting for nearly all businesses. This principle deals with matching expenses with revenue: It indicates when expenses should be recorded. The matching principle states that, in determining net income for a given period, the accountant should match expenses with associated sales or revenue generated in that period. For example, a magazine publisher does not earn the money paid for subscriptions until the magazines have been delivered to their buyers (revenue recognition principle). Under the matching principle, the publisher's expenses for stocks of ink, paper, and other items are not charged against income at the time of purchase, but only when they have been used to produce delivered magazines.

The assumption behind the matching principle is that a company may have to make sizable payments before it can make a single sale associated with those expenditures. If those expenditures were imme-

diately charged against the company's assets, the company might appear to be in a very poor financial condition when, in fact, it held substantial inventory and was on the verge of making a sizable profit.

GAAP recognize that industries' accounting needs vary and that some require special accounting practices. Mining corporations, for example, use special procedures to report the peculiar fact that their inventory, their stock in trade, is irreplaceable.

Other industries have significant responsibilities to the general public that go beyond GAAP's basic concern for investors. These industries — utilities, banking and insurance, for example — are usually also subject to extensive regulation by public authorities. To this extent, accounting systems have been developed to meet specific regulatory requirements for greater disclosure and other special needs of the public.

As one of these special industries, property/casualty insurance has specific statutes and regulations setting out accounting requirements. The effect of these practices, known as statutory accounting, is to emphasize the insurance company's present solvency, not its potential for profit. This solvency emphasis is aimed at ensuring that a company will have sufficient readily available assets to meet all anticipated insurance obligations. Under these requirements, an insurance company is required to recognize certain major expenses, such as agents' commissions, before the income generated by them is earned.

This conservative approach reflects the viewpoint that the role of an insurance business is in many respects comparable to that of a fiduciary. A fiduciary, in law, is a person who is legally obligated to discharge faithfully a responsibility of trust toward another. Similarly, an insurance company has a responsibility of trust toward its policyholders. Insurance regulation allows for moderate profit-making by well-managed companies, but the underlying assumption of regulation is that the role of the insurance business is to protect other people's assets — even at the expense of shareholders.

This solvency focus of property/casualty insurance accounting is basic to regulators. To fully understand this regulatory perspective on

insurance accounting, it is necessary to look briefly at the history of insurance with particular reference to the development of insurance regulation.

### **The Regulatory Origins of Insurance Accounting**

Property and casualty insurance is basically a sharing of risks so that, in the event of a loss, the burden is not borne by one individual or business alone, but is shouldered by a large number of other people as well. This sharing of the risk is explicitly recognized in the mutual form of insurance company, which is owned by its policyholders. Other (stock) companies are owned by shareholders, who put their capital at risk alongside the premium-paying policyholders. In either case, the essence of insurance is mutuality, since insurers collect payments from many people who face similar risks, and those payments help to cover the losses of victims.

As modern insurance practices began to develop in medieval Europe, both forms of insurance — strictly mutual and stock ownership — grew up side by side. Medieval merchant and craft guilds established funds to cover the fire and shipwreck losses of their members, and communities created reserves to pay for fire losses. Marine insurance was flourishing in Italy in the 14th century and spread rapidly throughout Europe. A marine insurance contract was usually signed by several insurers, under a line drawn on the contract. This is the origin of the term “underwriter.” Stock companies began to sell insurance in England in the early 18th century and similar companies soon sprang up in the American colonies. Liability insurance, that is, insurance against claims arising from harm caused by the insured to the person or property of another, did not appear until about the middle of the last century.

Increasing prosperity in the late 18th and early 19th centuries made insurance necessary for a larger number of people. The Industrial Revolution saw an immense increase in the value of plant and equipment and made both more expensive to replace in the event of fire or other disaster. The expansion of trade and the greater

volume of goods transported increased the size of potential transit losses, while at the same time the value and amount of personal property increased for ever-growing numbers of people.

The expansion of insurance followed, and many private insurance companies were formed to fill the need for broader coverage with higher limits. Competition among these early companies was fierce and sometimes led to unrealistic premium rates designed to undercut competitors. Rates were sometimes set so low that insurers were, in effect, operating below cost. Sometimes, they went out of business. However, even conservative companies were hard pressed to determine expected losses. The experience and sophisticated mathematical tools that today enable actuaries to anticipate losses within more or less predictable margins of error were in their infancy in the early days of insurance. The consequences of early insurance practices were sometimes catastrophic. A small company with too many policies written in one locale and a capital base depleted by the costs of trying to sell ever more policies, could easily be wiped out by a single disaster. The first fire insurance company in America, established in 1735, was rendered bankrupt by a major fire loss six years later.

As it became increasingly clear that the solvency of insurance companies was an essential element of public confidence in future stability, public authorities stepped in to oversee the industry. The first formal insurance regulatory body was established by New Hampshire in 1851. Within two decades, at least 18 other states had formed similar regulatory bodies and at least nine more had laws relating to insurance regulation on their books. Today, statutory regulatory bodies operate in all 50 states, the District of Columbia, and the offshore territories of the United States. Their functions, then and now, have been to license insurance companies, to monitor their activities, to approve the forms and conditions of policies, and to oversee the setting of premium rates so that they are neither unreasonably high nor so low as to threaten insurance companies' solvency.

The early regulation of the insurance industry demonstrates that the general public and the business community saw the industry in a

special light. It stood outside the general American objection to the government regulation of private enterprise, an objection that was particularly strong in the latter half of the 19th century. Insurance was seen as not just another service provided by entrepreneurs, but a vital underpinning for the growth and well-being of the American economic system.

One of the reasons that it is so important to regulate insurance is that it sells its product before most of the costs of the product have been incurred. Most corporations expend funds to develop and manufacture products with the hope of selling them at a price higher than their costs. It is easy to accurately measure the costs as they are incurred. The risk to management is whether the sales price, which must be estimated during the manufacturing phase, exceeds the cost incurred. The opposite occurs with insurance. Management of an insurance company must estimate future costs for paying claims at the point the policy is sold. Their revenues can be specifically measured at this date. The costs incurred subsequently for paying claims are difficult to calculate. Because insurance companies get cash from the general public up front in return for the promise to pay claims, in some cases, many years later, it is especially important to the public that management act prudently to ensure the solvency of the company.

State regulation was strengthened in 1869 when the U.S. Supreme Court, in the case of *Paul vs. Virginia*, ruled that insurance was not a transaction in interstate commerce. That ruling meant that the insurance business did not fall under the interstate commerce clause of the Constitution and thus was not subject to federal regulation. Nevertheless, there were numerous challenges to the 1869 Supreme Court decision as well as reviews by Congressional committees. Ultimately, the ruling was overturned in 1944, when the Supreme Court determined that the South-East Underwriters Association (SEUA) was in violation of the Sherman Anti-Trust Act and guilty of price-fixing and restraint of trade. The SEUA had been founded and supported by insurance companies to study patterns of

losses and to set rates for different kinds of property insurance. Those rates were then adopted by insurance companies with the approval of the southeastern state regulatory bodies.

The ruling in the SEUA case was a severe blow both to the insurance industry and to the primary assumptions of state regulation. As noted above, one of the functions of insurance regulators was to see that premium rates generated sufficient revenues to cover potential losses. Rate setting is a complex and expensive statistical operation that smaller companies cannot perform efficiently themselves, even if they have sufficient capital to finance the process. Because the validity of loss statistics increases in proportion to the number of cases considered, it made excellent sense for insurance companies to pool their loss experiences and to determine adequate rates. Many states required insurance companies to belong to and use the rates set by such associations as SEUA.

Congress moved swiftly to protect the insurance industry from the worst effects of the Supreme Court ruling and to preserve the principle of state regulation. In 1945, it passed the McCarran-Ferguson Act, which declared that federal fair trade and antitrust laws would apply to the insurance industry only "to the extent that such business is not regulated by state law." To meet the provisions of this act, state legislatures soon passed new laws relating to insurance regulation based on a model developed by the National Association of Insurance Commissioners (NAIC). As a result, present insurance statutes and regulatory procedures are similar from state to state.

The general agreement among the states on fundamental regulatory principles, together with the basic unity of accounting principles, has led to a general uniformity in accounting procedures among the states. This uniformity is largely the work of the NAIC, founded in 1871 as the National Convention of Insurance Commissioners. One of the first acts of that organization was to establish a permanent committee to develop a uniform accounting method for insurance companies, and over the years the Convention and its successor

(the NAIC) continued to develop and refine insurance accounting with the aim of improving regulators' knowledge of the stability and solvency of individual companies.

Insurance accounting is called **statutory accounting** because its practices are prescribed or permitted by law or statute. Generally, the basic assumptions and practices of statutory accounting are similar to those of ordinary business accounting under generally accepted accounting principles. Where variations do occur, they usually are extensions of the emphasis on current solvency.

## 2 Elements of P/C Insurance Accounting

The basic source of information on an insurance company is the annual financial report, called the Annual Statement. Since this is a lengthy and detailed document, it is perhaps better first to get a broad overview of the financial accounting system used by insurance companies. Therefore, this chapter begins with a highly simplified schematic description of the flow of revenue and expenses in a property/casualty insurance company on a statutory accounting basis. (See next page.)

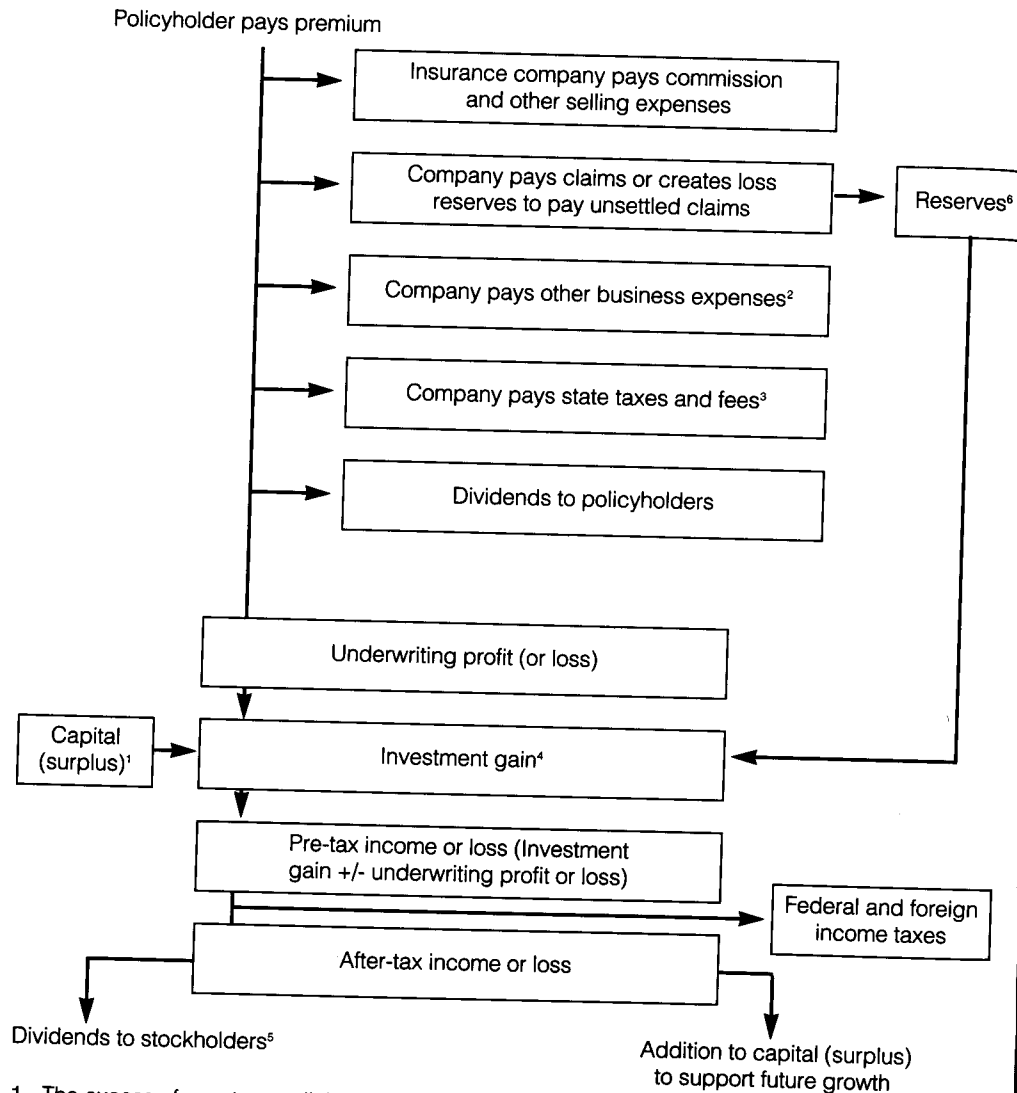
### Revenues and Expenses

An insurance company must establish a **policyholders' surplus** account of a certain amount in order to be granted a license by the state in which it intends to be domiciled. This surplus consists of capital paid in for stock and a capital surplus (the amount paid for stock over par value) or, in a mutual company, of amounts loaned or paid into the company by policyholders to create the surplus. The policyholders' surplus serves both as an extra base of resources in case of catastrophic unexpected losses and as the company's working capital for expansion.

Premiums paid by policyholders are the primary source of insurance revenues. These premiums are classified as deferred revenues and assigned to an **unearned premium reserve**. They become earned income on a pro rata basis over the life of the policies. By way

**Revenue/Expense Flow Diagram**

Property/Casualty Insurance Companies (A Simplified Model)



1. The excess of assets over liabilities.
2. Costs of doing business—rent, data processing, telephones, salaries, etc.
3. State and local taxes, licenses and fees.
4. Includes interest, dividends, rents and realized capital gains. Investment income is earned on investments which are financed by the premium dollars set aside to pay claims and by the company's capital.
5. Applies only in the case of capital stock companies.
6. Reserves arise from two sources: unearned premiums and claims. Unearned premiums are not shown in this diagram in the interest of simplicity.

of contrast, the company charges the whole of the commission immediately after the policy is written, rather than on a pro rata basis. This differs from GAAP accounting where the expense is charged to income in relation to the premium earned. The solvency emphasis of statutory accounting views agents' commissions as funds that will not be available to pay claims and so requires that they be immediately expensed.

The premiums that remain are used for several purposes. The largest portion goes to pay **claim losses** and another significant expenditure goes to cover loss **adjustment expenses** (such as adjusters' fees and litigation costs). An additional amount is used to pay expenses of underwriting the business. What remains of earned premiums after these expenses have been accounted for is called the **underwriting profit** (or loss). Underwriting profits may be further subject to distribution to policyholders in the form of dividends. With certain types of insurance, dividends may be paid even though the company was not profitable.

Besides the profit (or loss) that a company makes on its underwriting operations, it may also gain income from investments. Funds, which arise mainly from surplus and from premiums which are held until the payments are made for losses, are invested, primarily in stocks and bonds. The income from these investments including realized gains or losses is added to the underwriting income to produce the **net pre-tax income** (or loss) of the company. Following the deduction of policyholder dividends and federal and state income taxes, the **net after-tax income** (or loss) is derived. After-tax income may be used to pay dividends to stockholders or added to the policyholders' surplus where it will be used to finance further growth.

**The Annual Statement**

The details of a company's assets, liabilities, surplus, and operating results for the year are reported in the Annual Statement, known as the **Convention Blank**, developed by the National Association of

Insurance Commissioners. This statement is sometimes called the "yellow blank" because of its yellow cover, which distinguishes it from the "blue blank" used by life insurance companies. The statement is an 133-page document designed to elicit information about all aspects of the property and casualty insurer's business.

After an introductory first page, which lists the name of the company and its officers and directors, pages 2 and 3 are a balance sheet, and the fourth page is a statement of income followed by a "Capital and Surplus Account," which shows the major components of change in the policyholders' surplus from year end to year end. This "Capital and Surplus Account" section is equivalent to the retained earnings statement in the financial report of a manufacturing company. These four pages are reproduced on the following pages.

The income statement and "Capital and Surplus Account" make up the first page of an eight-page "Underwriting and Investment Exhibit". This exhibit first sets out details of the company's income from investments currently on the books and its capital gains and losses from liquidated investments. Four pages of the exhibit are devoted to details of premium revenues, losses and loss adjustment expenses. This information is set out by line of insurance, for example, fire, homeowners, workers compensation, etc. The premiums earned during the year, changes in the unearned premium reserve, and the net value of premiums for policies written during the year are spelled out in detail. (Net premiums are those remaining after the company has reinsured some policies with other companies.)

Losses include not only the money paid out on claims but also known claims that have not been settled and accidents that have occurred and not been reported to the company. The latter losses for each insurance line are displayed in a column titled, "Incurred But Not Reported" (IBNR). In many cases, there is a considerable delay between the occurrence of an accident and when it is reported to an insurance company. Extreme examples occur in the area of medical malpractice where a claim for an error in an operation may not

**ANNUAL STATEMENT**  
For the Year Ended December 31, 1994  
OF THE CONDITION AND AFFAIRS OF THE

NAIC Group Code \_\_\_\_\_ NAIC Company Code \_\_\_\_\_ Employer's ID Number \_\_\_\_\_

Organized under the Laws of the State of \_\_\_\_\_,  
using \_\_\_\_\_ as the Port of Entry, made to the

**INSURANCE DEPARTMENT OF THE STATE OF**

PURSUANT TO THE LAWS THEREOF

Incorporated \_\_\_\_\_ Commenced Business \_\_\_\_\_

Statutory Home Office \_\_\_\_\_,  
(Street and Number) (City or Town, State and Zip Code)

Main Administrative Office \_\_\_\_\_,  
(Street and Number) (City or Town, State and Zip Code)

Mail Address \_\_\_\_\_,  
(City or Town, State and Zip Code) (Area Code) (Telephone Number)

Primary Location of Books and Records \_\_\_\_\_,  
(Street and Number) (City or Town, State and Zip Code)

Annual Statement Contact \_\_\_\_\_,  
(City or Town, State and Zip Code) (Area Code) (Telephone Number)

(Name) (Area Code) (Telephone Number) (Extension)

**OFFICERS**

President \_\_\_\_\_ Vice Presidents \_\_\_\_\_

Secretary \_\_\_\_\_

Treasurer \_\_\_\_\_

**DIRECTORS OR TRUSTEES**

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

State of \_\_\_\_\_ }  
County of \_\_\_\_\_ } ss  
\_\_\_\_\_, President, \_\_\_\_\_, Secretary, \_\_\_\_\_, Treasurer

of the \_\_\_\_\_ being duly sworn, each deposes and says that they are the above described officers of the said insurer, and that on the thirty-first day of December last, all of the herein described assets were the absolute property of the said insurer, free and clear from any liens or claims thereon, except as herein stated, and that this annual statement, together with related exhibits, schedules and explanations therein contained, annexed or referred to are a full and true statement of all the assets and liabilities and of the condition and affairs of the said insurer as of the thirty-first day of December last, and of its income and deductions therefrom for the year ended on that date, and have been completed in accordance with the NAIC annual statement instructions and accounting practices and procedures manuals except to the extent that: (1) state law may differ; or, (2) that state rules or regulations require differences in reporting not related to accounting practices and procedures, according to the best of their information, knowledge and belief, respectively.

\_\_\_\_\_, President \_\_\_\_\_, Secretary \_\_\_\_\_, Treasurer \_\_\_\_\_

Subscribed and sworn to before me this

\_\_\_\_\_ day of \_\_\_\_\_, 1995

a. Is this an original filing? Yes [ ] No [ ]

b. If no:

1. State the amendment number \_\_\_\_\_

2. Date filed \_\_\_\_\_

3. Number of pages attached \_\_\_\_\_

**BASIC CONCEPTS OF INSURANCE ACCOUNTING**

Form 2 ANNUAL STATEMENT FOR THE YEAR 1994 OF THE

<b>ASSETS</b>	1 December 31, 1994	2 December 31, 1993
1. Bonds (less \$ ..... liability for asset transfers with put options) .....		
2. Stocks:		
2.1 Preferred stocks .....		
2.2 Common stocks .....		
3. Mortgage loans on real estate .....		
4. Real estate:		
4.1 Properties occupied by the company (less \$ ..... encumbrances) .....		
4.2 Other properties (less \$ ..... encumbrances) .....		
5. Collateral loans .....		
6.1 Cash on hand and on deposit .....		
6.2 Short-term investments .....		
7. Other invested assets .....		
8. Aggregate write-ins for invested assets .....		
8a. Subtotals, cash and invested assets (Lines 1 to 8) .....		
9. Agents' balances or uncollected premiums:		
9.1 Premiums and agents' balances in course of collection .....		
9.2 Premiums, agents' balances and installments booked but deferred and not yet due .....		
9.3 Accrued retrospective premiums .....		
10. Funds held by or deposited with reinsured companies .....		
11. Bills receivable, taken for premiums .....		
12. Reinsurance recoverables on loss and loss adjustment expense payments .....		
13. Federal income tax recoverable .....		
14. Electronic data processing equipment .....		
15. Interest, dividends and real estate income due and accrued .....		
16. Receivable from parent, subsidiaries and affiliates .....		
17. Equities and deposits in pools and associations .....		
18. Amounts receivable relating to uninsured accident and health plans .....		
20. Aggregate write-ins for other than invested assets .....		
21. TOTALS (Lines 8a through 20) .....		
<b>DETAILS OF WRITE-INS</b>		
0801. ....		
0802. ....		
0803. ....		
0898. Summary of remaining write-ins for Line 8 from overflow page .....		
0899. Totals (Lines 0801 thru 0803 plus 0898) (Line 8 above) .....		
2001. ....		
2002. ....		
2003. ....		
2098. Summary of remaining write-ins for Line 20 from overflow page .....		
2099. Totals (Lines 2001 thru 2003 plus 2098) (Line 20 above) .....		

**ELEMENTS OF P/C INSURANCE ACCOUNTING**

Form 2 ANNUAL STATEMENT FOR THE YEAR 1994 OF THE

<b>LIABILITIES, SURPLUS AND OTHER FUNDS</b>	1 December 31, 1994	2 December 31, 1993
1. Losses (Part 3A, Line 32, Column 5) .....		
1A. Reinsurance payable on paid loss and loss adjustment expenses (Schedule F, Part 1, Col. 1) .....		
2. Loss adjustment expenses (Part 3A, Line 32, Column 6) .....		
3. Contingent commissions and other similar charges .....		
4. Other expenses (excluding taxes, licenses and fees) .....		
5. Taxes, licenses and fees (excluding federal and foreign income taxes) .....		
6. Federal and foreign income taxes (excluding deferred taxes) .....		
7. Borrowed money .....		
8. Interest, including \$ ..... on borrowed money .....		
9. Unearned premiums (Part 2A, Line 34, Column 5) (after deducting ceded reinsurance unearned premiums of \$ .....)		
10. Dividends declared and unpaid:		
a. Stockholders .....		
b. Policyholders .....		
11. Funds held by company under reinsurance treaties (Schedule F, Col. 14, Part 3) .....		
12. Amounts withheld or retained by company for account of others .....		
13. Provision for reinsurance (Schedule F, Part 7) .....		
14. Excess of statutory reserves over statement reserves (Schedule P Interrogatories) .....		
15. Net adjustments in assets and liabilities due to foreign exchange rates .....		
16. Drafts outstanding .....		
17. Payable to parent, subsidiaries and affiliates .....		
18. Payable for securities .....		
19. Liability for amounts held under uninsured accident and health plans .....		
20. Aggregate write-ins for liabilities .....		
21. Total liabilities (Lines 1 through 20) .....		
22. Aggregate write-ins for special surplus funds .....		
23A. Common capital stock .....		
23B. Preferred capital stock .....		
23C. Aggregate write-ins for other than special surplus funds .....		
24A. Surplus notes .....		
24B. Gross paid in and contributed surplus .....		
24C. Unassigned funds (surplus) .....		
24D. Less treasury stock, at cost:		
(1) ..... shares common (value included in Line 23A \$ .....)		
(2) ..... shares common (value included in Line 23B \$ .....)		
25. Surplus as regards policyholders (Lines 22 to 24C, less 24D) (Page 4, Line 32) .....		
26. TOTALS (Page 2, Line 21) .....		
<b>DETAILS OF WRITE-INS</b>		
2001. ....		
2002. ....		
2003. ....		
2098. Summary of remaining write-ins for Line 20 from overflow page .....		
2099. Totals (Lines 2001 thru 2003 plus 2098) (Line 20 above) .....		
2201. ....		
2202. ....		
2203. ....		
2298. Summary of remaining write-ins for Line 22 from overflow page .....		
2299. Totals (Lines 2201 thru 2203 plus 2298) (Line 22 above) .....		
23C01. ....		
23C02. ....		
23C03. ....		
23C98. Summary of remaining write-ins for Line 23C from overflow page .....		
23C99. Totals (Lines 23C01 thru 23C03 plus 23C98) (Line 23C above) .....		

**UNDERWRITING AND INVESTMENT EXHIBIT  
STATEMENT OF INCOME**

1  
1994

2  
1993

**UNDERWRITING INCOME**

- 1. Premiums earned (Part 2, Line 32, Column 4) .....
- DEDUCTIONS
- 2. Losses incurred (Part 3, Line 32, Column 7) .....
- 3. Loss expenses incurred (Part 4, Line 22, Column 1) .....
- 4. Other underwriting expenses incurred (Part 4, Line 22, Column 2) .....
- 5. Aggregate write-ins for underwriting deductions .....
- 6. Total underwriting deductions (Lines 2 through 5) .....
- 7. Net underwriting gain or (loss) (Line 1 minus 6) .....

**INVESTMENT INCOME**

- 8. Net investment income earned (Part 1, Line 15) .....
- 9. Net realized capital gains or (losses) (Part 1A, Line 11) .....
- 9A. Net investment gain or (loss) (Lines 8 + 9) .....

**OTHER INCOME**

- 10. Net gain or (loss) from agents' or premium balances charged off  
(amount recovered \$..... amount charged off \$.....)
- 11. Finance and service charges not included in premiums (Schedule T, Column 8 total) .....
- 12. Aggregate write-ins for miscellaneous income .....
- 13. Total other income (Lines 10 through 12) .....
- 14. Net income before dividends to policyholders and before federal and foreign income taxes (Lines 7 + 9A + 13) .....
- 14A. Dividends to policyholders (Exhibit 3, Line 16, Column 1, plus Page 3, Line 10b, Column 1 minus Column 2) .....
- 14B. Net income, after dividends to policyholders but before federal and foreign income taxes (Line 14 minus 14A) .....
- 15. Federal and foreign income taxes incurred .....
- 16. Net income (Line 14B minus 15) (to Line 18) .....

**CAPITAL AND SURPLUS ACCOUNT**

- 17. Surplus as regards policyholders, December 31 previous year (Page 4, Line 32, Column 2) .....

**GAINS AND (LOSSES) IN SURPLUS**

- 18. Net income (from Line 16) .....
- 19. Net unrealized capital gains or (losses) (Part 1A, Line 12) .....
- 20. Change in non-admitted assets (Exhibit 2, Line 31, Col. 3) .....
- 21. Change in provision for reinsurance (Page 3, Line 13, Column 2 minus 1) .....
- 22. Change in foreign exchange adjustment .....
- 23. Change in excess of statutory reserves over statement reserves (Page 3, Line 14, Column 2 minus 1) .....
- 24. Capital changes:
  - a. Paid in (Exhibit 3, Column 1, Line 6) .....
  - b. Transferred from surplus (Stock Dividend) .....
  - c. Transferred to surplus .....
- 25. Surplus adjustments:
  - a. Paid in (Exhibit 3, Line 7, Column 1) .....
  - b. Transferred to capital (Stock Dividend) .....
  - c. Transferred from capital .....
- 26. Net remittances from or (to) Home Office (Exhibit 3, Line 4b minus 12b, Column 1) .....
- 27. Dividends to stockholders (cash) .....
- 28. Change in treasury stock (Page 3, Line 24D (1) and (2), Column 2 minus Column 1) .....
- 29. Extraordinary amounts of taxes for prior years .....
- 30. Aggregate write-ins for gains and losses in surplus .....
- 31. Change in surplus as regards policyholders for the year (Lines 18 through 30) .....
- 32. Surplus as regards policyholders, December 31 current year (Lines 17 plus 31) (Page 3, Line 25) .....

**DETAILS OF WRITE-INS**

- 0501. ....
- 0502. ....
- 0503. ....
- 0598. Summary of remaining write-ins for Line 25 from overflow page .....
- 0599. Totals (Lines 0501 thru 0503 plus 0598) (Line 5 above) .....
- 1201. ....
- 1202. ....
- 1203. ....
- 1298. Summary of remaining write-ins for Line 12 from overflow page .....
- 1299. Totals (Lines 1201 thru 1203 plus 1298) (Line 12 above) .....
- 3001. ....
- 3002. ....
- 3003. ....
- 3098. Summary of remaining write-ins for Line 30 from overflow page .....
- 3099. Totals (Lines 3001 thru 3003 plus 3098) (Line 30 above) .....

become known to the claimant or doctor for many years. For example, the defects caused by a faulty delivery at birth may not become known until the teen-age years.

The final page of the exhibit reports all the company's expenses according to whether they were incurred in the process of adjusting claims (loss adjustment expenses), selling and servicing policies (other underwriting expenses), or handling investments (investment expenses). Included in this list of expenses are agents' commissions and employees' salaries, rent, advertising, and all the other normal expenses of a business.

The rest of the Annual Statement is devoted to more detailed disclosure and analysis of the information already presented. For example, all the company's investments, item by item with analyses of their values and other details, are listed on schedules A, B, C and D. The 56 pages of Schedule P are of particular interest. Schedule P is an analysis of the company's premiums and claims experience over the prior 10 years. The schedule deals with the area called **loss development** — how the amount of loss changes between the time it is first estimated and at a later point in time when more information is available or the loss is paid. This information is vital for users of financial statement data, such as regulators, investors and agents, who need to make an assessment of the consistency and effectiveness of those computations. This issue will be covered in the next chapter.

The following chapters will deal with the details of statutory accounting, beginning with a close look at the liability items on the balance sheet.

## 3 Liabilities and Surplus

The balance sheet of an insurance company is basically organized like the balance sheet for any U.S. corporation. The assets of the company are shown on the **asset** side of the balance sheet and the claims against those assets are shown on the **liability** side. Claims against assets are divided into three basic components: liabilities, such as loss reserves which represent the claims of policyholders and others who have suffered loss, liabilities which represent the claims of other creditors, and surplus. For a stock insurance company, surplus is the equivalent of owners' equity and represents the claims of the owners against the assets of the company. Nearly all discussions of balance sheets begin with a look at the asset side of the balance sheet. For an insurance company, however, the best way to understand a balance sheet is to begin by examining liabilities. This fact again illustrates that the primary consideration in insurance accounting is not the company's wealth but its obligations to policyholders.

### Liabilities

The liability side of the Annual Statement balance sheet (see page 23) is primarily made up of three reserve funds: the unearned premium reserve (Line 9), the loss reserve (Line 1) and the loss adjustment expense reserve (Line 2). These reserves form the key elements of an insurance company's financial condition and their

function must be understood if the reader is to gain a clear picture of the nature of statutory accounting.

### Unearned Premiums

The primary source of revenue for property and casualty insurance companies is premium payments made on new and renewed policies. A premium payment, however, is not immediately recognized as income to the company which receives it. On the contrary, it represents an obligation which the insurance company owes to the policyholder and which will be "paid back" in insurance protection over the life of the policy. As the obligation is retired, premium payments are realized as earned income on a **pro rata** basis. For example, a \$360 premium payment for a year of automobile insurance coverage could be earned by the insurer at a rate of \$30 per month over the life of the policy.

Under the generally accepted accounting principle of matching, the costs a company incurred in selling the policy would be accounted for on a similar pro rata basis, with one-twelfth of the costs being charged against the earned premium each month. Under GAAP, a company generally is not required to charge expenses against income it has not yet earned. State insurance regulations, however, do require exactly that: The costs of selling or renewing a policy must be deducted from assets as soon as the new policy is issued. These costs are not allowed to be recognized as an asset because of the solvency emphasis of statutory accounting. Regulators generally only recognize as assets items that can be immediately converted into cash. As a result of this reduction in assets, either the creditors' or owners' equity must show a similar deduction. Since the entire amount of the new or renewed premiums is placed in the unearned premium reserve (Line 9 of the Annual Statement), thus increasing liabilities, the deduction for the costs of sale must come from the owners' equity (in statutory accounting, known as policyholders' surplus). The practical effect of this procedure is to limit sharply an insurance company's capacity to write new policies unless the com-

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20. Aggregate write-ins for liabilities .....		
21. Total liabilities (Lines 1 through 20) .....		

22. Aggregate write-ins for special surplus funds.....		
23.A. Common capital stock.....		
23B. Preferred capital stock.....		
23C. Aggregate write-ins for other than special surplus funds.....		
24A. Surplus notes.....		
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24C. Unassigned funds (surplus).....		
24D. Less treasury stock, at cost:		
(1)..... shares common (value included in Line 23A \$.....)		
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23C99. Totals (Lines 23C01 thru 23C03 plus 23C98) (Line 23C above)		

pany has a sizable fund of surplus capital. State regulators set guidelines on the amount of surplus a company should have in relation to the amount and nature of business it conducts. This topic is discussed on pages 39 and 40 of this chapter.

A very simplified example using a hypothetical new company will help the reader understand this effect. The XYZ Co. started business with the sale of 10,000 shares of common stock on July 1, 1995. The stock had a par value of \$20 a share, but sold for \$100. If all the shares were sold in one day, the company's balance sheet at the end of that day would look like this:

	<b>Assets</b>		<b>Liabilities</b>
Cash	\$ 1,000,000	Unearned premiums	\$ 0
		<b>Surplus</b>	
		Capital paid up	200,000
		Gross paid in and contributed surplus	<u>800,000</u>
		Surplus as regards policyholders	<u>1,000,000</u>
Total assets	<u>\$ 1,000,000</u>	Total liabilities and surplus	<u>\$ 1,000,000</u>

On the first day of regular operations, XYZ sold 10,000 one-year homeowners policies and collected premiums amounting to \$3,000,000. These premiums immediately went into the unearned premium reserve account on the liability side of the balance sheet. (They could not yet be counted as income.) The cash collected was recognized on the asset side of the sheet because it represented an improvement in the company's general capital position. The new balance sheet looked like this:

	<b>Assets</b>		<b>Liabilities</b>
Cash	\$ 4,000,000	Unearned premiums	\$ 3,000,000
		<b>Surplus</b>	
		Capital paid up	200,000
		Gross paid in and contributed surplus	<u>800,000</u>
		Surplus as regards policyholders	<u>1,000,000</u>
Total assets	<u>\$ 4,000,000</u>	Total liabilities and surplus	<u>\$ 4,000,000</u>

The following day XYZ's accountants computed the expenses involved in selling those policies. These expenses included the agent's commissions of 20 percent (\$600,000), and miscellaneous expenses for printing, filling out and mailing the policies, for record keeping, and for paying state tax on premiums. These miscellaneous expenses came to \$150,000, so the total cost of sales was \$750,000. This sum is immediately deducted from cash on the asset side of the balance sheet, and from the policyholders' surplus on the other side. In the surplus account, the expense is deducted from "Unassigned Funds." This account is similar to the retained earnings account for a non-insurance business.

<b>Assets</b>		<b>Liabilities</b>	
Cash	\$ 3,250,000	Unearned premiums	\$ 3,000,000
(\$ 3,250,000 =		<b>Surplus</b>	
\$ 4,000,000 less		Capital paid up	200,000
\$750,000)		Gross paid in and	
		contributed surplus	800,000
		Unassigned surplus	( 750,000)
		Surplus as regards	
		policyholders	250,000
Total assets	<u>\$ 3,250,000</u>	Total liabilities and surplus	<u>\$ 3,250,000</u>

In spite of the fact that XYZ did \$3,000,000 worth of business, it suffered an immediate \$750,000 decline in its surplus before paying any claims. If it continued to sell policies at the same rate, it would soon exhaust its surplus and would then be unable to write any further policies.

By requiring an insurance company to **defer** the recognition of income from its premium revenues, while recording the expense of obtaining that income, regulations force a company to establish a sizable surplus at inception and to maintain it. That surplus represents the company's capacity to provide protection against unexpected policyholders' losses. If losses are not extreme, the surplus then becomes available to support the sale of new policies for further expansion of the business. In either case, the first step has been

taken toward insuring that the company remains solvent and able to meet its obligations.

To see how this procedure protects the policyholders in the event of large-scale disasters, assume that on July 5, 1995, a massive windstorm destroyed many of the homes insured by XYZ. XYZ adjusters, working rapidly, estimated that total losses amounted to \$1,500,000. Loss adjustment expenses, the costs of determining and settling losses, were estimated at \$100,000. The managers of XYZ recognized that they were facing serious cash flow problems and sold no further policies for the rest of the year. During the six-month period of operation, from July 1 to Dec. 31, 1995, XYZ earned half of the total paid-in premiums (\$1,500,000) and spent \$50,000 on general business expenses. The gross underwriting loss for the six months of operation was \$900,000.

This figure is calculated as follows:

Earned premiums	+ \$ 1,500,000
Less	
Losses:	1,500,000
Loss adjustment expenses:	100,000
Acquisition expenses:	750,000
General business expenses:	50,000
Total losses & expenses	(2,400,000)
Underwriting loss:	<u>(\$900,000)</u>

On December 31, 1995, XYZ's balance sheet looked like this:

<b>Assets</b>		<b>Liabilities</b>	
Cash	\$ 1,600,000	Unearned premiums	\$ 1,500,000
(\$ 3,250,000 less		<b>Surplus</b>	
\$1,650,000— losses,		Capital paid up	200,000
adjustment expenses,		Gross paid in and	
and general business		contributed surplus	800,000
expenses)		Unassigned surplus	(900,000)
		Surplus as regards	
		policyholders	100,000
Total assets	<u>\$ 1,600,000</u>	Total liabilities and surplus	<u>\$ 1,600,000</u>

To keep the arithmetic simple we have assumed that XYZ's cash is not invested and all claims are paid immediately. If cash were invested, an adjustment to reflect interest income would be made to both sides. This would not change the basic conclusions of the analysis.

Unfortunately, XYZ's troubles were far from over. On January 2, 1996, violent weather again swept through the region and destroyed many more insured homes. XYZ adjusters estimated total insured losses at \$950,000 and adjustment expenses at \$50,000. Other XYZ expenses came to \$100,000 for the year. Losses and expenses thus totaled \$1,100,000. So the cash entry on the asset side of the balance sheet is reduced by \$1,100,000.

On December 31, 1996, when XYZ decided to go out of business, its balance sheet looked like this:

<b>Assets</b>		<b>Liabilities</b>	
Cash	\$ 500,000	Unearned premiums	-
	(\$ 1,600,000 less the	<b>Surplus</b>	
	\$1,100,000— losses	Capital paid up	200,000
	and expenses)	Gross paid in and	
		contributed surplus	800,000
		Unassigned surplus	
		(made up of \$900,000	
		loss in 1995 and	
		\$400,000 gain in 1996)	(500,000)
		Surplus as regards	
		policyholders	500,000
Total assets	\$ 500,000	Total liabilities and surplus	\$ 500,000

The asset side is now reduced to \$500,000.

On the liability side, the unearned premium, which was \$150,000, now goes to zero, as all the premium is now earned since the policy period ended July 1, 1996. The company in 1996 has a gain of \$400,000, made up of claims and expense payments of \$1,100,000, which are offset by the premium income of \$1,500,000.

In spite of extraordinary disasters, because statutory regulations

required XYZ to deduct its premium acquisition expenses as they were incurred, the company was soon able to recognize that its surplus was being depleted and stopped writing new business. Thus, secure reserves were maintained and the company met its obligations to its policyholders. The investors in XYZ lost heavily, but the public interest in continuity and stability was well served.

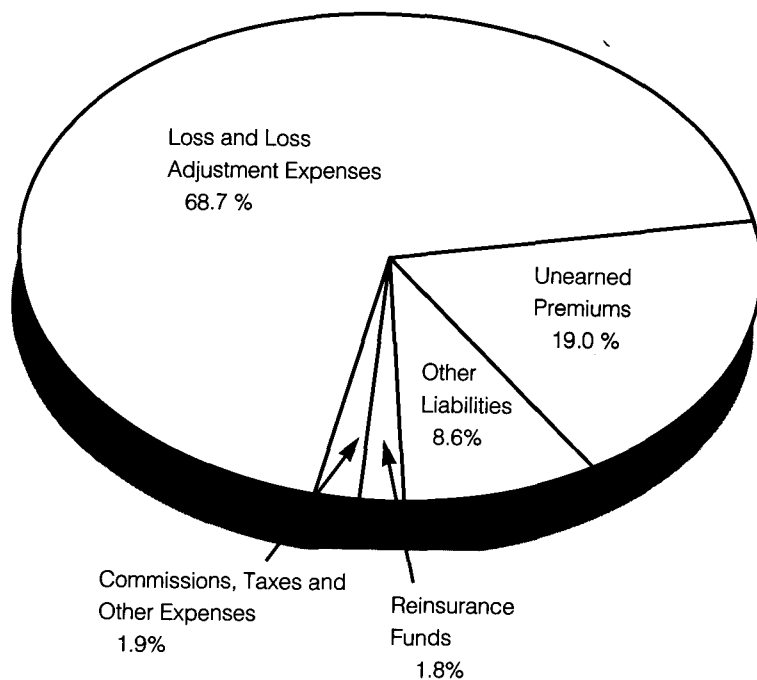
### Loss Reserves

Loss reserves represent liabilities that an insurance company has incurred because of claims. Straightforward claims like fire losses are paid quickly and may require little or no reserving. However, claims involving liability may not be settled for a number of years and money must be retained to pay for them.

Since loss reserves are the single largest liability of insurance companies (see the chart on page 30), they have the greatest and most widespread impact on other aspects of the business. Premiums are earned over the policy period, but claims frequently are paid long after the policy has expired. Estimates of the eventual payments on outstanding claims must be made during the policy period so that profit on the business can be measured currently.

Companies try to calculate accurate reserves levels but they may make errors in judgment. If a company's loss reserves are overestimated, that is, more than adequate but inaccurate, the company's profits will appear to fall, and the company's income taxes may be reduced, and premium rates may be unnecessarily increased. (Premium rates may be increased because the company mistakenly believes that its policies are not priced high enough to cover losses.) If reserves are too low, the company's financial condition will appear better than it is, underwriting profits will be overstated, income taxes will rise, and premium rates may be cut unwisely. In either case, a company may make unwise decisions. Further, inaccurate reserves, particularly those that are too low, ultimately will force accounting recognition which will make the company's profit and loss record appear erratic and its financial condition unstable.

**Proportion of Liabilities of  
P/C Insurance Companies,  
December 31, 1993**



Source: Best's Aggregates and Averages, A.M. Best Co., 1994

It is worth emphasizing here a fundamental distinction between the concept of loss reserves as used by a property/casualty insurance company and the concept of benefit reserves used by a life insurance company. Loss reserves in property/casualty insurance are only set up for accidents or events which have occurred. If a home is destroyed by fire, the insurance company with a policy covering this event will set up a reserve to cover the claim. However, the fire must have occurred for this to be a valid reserve. On the other hand, a life

insurance company typically sets up a benefit reserve long before the insured event, that is, the death of the policyholder, has occurred.

The conceptual distinction between property/casualty insurance accounting and life insurance accounting is of importance to the issue of discounting.

Despite all the advances made in communicating and estimating claims, reserves can never be 100 percent accurate. This is particularly true for liability insurance where the insurance company has agreed to pay the damages for which a person or company is legally liable. In a legal suit many factors are involved in determining damages, so that in an individual case it is difficult to determine the exact size of an award for damages. However, while individual estimates may be off the mark, statistical techniques attempt to ensure that aggregate reserves for all the claims in a particular area will be reasonably accurate.

There are four different kinds of losses involved in computing loss reserves. In ascending order of uncertainty, they are: (1) losses incurred, reported, and settled, but not yet paid; (2) incurred and reported but unsettled property losses in which liability is not an issue; (3) incurred and reported but unsettled losses involving liability and/or bodily injury; and (4) incurred but not reported losses. Each of these categories will be defined further below.

At each higher level, the ultimate amount an insurance company will have to pay out is increasingly less susceptible to accurate estimation and only becomes clear as time passes. The emergence of that ultimate figure is called **loss development**. We will look at the pattern of loss development for each of the four types of losses.

1. Accurate reserves can be set aside for those **losses that have been incurred, reported, and settled, but not yet paid**. In some cases, the bookkeeping involved in preparing payments may simply not be completed by the statement date. Other payments may be spread over a period of time, as in the case of workers compensation payments made to a child under the age of 18 whose father was killed on the job. In some cases, however, these payments may con-

tinue if the child goes to college. If compensation payments are made to a man or woman whose spouse was killed, those payments may continue for life or until remarriage. Thus, elements of uncertainty about the size of the ultimate loss can appear even at this first level. Overall, the liability recorded to pay settled claims generally constitutes only a small proportion of total reserves.

**2. Losses that have been incurred and reported but not settled** usually constitute the greatest portion of the loss reserves.

For lines of simple property insurance — fire, marine, and part of automobile insurance, for example — the amount of the loss can be determined with considerable accuracy fairly quickly and settlement and payment made within a few months at most. Insurance of this sort is called “short-tailed”; that is, it does not take long for the full amount of the loss to become known. Reserves set aside for these short-tailed lines of insurance can be quite accurate.

**3. Incurred and reported but unsettled losses involving liability** and/or bodily injury, typical of long-tailed lines, are more difficult to assess for ultimate loss. For a line like workers compensation it often takes many years before an insurance company can know how much it will have to pay to any one claimant. Consider the example of a young male worker blinded by a chemical in an industrial accident. He will receive compensation for the rest of his life, but how long will his life be? And what further medical expenses arising from the accident may have to be paid during his life? The answers to these questions can, at best, be only educated estimates based on company and industry experience.

While for any individual case the ultimate cost of a claim is difficult to assess, reserves for a large number of similar claims can be reasonably estimated. In the case where compensation is granted for the remainder of a person’s life, actuarial tables on life expectancy are available. These tables may not be accurate for any particular individual but are incredibly accurate over a large number of people. Similarly, medical expenses for an individual injury are difficult to assess, but reasonable estimates can be made for a number of cases

where the same injury is involved.

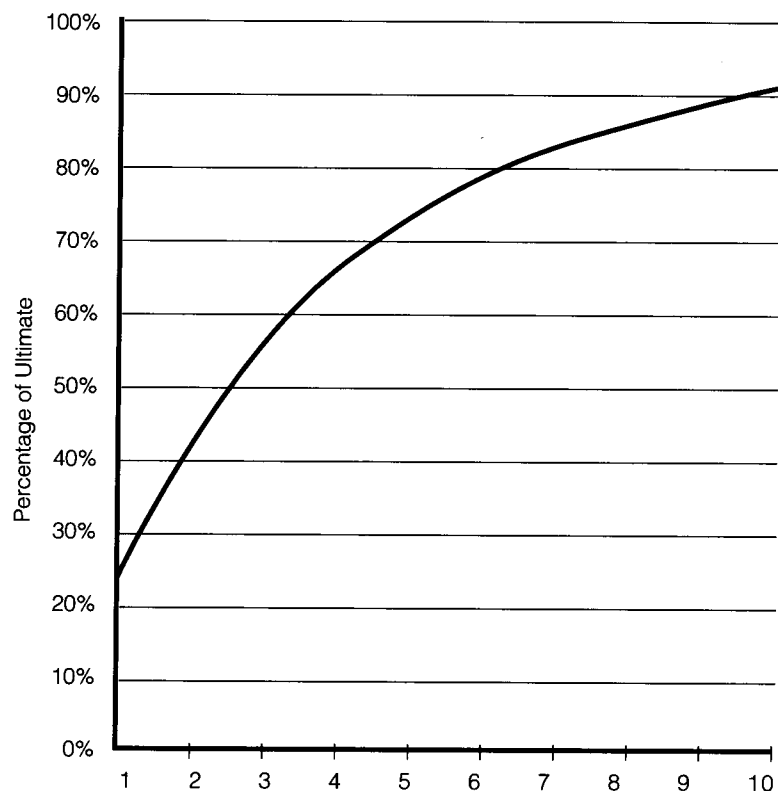
Overall, determining the ultimate costs for general liability insurance does not take as long as for workers compensation, but because the amount of loss may become the subject of litigation, the ultimate size of the loss may far exceed initial estimates. This is particularly true in cases of severe bodily injury where, in recent years, juries have been inclined to grant increasingly large awards to plaintiffs. Also, if two or more insurance companies are involved, there may be some uncertainty as to how much of the award, if any, each will have to pay.

The diagram on page 34 shows the pattern of reporting general liability losses. In the first year less than 30 percent of ultimate cost is reported in general liability. Five years after the losses are incurred, over 70 percent of the ultimate cost of losses has become clear. By the tenth year practically all of the claims have been reported.

**4. The most uncertain element of loss reserves is that created by losses which have been incurred but not reported (IBNR).** Some of these IBNR losses are simply those that occurred shortly before the statement date. Although industrial accidents, automobile crashes, fires and other losses already had taken place, they were not reported by the end of the business day, December 31. These losses can be roughly estimated on the basis of a company’s experience in previous years. More difficult to estimate are the incidents and hence the losses which occurred as much as a year or even 10 years previously. The best known example of this kind of loss is the sudden emergence a few years ago of massive losses among construction workers who had inhaled asbestos particles. The initial event took place when the workers were taking that dust into their lungs, but in many cases health problems were not diagnosed, and thus not reported, for 30 or more years. Today’s chemically hazardous world exacerbates the problems involved in calculating IBNR losses.

## Loss Development Pattern

General Liability



Source: 1993 Reinsurance Association of America Loss Development Study

## Calculating Loss Reserves

How then are loss reserves calculated? There is no uniform procedure. At least five basic methods have been identified, and each has several variations. The results of any one method are also subject to adjustments suggested by the experience and best judgment of those responsible for calculating loss reserves. Several or all of the methods may be used by companies depending on the line of insurance, state law and management preference.

The process of establishing accurate loss reserves frequently begins with the **case-basis method**, which is simply an attempt to estimate the probable loss involved in each reported claim. The

claims adjuster makes an initial estimate based on such factors as the circumstances of the event, the possibility of litigation, the legal merits of each party's position, and any other elements that may affect the final settlement. This method is fairly accurate for short-tailed property losses. However, although essential, it is less reliable when an insurer establishes a new line of insurance and has little or no data about loss development in that line. Nevertheless, the case-basis method is fundamental to the reserving process because it establishes the initial data base that underlies all other methods. The case-basis method is the one principally used for reserving liability claims. Under a system of case reserving, a bulk reserve may also be set up by management. This reserve allows for situations where adjusters are found to be consistently optimistic or pessimistic in determining reserves.

The **average-value method** is a variation of the case-basis method. In each insurance line, claims are categorized according to some typology of significant factors. In automobile property damage cases, for example, such factors might include the make, model and year of the car, the characteristics of the claimant, etc. With enough settled cases of one type, an average value for losses of that type can be computed. The reserves necessary for that type then can be established simply by multiplying the number of cases outstanding by the average case value. Further adjustments may be required for inflation, for rising court awards and for other reasons. The average-value method can be reasonably accurate in determining reserves, particularly when used to establish reserves for short-tailed property claims.

Another technique often used for short-tailed claims is known as the **fast-track method**. Generally, this method involves establishing a bulk reserve for losses which are expected to be small and quickly settled. A bulk reserve may be based on a certain percentage of premiums for a line of insurance. If case data later reveal that a particular claim is larger or longer-tailed than certain specified limits, that claim will then be reserved using another method.

A **formula method** may be used to calculate reserves in any line, but is most frequently used for long-tailed lines. An example of a formula is the loss ratio between losses and earned premiums. This method is widely required by state law to determine minimum reserves for liability and workers compensation lines. The formula computation of reserves in these categories is included in Schedule P of the Annual Statement. That schedule sets minimum reserves based on the company's experience and some statistical limits. The reserves determined by NAIC state-imposed formulas are called **statutory reserves**. The computation formula to calculate statutory reserves is included in Schedule P.

Companies do not have to use a state-imposed formula for their internal or nonstatutory accounting. Companies establish reserves based on their best estimates, subject to a minimum statutory formula for reserves. If the reserve required by the state-imposed formula is greater than the company's estimates, the company must record the difference on a separate line (14) — "Excess of statutory reserves over statement reserves." (See page 23 of this book.) If statement reserves exceed statutory reserves, no entry is made on that line.

IBNR loss reserves may either be calculated as projections of one of the above methods or extrapolated from the company's past experience with IBNR requirements in each line. A company may also establish supplemental or bulk reserves in each line as a safeguard against underestimation. In this process the casualty actuary's involvement is critical since sound judgment is of basic importance in this field.

In spite of the care and detail that go into loss reserve estimation, companies sometimes find themselves faced with deficiencies in their reserves — in one or more lines. This situation creates an immediate drain on assets and policyholders' surplus and can turn underwriting profits into underwriting losses. The establishment of higher reserves in such emergencies also creates difficulties with policyholders and state regulators if higher premium rates are

required to improve a company's reserve position.

Net loss reserves are reported net of reinsurance on Line 1 of page 3 of the Annual Statement. Part 3A provides details on unpaid losses (reserves), including data on reinsurance.

### **Reserves for Loss Adjustment Expenses**

Loss adjustment expenses (LAE) include the fees or salaries paid to claims adjusters, fees paid to investigators, their travel and other expenses, legal fees, and any other costs associated with settling claims.

Estimated LAE are of two types — those allocated by claim, many of which are paid for services provided by outside insurance adjustment companies and professionals, and unallocated expenses which cover general adjustment costs incurred within the company. Loss adjustment expenses vary considerably from company to company, and from line of business to line of business, but historically average about 10 to 20 percent of the size of losses. In recent years, the cost of settling claims has increased, largely due to increasing litigation expenses, particularly in liability insurance.

### **Other Liabilities**

Most of the other liabilities on the balance sheet (for example, taxes, borrowed money, foreign exchange adjustments) need no explanation. A few items, however, may not be clear to the layman. These include the following:

**Contingent commissions** are those sums payable to individual agents and brokers whose sales have proved to be particularly profitable or long-lasting in the sense that the policies are renewed again and again. On the balance sheet, a liability is set up for sums owed but not already paid under this item.

**Other expenses** include all incurred business expenses that have not yet been paid, except for taxes and fees, loss adjustment expenses, and commissions. In other words, "Other expenses" include any due but unpaid common business expenses.

A number of liability items have to do with **reinsurance** — insurance for insurance companies. The reinsurance business is an important segment of the insurance industry and represents a spreading of risks among insurance companies. There are several types of reinsurance, but all usually involve the acceptance by an **assuming reinsurer** of a portion of the risks underwritten by the original or **ceding insurer**. In the case of unauthorized reinsurance, the contracts (often called treaties) for such reinsurance often provide that the ceding company withhold from the reinsurance premiums due the assuming company all or a part of unearned premiums and loss reserves associated with the ceded insurance. These withheld funds are, in effect, collateral against any future payments that the ceding company would be entitled to receive from the reinsurer. They are, however, legally owed to the assuming reinsurer and so must appear as liabilities. The funds retained by the ceding company are “funds held by company under reinsurance treaties” (Line 11).

Loss reserve calculations take into account expected receipts on loss claims against assuming reinsurers. When these claims are against companies authorized to do business in the same state as the ceding company (and thus under the supervision of the same regulators), the anticipated claims are allowed to stand as a reduction of liabilities.

For example, take the case of a company which estimates a loss at \$1,000,000. The primary company is fully legally liable to pay this loss. Under its reinsurance treaty, 80 percent of this loss, or \$800,000, will be paid by its authorized reinsurer. Since the other \$800,000 is a claim by the ceding company against the reinsurer, the company will only increase its net loss reserves for this claim by \$200,000. Claims against unauthorized reinsurers are not accepted as reductions of liabilities unless secured by letters of credit or other forms of collateral.

Since 1989, insurance companies must also make a calculation for a reserve against expected uncollectible reinsurance based on

overdue balances, and report it on the balance sheet as a liability (Line 13). This topic is discussed in chapter 4. The Annual Statement also contains lines which are not titled. These **optional lines** are used for many different items. These may include entries to record special situations in order to meet the full disclosure requirements of statutory practices. However, the optional lines are far more likely to reflect variations in the accounting practices of individual companies.

### **Policyholders' Surplus**

The balance sheet entries regarding surplus funds (Lines 22-25) on page 3 of the Annual Statement are relatively easy to understand.

Stock insurance companies are financed initially through the sale of stock, classified as either common or preferred. The par value of the common stock sold is shown on Line 23A of page 3; for preferred stock, Line 23B. If the stocks were originally sold at a premium (that is, a price in excess of par value), that excess will be shown on Line 24B as Gross paid in and contributed surplus.

Mutual insurance companies are organized and owned by their policyholders. They do not issue capital stock, and, thus, show no entry for capital on Line 23A or 23B of page 3. The original net worth of a mutual company consists only of surplus paid in by the original policyholders, or an interested party who wishes to get the mutual company into operation. These amounts are shown on Line 24B.

All states require an insurance company to have a minimum capital and gross surplus before the company can open its doors for business. Companies also must continue to maintain a minimum capital and surplus once operations have begun. Under a procedure known as risk-based capital (RBC), insurance companies are required to hold a level of capital based on the size and riskiness of its business. The RBC formula for property/casualty companies reflects a number of factors including the riskiness of the company's investments, its lines of business and reserving practices, and

money owed to it by reinsurers. Life insurance companies are required to report their RBC beginning with their 1993 financial reports; property/casualty companies begin reporting with the financial reports of 1994.

“Unassigned funds” or the free surplus (Line 24C) reflects the net accumulated retained earnings of the company. Any dividends to stockholders the company might pay will come out of this free surplus.

Line 22 provides for a variety of special surplus fund accounts. For example, these special surpluses may include guaranty or insolvency funds. When a property/casualty insurer becomes insolvent, all states have a mechanism to cover claims against an insolvent insurance company. Payment of these funds is usually not required (New York is the only exception) until an insolvency actually occurs.

The next to the final line of the surplus section of the balance sheet (Line 25) is “Surplus as regards policyholders,” the sum of the other entries in this section. This title is strictly accurate only in the case of a mutual insurance company, in which the policyholders are the owners of the company. For a stock company, this line records the stockholders’ equity. However, the term “surplus as regards policyholders” underscores the regulatory view that an insurance company’s first obligation is not to its owners but to its policyholders.

## 4 Assets

About 90 percent of an insurance company’s assets are income-producing investments — stocks and bonds, real estate, mortgages, collateral loans and a variety of other possible items including cash deposits. Many states put limits on the percentage of investments in any one of these categories and most limit the amount invested in any one company or type of security. Generally, these rules are intended to ensure prudent investment and to force a reasonable degree of diversification. As a result of this prudent oversight on the part of regulators and insurance company management, the assets of property/casualty insurance companies are relatively secure. For example, less than 1 percent of the industry’s assets are in junk bonds and less than 3 percent are in real estate.

The assets held by insurance companies produce a flow of investment income, in the form of interest payments, dividends and capital gains. In recent years, for the industry as a whole, investment income has been the only source of profit as companies have been deep in the red on their underwriting account. Investment income is clearly a vital component of the solvency and profitability of the insurance industry.

In statutory accounting some items that would appear on the asset side of the balance sheet under GAAP are excluded by law. These **nonadmitted assets** usually are either illiquid (not easily turned into cash) or not allowed by statute. Among illiquid assets are

premiums overdue by 90 days or more, and office equipment and furniture (with the exception, in most states, of computer equipment). Among the assets not allowed by statute are certain kinds of investments or amounts in excess of statutory limits for certain kinds of securities. Notes or accounts receivable which are collateralized by an asset that is not an investment allowed by statute for an insurance company are also excluded. These exclusions from the asset side of the balance sheet are reflected on the other side by a direct charge against policyholders' surplus. An increase in nonadmitted assets (Line 20, page 4 of the Annual Statement) will cause a decrease in policyholders' surplus, and vice versa.

**Admitted assets** are listed on page 2 of the Annual Statement (see the two next pages).

**Bonds**

Bonds normally will make up over 50 percent of a company's investments (see chart on page 45), and at least one-third of these bonds usually will be the relatively secure bonds issued by local and state government bodies. The income from this kind of bond is not taxed by the federal government. The mix in insurance companies' bond portfolios tends to change with underwriting profitability. When underwriting is profitable, investment in tax-exempt bonds increases; when underwriting is losing money, investment tends to move toward higher yield and taxable corporate and government bonds. Changes in tax law also affect portfolios. For example, the Tax Reform Act of 1986 included a tax on a portion of the income from state and municipal bonds. This change led some companies to decrease their holdings of tax-exempt state and local bonds.

How are bonds valued? In statutory accounting, bonds basically are valued at amortized cost. In GAAP accounting, following a rule published by the Financial Accounting Standards Board, bonds are valued at cost or market depending on the investment motive of the holder.

The amortized cost valuation method works as follows.

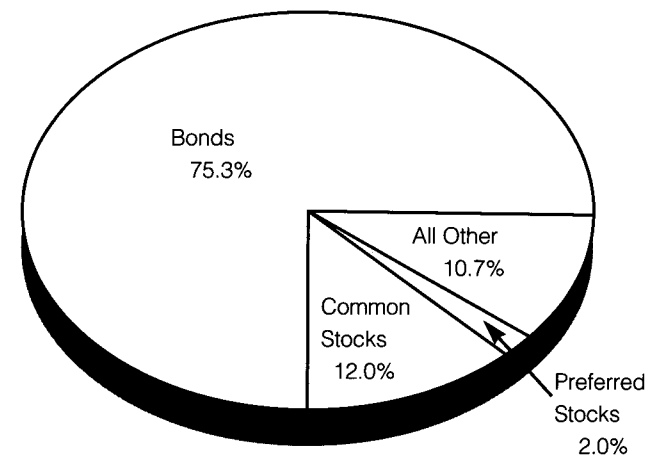
If an insurance company pays \$98,000 for a bond with a face

Form 2 ANNUAL STATEMENT FOR THE YEAR 1994 OF THE

ASSETS	1	2
	December 31, 1994	December 31, 1993
1. Bonds (less \$..... liability for asset transfers with put options)		
2. Stocks:		
2.1 Preferred stocks.....		
2.2 Common stocks.....		
3. Mortgage loans on real estate.....		
4. Real estate:		
4.1 Properties occupied by the company (less \$..... encumbrances).....		
4.2 Other properties (less \$..... encumbrances).....		
5. Collateral loans.....		
6.1 Cash on hand and on deposit.....		
6.2 Short-term investments.....		
7. Other invested assets.....		
8. Aggregate write-ins for invested assets.....		
8a. Subtotals, cash and invested assets (Lines 1 to 8).....		
9. Agents' balances or uncollected premiums:		
9.1 Premiums and agents' balances in course of collection.....		
9.2 Premiums, agents' balances and installments booked but deferred and not yet due.....		
9.3 Accrued retrospective premiums.....		
10. Funds held by or deposited with reinsured companies.....		
11. Bills receivable, taken for premiums.....		
12. Reinsurance recoverables on loss and loss adjustment expense payments.....		
13. Federal income tax recoverable.....		
14. Electronic data processing equipment.....		

15. Interest, dividends and real estate income due and accrued .....		
16. Receivable from parent, subsidiaries and affiliates .....		
17. Equities and deposits in pools and associations .....		
18. Amounts receivable relating to uninsured accident and health plans .....		
20. Aggregate write-ins for other than invested assets .....		
21. TOTALS (Lines 8a through 20)		
<b>DETAILS OF WRITE-INS</b>		
0801. ....		
0802. ....		
0803. ....		
0898. Summary of remaining write-ins for Line 8 from overflow page.....		
0899. Totals (Lines 0801 thru 0803 plus 0898) (Line 8 above)		
2001. ....		
2002. ....		
2003. ....		
2098. Summary of remaining write-ins for Line 20 from overflow page.....		
2099. Totals (Lines 2001 thru 2003 plus 2098) (Line 20 above)		

**Investments of  
P/C Insurance Companies,  
December 31, 1993**



Source: Best's Aggregates and Averages, A.M. Best Co., 1994

value of \$100,000 at date of issue, the value of the bond on the balance sheet is its cost (\$98,000) on the date of purchase. The company has purchased this bond at a \$2,000 discount from face value. However, at the time the bond matures, the company will receive the full face value of \$100,000. To account for this change, the value of the bond on the balance sheet is gradually increased over the years. If the bond had a 20-year maturity and was bought on the date of issue, the value of the bond would be increased by \$100 each year so that after 20 years, the total value would have increased by \$2,000 to \$100,000. This calculation assumes a straightline method of calculating the annual increment. In practice, a method which takes account of compounding is utilized.

Sometimes bonds are purchased at a premium — that is, a price which is higher than the face value of the bond. The next table

shows two examples of valuations of bonds, maturing in 10 years, purchased at a premium of \$500 in one case, and a discount of \$300 in the other.

	Par Value	Premium (Discount)	Amortized Value		
			Year 1	Year 2	Year 3
Bond X	\$10,000	\$500	\$10,500	\$10,450	\$10,400
Bond Y	10,000	(300)	9,700	9,730	9,760

In the year of purchase, the value of Bond X as recorded on the balance sheet will be recorded as \$10,500, the actual cost. The following year, the bond's value will be recorded as \$10,450. At the end of the 10 years, when the bond's issuer pays off the principal of \$10,000, the amortized value of the bond will have fallen to exactly that amount. In the case of the discounted bond, the value will have risen to equal the par value. This process is called amortization. The amortized value of a bond is also known as the book value or the amortized cost.

Variations on this procedure may occur if the issuer of the bond specifies that it may be paid off before maturity (usually at a specified **call date**) or attaches other possible terms or conditions to the bond.

There is an exception to these procedures when the organization issuing the bond is in default on either principal or interest. Such bonds are assigned market values by the Securities Valuation Office (SVO) of the National Association of Insurance Commissioners in its annual publication, "Valuation of Securities," and they must appear in insurance companies' books at those values. The difference between amortized value and the assigned (convention) value of such bonds is charged against policyholders' surplus.

Thus, in general, the valuation of bonds for statutory accounting is on an amortized cost basis. In periods of high interest rates, when

bond prices are depressed, as in the late 1970s and early 1980s, the amortized value carried on the books will exceed the market value.

Under GAAP accounting, bonds are valued in accordance with new rules published by the Financial Accounting Standards Board in a document known as SFAS No. 115. Under these rules, companies divide their bonds into three categories: held to maturity, available for sale, and actively traded.

Bonds that are defined as held to maturity are recorded at amortized cost. Bonds that are available for sale are recorded at market value. Bonds that are actively traded are reported at market value and changes in their value are reported in income. Changes in the value of bonds held to maturity or available for sale are generally only recorded on the balance sheet and do not affect the income statement until they are sold or mature.

### Stocks

Stocks constitute the second largest category of investment by insurance companies. In 1993, common and preferred stocks were 14 percent of total investments. Stocks were a more significant component of assets in prior periods. For example, in the early 1970s stocks were about 40 percent of assets.

Stocks come in two basic varieties — preferred and common. Preferred stock has some of the characteristics of bonds; dividends must be paid on preferred stock before any are paid on the common, and in most cases the amount of that dividend is specified when the stock is issued. Generally, insurance companies hold more common than preferred stock because the potential for market appreciation is greater.

How are common stocks valued? The value of the stock in an insurance company's investment portfolio is decreed by the NAIC's "Valuation of Securities" and usually reflects the current market value of each stock at year's end. The difference in value between the actual cost of the stock and the NAIC convention value is added or subtracted from the policyholders' surplus. This procedure is differ-

ent from the usual method of valuation of assets where the key element of valuation is initial cost. The rationale behind this exception is consistent with the regulatory concern for insurance company solvency. If worst came to worst and a company was bankrupted by extraordinary unanticipated losses, the current market value of the stock would more accurately indicate the company's true financial position than would initial cost, which might be considerably lower or higher than present value.

Preferred stocks are generally recorded the same way as common stocks, that is, at or close to market value. However, preferred stocks subject to a 100 percent mandatory sinking fund are carried at amortized cost, very similar to bonds.

The reader has probably noticed that under statutory accounting, the method used to value stocks — market value — is inconsistent with that used to value bonds — amortized cost. Both methods have pluses and minuses. Valuing stock at close to market value satisfies the regulator's concern with liquidity in that the stock will garner approximately its worth stated on the balance sheet. But one of the disadvantages of this approach is that sharp fluctuations in the stock market can cause equally sharp paper changes in an insurance company's balance sheet, lending an appearance of instability and perhaps forcing a company to make financial decisions that could be harmful in the long term.

Valuing bonds at amortized cost makes their effect on total assets very predictable and stable. But the amortized cost is not always close to market value, which can fall sharply when interest rates go up. The statutory amortized cost method for valuing bonds assumes that a well-run insurance company with a good cash flow and adequate loss reserves will hold the bonds to maturity and will therefore not have to sell bonds at a loss.

In a nutshell, the difference between the treatment of stocks and the treatment of bonds reflects a difference between two accounting objectives. The objective of liquidity or solvency justifies the use of market value for stocks. The objective of stability, which suggests

that accounting rules should in themselves not be the cause of instability, leads to the valuation of bonds at amortized cost.

Some would argue that valuation of stocks at market reflects a preference by regulators for safer investments. Fundamentally, bonds are more secure than stocks since the claims of bond holders come before those of stockholders in a bankruptcy. Thus, an insurance company is discouraged from investing in stocks by the market valuation method, which tends to produce an undesirable instability in reporting.

Prior to the 1970s, the amortized cost method of valuing bonds was not a significant issue. Rising interest rates, however, have made the matter a subject of discussion among insurance regulators and accountants.

### Other Investments

Generally, **real estate** is not a significant portion of property/casualty insurance company investments. This reflects the bias of property/casualty insurers toward liquidity, and restrictions imposed by some states on the amount of real estate which may be owned. Insurers in property/casualty lines face frequent and unpredictable losses and thus have a need for liquidity. However, in life insurance, because trends are more predictable, there is opportunity for more long-term investment, such as commercial real estate.

Real estate investments vary from company to company, depending largely on whether a company owns the land and buildings which house its own offices. Land is valued at cost; buildings at cost less depreciation. However, if the appraised market value of either land or buildings falls below their cost, the difference becomes a non-admitted asset.

Because **mortgage loans** (Line 3) generally are long-term investments and can be difficult to convert, they constitute a very small portion of an insurance company's total investment; most states have statutory limits on the percentage of allowable investments in mortgages. Most states limit such loans to first mortgages

only; second mortgages, if any, are nonadmitted assets.

Further, if a mortgage exceeds the appraised value of the property, the excess is also considered a nonadmitted asset and charged against the policyholders' surplus. Mortgages are valued at cost, or at amortized cost if the mortgage is acquired from another holder at a premium or discount. As the principal is reduced, the value of the mortgage declines.

**Collateral loans** (Line 5) are the smallest part of most insurance companies' investments. The admitted asset value of such a loan cannot exceed the market value of the collateral which supports it. Loans to the company's officers or directors, whether collateralized or not, are normally nonadmitted assets.

### Other Assets

**Agents' balances or uncollected premiums** (Line 9) are moneys due from agents or policyholders for insurance already written but unpaid for. The amount recorded here does not refer to agents' commissions or other costs associated with the sale of policies (see **Unearned Premiums** in chapter 3). Balances or premiums due over 90 days become nonadmitted assets and are charged against the policyholders' surplus.

**Reinsurance recoverables on loss payments** (Line 12) represents money that an insurance company is due from its reinsurer for claims that have been paid. Insurance companies report the details of their reinsurance program on Schedule F of the Annual Statement. In 1989, Schedule F was expanded to include more data on recoverables. Companies must now report data on how long overdue are the payments due from reinsurers. The amounts due must be broken down into four separate categories, as follows: Current and 1-29 days, 30-90 days, 91-180 days and over 180 days.

The total reinsurance recoverable on paid losses from Schedule F is shown directly on Line 12 of the asset page. This means that all recoverables are included in Line 12. However, calculations are made on the data presented and a figure is derived for reinsurance

recoverables that are deemed as uncollectible. This figure is reported as a "surplus penalty" ("Provision for reinsurance") on Line 13 of the liability side of the balance sheet, and is offset by a reduction in surplus on Line 23C.

On the books of a reinsurer, the asset account titled **funds held by or deposited with reinsured companies** (Line 10) represents funds withheld by the ceding company, mainly because of unauthorized reinsurance. (The ceding company is the company writing the original policy and the assuming company is the one to which all or some of the risks covered by the original policy are transferred.) These funds are admitted as assets of the assuming company only under certain conditions, which include a requirement that the ceding company is solvent and is authorized to do business in the state in which the assuming company is licensed. Otherwise, the sums are nonadmitted assets and are deducted from the policyholders' surplus.

The remaining major asset items are easily summarized. **Bills receivable, taken for premiums** (Line 11) are notes handed over to the insurance company in lieu of premiums, a practice common in some states. These bills are usually payable in installments along with a competitive rate of interest. If any installment becomes overdue, the remaining principal becomes a nonadmitted asset. **Federal income tax recoverable** (Line 13) refers to amounts an insurance company expects to recover from the Internal Revenue Service because of losses that can be carried back to prior tax years or overpayments of estimated taxes. **Interest, dividends and real estate income due and accrued** (Line 15) refers to investment income that the company has earned as of the statement date but which has not yet been received.

## 5 Income Statements

The policyholders' surplus rises or falls each year in accordance with the bottom line of the income statement and with certain items recorded directly in the capital and surplus account, both of which appear on page 4 of the Annual Statement (see the next two pages). We will take only a glance at some points which have not yet been discussed fully.

### Statement of Income

In **underwriting income**, losses and loss expenses incurred include not only those paid out during the year but the net increase or decrease in the loss and loss expense reserves. Other underwriting expenses include all other outgo related to the insurance part of the company's business — commissions and the other costs involved in selling insurance policies, premium collection expenses, taxes and fees associated with premiums, and normal business expenses, such as rent, postage and legal expenses. These other expenses are itemized in column 2 on page 11 of the Annual Statement.

Under **investment income** are the interest, dividends and other amounts received as a result of continuing investments, less the expenses of administering the investment part of an insurance company's business. If the company owns real estate, the depreciation in value, when computed according to the regular formula, is a deduction against net income. Net realized capital gains or losses

UNDERWRITING AND INVESTMENT EXHIBIT STATEMENT OF INCOME	1 1994	2 1993
<b>UNDERWRITING INCOME</b>		
1. Premiums earned (Part 2, Line 32, Column 4)		
DEDUCTIONS		
2. Losses incurred (Part 3, Line 32, Column 7)		
3. Loss expenses incurred (Part 4, Line 22, Column 1)		
4. Other underwriting expenses incurred (Part 4, Line 22, Column 2)		
5. Aggregate write-ins for underwriting deductions		
6. Total underwriting deductions (Lines 2 through 5)		
7. Net underwriting gain or (loss) (Line 1 minus 6)		
<b>INVESTMENT INCOME</b>		
8. Net investment income earned (Part 1, Line 15)		
9. Net realized capital gains or (losses) (Part 1A, Line 11)		
9A. Net investment gain or (loss) (Lines 8 + 9)		
<b>OTHER INCOME</b>		
10. Net gain or (loss) from agents' or premium balances charged off (amount recovered \$..... amount charged off \$.....)		
11. Finance and service charges not included in premiums (Schedule T, Column 8 total)		
12. Aggregate write-ins for miscellaneous income		
13. Total other income (Lines 10 through 12)		
14. Net income before dividends to policyholders and before federal and foreign income taxes (Lines 7 + 9A + 13)		
14A. Dividends to policyholders (Exhibit 3, Line 16, Column 1, plus Page 3, Line 10b, Column 1 minus Column 2)		
14B. Net income, after dividends to policyholders but before federal and foreign income taxes (Line 14 minus 14A)		
15. Federal and foreign income taxes incurred		
16. Net income (Line 14B minus 15) (to Line 18)		
<b>CAPITAL AND SURPLUS ACCOUNT</b>		
17. Surplus as regards policyholders, December 31 previous year (Page 4, Line 32, Column 2)		
<b>GAINS AND (LOSSES) IN SURPLUS</b>		
18. Net income (from Line 16)		
19. Net unrealized capital gains or (losses) (Part 1A, Line 12)		
20. Change in non-admitted assets (Exhibit 2, Line 31, Col. 3)		
21. Change in provision for reinsurance (Page 3, Line 13, Column 2 minus 1)		
22. Change in foreign exchange adjustment		
23. Change in excess of statutory reserves over statement reserves (Page 3, Line 14, Column 2 minus 1)		
24. Capital changes:		
a. Paid in (Exhibit 3, Column 1, Line 6)		
b. Transferred from surplus (Stock Dividend)		
c. Transferred to surplus		

25. Surplus adjustments:		
a. Paid in (Exhibit 3, Line 7, Column 1)		
b. Transferred to capital (Stock Dividend)		
c. Transferred from capital		
26. Net remittances from or (to) Home Office (Exhibit 3, Line 4b minus 12b, Column 1)		
27. Dividends to stockholders (cash)		
28. Change in treasury stock (Page 3, Line 24D (1) and (2), Column 2 minus Column 1)		
29. Extraordinary amounts of taxes for prior years		
30. Aggregate write-ins for gains and losses in surplus		
31. Change in surplus as regards policyholders for the year (Lines 18 through 30)		
32. Surplus as regards policyholders, December 31 current year (Lines 17 plus 31) (Page 3, Line 25)		
<b>DETAILS OF WRITE-INS</b>		
0501.		
0502.		
0503.		
0598. Summary of remaining write-ins for Line 25 from overflow page		
0599. Totals (Lines 0501 thru 0503 plus 0598) (Line 5 above)		
1201.		
1202.		
1203.		
1298. Summary of remaining write-ins for Line 12 from overflow page		
1299. Totals (Lines 1201 thru 1203 plus 1298) (Line 12 above)		
3001.		
3002.		
3003.		
3098. Summary of remaining write-ins for Line 30 from overflow page		
3099. Totals (Lines 3001 thru 3003 plus 3098) (Line 30 above)		

(Line 9) records the overall gain or loss on the sale of investments, less the costs of selling them. For a particular stock, a realized capital gain or loss is determined solely by its original cost, not by the NAIC convention value. With bonds, the net gain or loss is determined by the company's last calculation of its amortized value.

**Other income** items include a deduction for a class of "bad debts," that is, uncollected agents' balances or unpaid premiums which have been written off as uncollectible. Portions of these accounts which were written off in the past may nevertheless have been collected during the current year; the amount thus collected must be deducted from the sum of new writeoffs.

Finance and service charges not included in premiums consist of fees and interest charges in connection with policies sold on an installment payment basis. Other additional income or expenses can arise from any transaction not clearly associated with either underwriting or investment activities. This might include a gain or loss on the sale of equipment, and a variety of other, usually minor, items.

### **Income's Impact on Surplus**

Computation of the annual change in the capital and surplus account begins with the account's balance at the end of the previous year. Various items, including the net profit or loss result from the income statement, are then added to or subtracted from that figure to arrive at the current statement of the policyholders' surplus. For example, if a company has a loss of \$1 million as shown on its income statement, then this amount is transferred to the balance sheet as a subtraction from policyholders' surplus. We already have discussed most of those items that may not be clear to the layman — for example, changes in nonadmitted assets and in liabilities for unauthorized reinsurance and the difference between carried and statutory reserves. These particular changes will usually be reflected in a change in the unassigned funds on the balance sheet.

"Capital changes" (Line 24) and "Surplus adjustments" (Line 25) reflect changes in the company's capitalization. These changes occur

when the company issues additional stock, pays stock dividends, buys and retires some of its own stock, revises the par value of the stock, and in a few other circumstances.

The optional lines in the capital and surplus account are used to take special note of some accounting practices of individual companies or special circumstances. In many cases, entries here will show changes in surplus due to revisions of accounts for prior years. These revisions may be made to correct errors, to record paid or refunded income taxes for prior years, or to reflect changes in accounting methods that require substantial alterations in accounts for prior years. Since none of these changes results from the company's current operations, the clearest and most efficient way of accounting for their impact on the balance sheet is to show their effect on surplus. Changes of this sort are usually backed up by extensive supplemental material submitted to the regulatory body along with the Annual Statement.

## 6 Federal Taxation

**C**orporations in the United States are taxed at a rate of 34 percent on taxable income between \$75,000 and \$10 million and at a rate of 35 percent on taxable income in excess of \$10 million. The complications in the system arise in defining and calculating taxable income. For most industries, the calculation of taxable income starts with income (profit/loss) as reported in financial statements.

Adjustments are then made to financial statement income, based on the tax code. The calculation of taxable income for insurance companies follows the same process. The calculation starts with income as reported on the Annual Statement and then adjustments are made to come up with taxable income. Prior to the Tax Reform Act of 1986 the adjustments to calculate taxable income from Annual Statement income were fairly simple.

The Tax Reform Act of 1986, as well as later tax acts, added a number of adjustments, with the net effects of not only making the system more complex but also greatly increasing the tax burden of property/casualty insurance companies. The key adjustments made to income calculated for statutory accounting are: discounting of loss reserves, inclusion of 20 percent of the unearned premium reserve, inclusion of 15 percent of what was previously tax-exempt interest income on state and local government bonds and untaxed dividends, and accrual of salvage and subrogation. Also, beginning in 1987, an alternative minimum tax system became effective, which adds signif-

icantly to the tax burden of companies and also increases the costs of compliance.

### Discounting of Loss Reserves

Under statutory accounting, additions to loss and loss expense reserves are deducted from earned premiums, as part of the derivation of income. Under the current tax code, loss and loss adjustment expense reserves must be calculated on a discounted basis, leading to an increased tax liability.

To see how discounting works, consider the following set of accounts for an insurer, Company A, in year 1.

#### Financial Accounts of A, Year 1

Earned premiums	\$100,000
Incurring losses	60,000
Expenses:	<u>20,000</u>
Taxable income:	<u>\$20,000</u>

If no investment income is assumed, \$20,000 would be taxable income. To understand the 1987 tax change, it is necessary to go behind the incurred loss figure of \$60,000.

For simplicity, assume this figure is due to only one loss, which occurred in year 1. This loss has not been paid. The company expects to pay the loss in year 2. All other losses in prior years have been paid up so that the company's current total loss reserves are \$60,000. Under the 1986 changes to the tax code, the company must discount the \$60,000 based on an interest rate and payout pattern determined under the Internal Revenue Code. (How the interest rate and payout patterns are determined is discussed below.)

For illustrative purposes, it is assumed that the interest rate is 7 percent and the payout pattern is one year. It is also assumed that the reserve is to be discounted as if the payout occurred at the end of year 2.

The discount calculation is as follows:

$$\text{Discounted Loss Reserve} = \$60,000 \text{ divided by } 1.07 = \$56,000$$

Taxable income is now derived for Company A as follows:

#### Taxable Income Calculation, Year 1

Earned premiums	\$100,000
Incurring losses on discounted basis:	56,000
Expenses:	<u>20,000</u>
Taxable income:	<u>\$24,000</u>

Taxable income for Company A has now risen to \$24,000, an increase of \$4,000. However, this \$4,000 extra income is temporary. The company must pay out the whole claim in year 2, including the \$4,000, at which time the additional \$4,000 will be deducted.

To see this, consider the company's statements in year 2. Let us assume the same pattern of revenues and expenses as before, but no loss in year 2.

#### Financial Accounts of A, Year 2

(Statutory)

Earned premiums	\$100,000
Incurring losses	0
Expenses:	<u>20,000</u>
Taxable income:	<u>\$80,000</u>

Under statutory accounting, incurred losses are zero in year 2. However, for tax purposes, incurred losses in year 2 are not zero. This is because paid losses are \$60,000 and only \$56,000 of this amount was taken as a loss in year 1. Hence the taxable income calculation will now include in year 2 the \$4,000 not deducted in year 1.

#### Taxable Income of Company A, Year 2

(Statutory)

Earned premiums	\$100,000
Incurring losses	4,000
Taxable expenses:	<u>20,000</u>
Taxable income:	<u>\$76,000</u>

So net taxable income over the two years is \$100,000 (\$24,000 + \$76,000), the same as statutory income (\$20,000 + \$80,000). For this reason, it is at times said discounting is only a timing change, not an increase in taxes.

However, the change is normally viewed as an increase in the tax burden of property/casualty companies because:

(1) While there is a timing difference, the timing is adverse to taxpayers. If the insurance company held onto the additional tax paid, it could invest it. This loss in investment income on dollars going to the IRS is a permanent loss.

(2) In a growing industry with premiums and reserves increasing each year, the timing difference in effect becomes permanent. In our earlier example, if Company A added to premiums and reserves in year 2, then the returned benefit of \$4,000 would have been offset by increased liabilities due to discounting of even higher reserves.

The move from statutory reserves to discounted reserves for taxation purposes involves three items:

- i. The gross amount of loss reserves for any given year,
- ii. The pattern of payments, that is, what percent is expected to be paid in each year and what is the total number of years to be used, and
- iii. The rate of interest to be used for discounting.

With regard to (i), the Tax Reform Act states that all loss reserves must be discounted. If reserves for some lines of insurance have already been discounted on a statutory reporting basis, as happens, for example, in workers compensation and medical malpractice, a company may "gross up" the reserves to the undiscounted amount, and then discount for tax purposes. The statutory discounting formula used must be properly disclosed before a company can "gross up" its reserves in this way. The discounting computation is done by line of business and by accident year. A line of business refers to the various lines reported in the Annual Statement, and the accident year is the calendar year in which the loss event occurred.

With regard to (ii), pattern of payments, companies are required to use payout patterns compiled by line of business from industry data, or, if they meet certain criteria, companies can elect to use their own loss payment experience. Once a payment pattern is

selected, it must be used to discount loss reserves for losses arising in the year of the election (called the determination year) and for each of the following four years.

Every fifth year is a determination year, in which the company may choose again to follow either the industry or its own payment pattern. For example, 1987 and 1992 were determination years, and 1997 will be the next determination year. The pattern chosen applies to reserves established for claims arising in the determination year and succeeding four years.

The interest rate, (iii), to be used is the applicable federal midterm rate (AFR), which is based on the intermediate U.S. government bond rate. This rate is applied on a 60-month rolling average basis.

Special rules on discounting apply to reinsurance, international insurance, accident and health, and title insurance.

### Fresh Start

"Fresh Start" is a special provision of the Tax Reform Act of 1986 to allow for a phase-in of discounting. Under the Act, all reserves were discounted and thus reduced in value as of January 1, 1987. The normal effect of such a reduction would be to reduce losses and thus increase income by an amount corresponding to the reduction in the value of reserves. Such an increase in income would have led to a substantial increase in taxes in 1987. The Fresh Start provision allows insurers to exclude from taxable income the reduction in reserves for years prior to 1987. One exception to the Fresh Start provision contained in the 1986 Act applies to reserve strengthening that took place in 1986, the year the Act was passed. The definition of reserve strengthening has been controversial. Litigation on this issue is likely to take many years to resolve.

The Fresh Start provision will apply until all claims underlying reserves for years prior to 1987 are settled. In reporting their results on a GAAP basis, insurance companies typically disclose a separate item reflecting the Fresh Start provision.

**Unearned Premium Reserve**

The Tax Reform Act of 1986 requires that 20 percent of unearned premium reserves be included in income. This rule applies to most lines of property/casualty insurance. (For insurance of interest and principal on certain debt securities, known as financial guaranty insurance, the law calls for the inclusion of 10 percent of unearned premium reserves.) The inclusion of part of the unearned premium reserve in income has two rationales:

- 1) It moves the system of calculating taxable income closer to GAAP accounting, by attempting to achieve a better match of revenue to expense.
- 2) It increases taxable income and thus the federal government collects more money.

In chapter 3, it was explained how the unearned premium reserve was developed. If an auto policy of \$360 is paid in January, then \$30 of that policy is viewed as earned premiums in January while the remaining \$330 is put in the unearned premium reserve. At the same time, the total expense of acquiring the policy, say \$72, is immediately deducted. Under GAAP accounting, the \$72 expense would be spread over the life of the policy.

A system could have been chosen similar to GAAP, whereby the \$72 expense would be spread over the life of the policy. Under this system, the account (assuming no other losses and expenses) would look as follows:

<b>January Income Statement</b>		
	Statutory Accounting	GAAP Accounting
Earned premiums	\$30	\$30
Acquisition expenses	<u>72</u>	<u>6</u>
Income/(Loss)	\$(42)	\$24

Initially, under statutory accounting, the company shows a loss. Eventually over the full year there would be no difference as earned premiums would total \$360 and acquisition expenses \$72 under both systems.

Congress instead chose a formula which takes 20 percent of the

addition to the unearned premium reserve into income. The addition to the unearned premium reserve at the end of January was \$330. Twenty percent of this is \$66.

The accounts for taxable income would now be:

Earned premiums	\$30
Acquisition expenses	-72
Extra income from unearned premium reserve	<u>+66</u>
Taxable income	<u>\$24</u>

Under this example, the system produces the same amount of income as GAAP accounting, because acquisition expenses are 20 percent of the premium.

The total impact of bringing 20 percent of the addition to unearned premium reserves into income is a timing difference in taxation, to the benefit of the IRS. The same points stressed under discounting apply to this timing difference.

The law called for inclusion of 20 percent of the outstanding unearned premium reserve on January 1, 1987, in income. Under a special transition rule, this change was phased in over a six-year period.

**Treatment of Tax-Exempt Income and Dividends**

Income from state and local bonds has traditionally been treated as tax exempt by the federal government for all taxpayers. Under the new law, this tax-exempt feature is retained. However, property/casualty insurance companies under the new law must take 15 percent of tax-exempt income into income.

In addition, dividends received from companies that are not subsidiaries are 70 percent tax deductible. The reason for these deductions is that the company paying dividends does so out of its after-tax income. That is, before dividends are paid out, they are potentially taxed at a maximum rate of 35 percent. To tax them again at the corporate rate, as income to the receiver, would be double tax-

tion. This 70 percent rule for non-subsidiaries applies to companies which are less than 20 percent owned by the taxpaying corporation.

### Repeal of Protection Against Loss Account

The 1986 Act also repealed the Protection Against Loss (PAL) account. This provision had permitted mutual companies to defer a portion of taxable income for up to five years to provide a buffer against catastrophic losses. The deferral was limited in both size and duration. No deferral was permitted if the company had an overall loss. If, after five years, the company had not experienced losses substantial enough to require the deferred income, a portion of the deferred amount was added to the taxable income of that fifth year. The accumulated size of the PAL account was limited by a ceiling: 10 percent of the year's net earned premiums less policyholders' dividends, or the balance of the previous year's PAL account, whichever was greater.

Under the 1986 Act, additions to the account are prohibited and balances in the account are allowed to run off as under the old system. Recently there have been suggestions that the PAL account should be reinstated as a protective measure against catastrophic losses.

### The Alternative Minimum Tax (AMT)

The Alternative Minimum Tax (AMT) is a tax designed to make sure that corporations with substantial economic income incur a tax liability.

Because Congress wishes to direct economic activity in certain directions, the tax code allows for certain "preferences". For example, to encourage charitable contributions, the tax code provides for a deduction for charitable gifts. Also, to increase investment in state and local governments, the tax code provides that income from a substantial portion of state and local government bonds be exempt from federal income tax.

However, as a result of such preferences, a taxpayer may show a

high level of economic income, but with little or no tax liability. The AMT was designed to provide that corporations in such situations pay taxes.

The AMT applies to all U.S. corporations, not just insurance companies.

In a simplified fashion, the calculation of the AMT for years after 1989 works as follows:

1. Calculate regular taxable income.
2. Calculate regular tax liability.
3. Calculate tax-exempt income and the net dividend received deduction.
4. Calculate Adjusted Current Earnings (ACE) by adding 1 and 3.
5. Subtract taxable income from ACE (Item 4 - Item 1).
6. Calculate Alternative Minimum Tax Income (AMTI), by taking 75 percent of the amount calculated in step 5, and adding it to Item 1.
7. Calculate AMT by taking 20 percent of AMTI.
8. Pay the greater of the AMT or the regular tax liability.

The first step in the calculation is to determine regular taxable income and the regular tax. The company then calculates its adjusted current earnings (ACE) by adding tax-exempt income to taxable income. This is a simplification. The example assumes that there are no other adjustments, for items such as stock options, accelerated depreciation, and other tax preferences. The corporation next calculates its Alternative Minimum Tax Income (AMTI), which is 75 percent of the amount by which ACE exceeds taxable income plus regular taxable income. The Alternative Minimum Tax (AMT) is 20 percent of AMTI. If the AMT is more than the regular tax liability, then the corporation pays tax on the alternative minimum tax income. If the AMT is less, then the corporation pays only the regular tax liability.

Corporations are allowed to take credit against regular taxes in future years for the excess of AMT liability over regular tax liability.

While this provision allows all corporations to average their tax liabilities over the years, it is particularly helpful to property/casualty insurers who experience significant swings in profitability.

The AMT has far-reaching effects for property/casualty insurance companies. It affects not only their tax bill, but influences decisions on pricing, cash flow and investment strategies.

Companies are rethinking and, in many cases, altering their investment policies with regard to tax-exempt bonds and equities. This is because substantial investments in such items could expose the company to a large AMT, resulting in a high tax rate on "tax-exempt" interest and dividends. Such a high tax rate would make the after-tax yield of these investments unacceptably low compared to the after-tax yield of fully taxable investments. Ultimately, if a major component of property/casualty insurance company investments shifts from tax-exempts to taxable, municipalities may incur higher costs and greater difficulties in issuing bonds. At the date of this publication, Congress is considering a repeal of the AMT. If enacted, this change would have a significant impact on property/casualty insurers.

### **Tax Treatment of Salvage and Subrogation**

The Revenue Reconciliation Act of 1990 changed the tax treatment of salvage and subrogation. This change increased the tax burden of property/casualty insurance companies.

To understand the tax change, it is useful to review the reporting of salvage and subrogation rights under statutory accounting. Salvage is defined as the recovery of the portion of a loss through the sale of damaged property. For example, when a car is totaled, the insurance company will pay a policyholder with collision coverage the value of the car, less any applicable deductible. The insurance company typically will take possession of the totaled car and recover a portion of the claim payment through selling the totaled car for spare parts. The amount recovered through this process is known as salvage.

Subrogation refers to the process through which an insurance company, after paying for a loss, can recover a portion or all of the loss from other parties legally liable for it. For example, in the case of the totaled car just discussed, the damage may have been caused by another driver. In this case, the insurance company, after paying its policyholder under collision coverage, will seek to recover its payment from the driver at fault. This process is referred to as the subrogation of rights. The right that the policyholder had to recover from the at-fault driver is transferred (subrogated) to the insurance company from the policyholder after payment to the policyholder under the collision coverage.

The Revenue Reconciliation Act of 1990 changes the tax accounting treatment of salvage and subrogation to an accrual basis from a cash basis. This effectively raises revenue for an insurance company since it reports a higher number for salvage and subrogation. As a result, income reported for tax purposes is increased.

The provision is similar to other changes incorporated into the 1986 Tax Reform Act in that it is basically a tax collection timing change. However, timing changes normally represent permanent tax increases. First, taxes on the income paid earlier could have been invested. Second, in a growing industry, where taxable income is increasing each year, the acceleration of tax payments represented by the timing change becomes in effect a permanent increase in taxes.

The treatment of salvage and subrogation by insurers in their Annual Statement varies. Some insurers treat salvage and subrogation as a reduction to their incurred losses. These insurers will be referred to as "netters." Other insurers separately state their salvage and subrogation and do not decrease their incurred loss. These insurers will be referred to as "grossers." Some insurers use both types of treatment for different lines of business. These insurers will be referred to as partial netters.

Grossers were given a "fresh start" equal to 87 percent of the discounted salvage and subrogation recoverable as of December

31,1989. This occurs by requiring a change of accounting and spreading 13 percent of the amount over four years. There are anti-abuse provisions designed to prevent a taxpayer from overestimating December 1989 salvage and subrogation and thus realizing greater Fresh Start benefits.

Netters have already taken salvage and subrogation into account in computing reserves. They are therefore allowed a "special deduction" of 87 percent of the discounted salvage and subrogation balance as of December 31, 1989. In this way the same Fresh Start benefit obtained by a netter is also obtained by a grosser.

The treatment for partial netters has been the subject of some controversy. Originally, taxpayers assumed they would be allowed to take a Fresh Start benefit for the portion of salvage and subrogation that had not been netted against reserves as a change of accounting adjustment and a special deduction for any salvage and subrogation that had been netted. In Revenue Procedure 91-48, the IRS ruled that partial netters could not take both. This issue is likely to be contentious in the future.

### **Captive and Self-Insurance Issues**

In the areas of captives and self-insurance, a basic tax issue arises, namely, the tax deductibility of premiums paid to captives.

A captive is an insurance company set up to provide insurance services to its owner or owners. Captives owned by one parent company are known as "pure" captives. Captives set up by a trade group or group of companies are known as "association" captives.

Under the tax code for a corporation, insurance premiums paid in a normal fashion to an insurance company are an expense and deductible from revenue.

A U.S. corporation which sets up a captive would generally like to be able to treat as an expense those premiums paid to the captive. This treatment would allow its insurance premiums to be paid for by before-tax dollars.

In a major decision in January 1991, the U.S. Tax Court ruled

that insurance premiums paid to a company's wholly owned insurance units may be deducted from income for tax purposes. The ruling involved three separate cases of parents and their captives. The Court held that a legitimate insurance transaction can take place between a parent and its captive. The Tax Court based its decision on the following: (1) the transaction was treated as insurance for essentially all nontax purposes; (2) the transaction in form was insurance; (3) the captive was a separate, viable entity; (4) no countervailing agreements existed such as indemnification agreements negating the insurance risk; and (5) a substantial amount of unrelated risk is insured. The levels of outside risk in the cases before the court varied from almost 100 percent to as little as 30 percent. The Tax Court decisions were all affirmed on appeal. A similar case found in favor of the taxpayer in the Court of Claims.

A separate captive issue involves insurance transactions between the subsidiaries in a group of companies. In one Circuit, an Appeals Court has decided that premiums paid to a wholly owned captive are deductible despite the lack of substantial unrelated party risk. The U.S. Court of Appeals for the Sixth Circuit in July 1989 held that brother-sister corporations could have an insurer-insured relationship and that the premiums paid to a captive would be deductible by an affiliate within the group of companies.

In cases of association captives, a number of rulings and court decisions over the years have held that, under normal circumstances, premiums paid by association members to a captive are deductible.

A number of other tax issues arise in the case of off-shore captives. Traditionally, income from off-shore companies is taxed by the U.S. federal government only when dividends are paid. However, since 1962, the off-shore captive's shareholders have been subject to regulations, which, in many cases, result in the taxation of U.S. shareholders on the income earned by the captive, regardless of when dividends are transmitted.

The Revenue Act of 1962 added Subpart F of Subchapter N to

the Internal Revenue Code, which resulted in taxing the undistributed income of off-shore captives. Subpart F works as follows. It first defines a "Controlled Foreign Corporation" (CFC) and then provides that the U.S. owners of a CFC will be taxed on some portions of the undistributed income of the CFC. Prior to 1986, CFCs included all single-owner captives and some association captives. The Tax Reform Act of 1986 expanded the definition of a CFC where U.S. shareholders are insureds, with the result that most off-shore association captives are now CFCs. U.S. shareholders of a CFC are taxable on Subpart F income of the CFC, which is defined as all underwriting profit and investment income except that relating to insuring risks in the country in which the insurer is domiciled.

Premiums paid to off-shore captives are also subject to a federal excise tax of 4 percent for direct premiums and 1 percent for reinsurance premiums. In some instances, the excise tax may be forgiven. For example, under the U.S. tax treaty with the United Kingdom, there is no excise tax.

## 7 Life Insurance Accounting

Life insurance accounting is in some respects similar to accounting for property/casualty insurance companies. However, there is at least one major conceptual difference between life and property/casualty insurance, namely that most life insurance policies involve long-term commitments, whereas property/casualty policies, in most cases, provide coverage for a single year or less. In a given year, a life company sells whole life policies. Each of these policies will continue to generate annual premiums until the insured dies, surrenders the policy or allows it to lapse. Because of the multi-year nature of life insurance, traditional accounting concepts are not fully adequate for determining profit or loss. While the profitability of life policies in the year of sale can be estimated, such estimates are subject to on-going adjustments based on actual experience over the life of the policies.

This chapter focuses on understanding key items in the financial statements of a life company. Readers seeking an in-depth understanding of life insurance accounting issues are referred to textbooks on the topic, such as *Life Insurance Accounting* by the Insurance Accounting and Systems Association, located in Durham, North Carolina.

Life insurance companies sell four major types of insurance: life insurance, annuities, health insurance and disability insurance.

Life insurance products can be classified as either term or whole

life. Term insurance, which accounts for less than 20 percent of life insurance policies sold, is the easiest type of life insurance policy to understand. It is typically sold for a single year, with a guarantee of renewal to age 70, and is convertible to whole life. The policy pays the face amount if the named insured dies during the 12-month period. The premium increases with the age of the insured, as the risk of death, the mortality risk, increases. Term insurance has no savings component.

Whole life insurance covers the insured over his or her whole life. The most basic form of whole life insurance provides for the same premium to be paid over the life of the insured. This insurance is known as level premium whole life. In the early years of the policy, the level premium is much higher than the mortality cost, while in later years the premium is much lower than the mortality cost. In essence, the premium paid includes a savings component. In the early years of the policy, the savings component is high and builds a fund which eventually comes close to the face amount of the policy. Looked at another way, the extra funds provided in the early years of the policy pre-fund the mortality costs of insurance in the later years.

The pre-funding mechanism of whole life policies results in policies having a "cash surrender" value. If the policyholder decides to terminate the policy before the death of the insured, the policyholder receives the cash value of the policy, which is essentially the fund built up through premium payments and investment income earned on these payments, less expenses and payments for mortality risk.

The buildup of assets through pre-funding closely parallels the buildup in the liability of the life insurance company. Consider, for example, a whole life policy with a face value of \$100,000 and a level premium of \$1,300. The policyholder has held this policy for 20 years, allowing the insurance company to build up a fund based on the in-coming premiums and investment income. Let's assume the insured is expected to live only another 10 years. Over the 10 years the company will take in premiums of \$13,000, and then pay out

\$100,000 upon the death of the insured. Thus its liability is about \$87,000. (An exact calculation would include discounting the figures to current values.) The life insurance company must set up a reserve for this obligation. If the policy has been priced properly, and investment rates have been as expected, the reserve will be more than offset by the fund accumulated from policy premiums and investment income earned on these premiums over the full life of the policy.

In addition to level premium whole life policies, a number of different policies provide variations on the basic whole life concept. Variable life policies allow the policyholder a choice of investment options for the funds being built up in the prefunding component of the policy. Universal life policies allow the policyholder to change, within limits, both the amount of premiums paid and the face value of the policy. Other policies combine features of variable and universal life policies. From an accounting perspective, the basic principle of setting reserves for future liabilities applies to all variations of whole life insurance.

Annuities are insurance policies that pay a series of payments for a fixed period or over a person's lifetime. For example, a person retiring at age 65 may take a portion of his or her savings and purchase an annuity which will pay a fixed monthly amount for life. Annuities may be purchased with a single premium, as in the above example, or may be purchased on an installment basis. Reserves for annuities follow the same pre-funding concept of whole life insurance. If the company sells an annuity for \$100,000 in year X, then a reserve of approximately \$100,000 is set up to match the funding of that annuity, and all other contingencies under the policy. With more complex types of annuities the accounting treatment will be more involved, but the basic principle is one of pre-funding.

Health insurance policies pay for medical services incurred by a policyholder. Reserves for payments of medical treatment are set up based on expected claims payments of policyholders.

Disability income insurance policies provide monthly benefits to replace lost income when the insured is disabled. Reserves are deter-

mined in a manner similar to life insurance reserves. Morbidity tables, which show yearly probabilities of loss of health, are used in the calculation, as opposed to mortality tables, which show death probabilities.

In the following sections, the pages from the Statutory Annual Statement on Assets, Liabilities and Operations are described.

**Assets**

The value of a life company's assets are determined in a manner that is similar, in many respects, to that of property/casualty insurance companies.

The Annual Statement page for assets is shown on the following page. This statement will look very familiar to a student of property/casualty insurance accounting. **Bonds, stocks, mortgage loans and real estate** (Lines 1, 2, 3, 4) are accounted for in the same way as for property/casualty insurance — bonds are reported at amortized cost, preferred stocks are at cost, while stocks are recorded at market value. Mortgage loans on real estate are listed at the unpaid principal balance. However, if the loan is permanently impaired, a reduction may be made to the unpaid balance or a reserve set up for such a reduction. The reduction is treated as a nonadmitted asset. Real estate basically is valued at cost less depreciation. If real estate is held for resale, then its value is the lower of estimated fair value or cost, where cost is defined as the original cost less depreciation and encumbrances such as mortgages and liens.

A number of items are particular to life insurance, such as **policy loans** (Line 5). Life insurance policyholders can borrow from their insurance company up to the cash value of their policy. These loans are valued at the unpaid principal balance. **Premium notes** (Line 6), which are debts of policyholders to the company for payment of premiums, and **collateral loans** (Line 7) (loans which are backed up by an asset of the debtor) are also recorded at the value of the unpaid principal.

The category **Life insurance premiums and annuity consid-**

Form 1 ANNUAL STATEMENT FOR THE YEAR 1994 OF THE

<b>ASSETS</b>	1 December 31, 1994	2 December 31, 1993
1. Bonds (less \$ ..... liability for asset transfers with put options) .....		
2. Stocks:		
2.1 Preferred stocks .....		
2.2 Common stocks .....		
3. Mortgage loans on real estate .....		
4. Real estate:		
4.1 Properties occupied by the company (less \$ ..... encumbrances) .....		
4.2 Properties acquired in satisfaction of debt (less \$ ..... encumbrances) .....		
4.3 Investment real estate (less \$ ..... encumbrances) .....		
5. Policy loans .....		
6. Premium notes, including \$ ..... for first year premiums .....		
7. Collateral loans .....		
8.1 Cash on hand and on deposit .....		
8.2 Short-term investments .....		
9. Other invested assets .....		
10. Aggregate write-ins for invested assets .....		
10A. Subtotals, cash and invested assets (Lines 1 to 10) .....		
11. Reinsurance ceded:		
11.1 Amounts recoverable from reinsurers .....		
11.2 Commissions and expense allowances due .....		
11.3 Experience rating and other refunds due .....		
12. Electronic data processing equipment .....		
13. Federal income tax recoverable .....		
14. Life insurance premiums and annuity considerations deferred and uncollected .....		
15. Accident and health premiums due and unpaid .....		
16. Investment income due and accrued .....		
17. Net adjustment in assets and liabilities due to foreign exchange rates .....		
18. Receivable from parent, subsidiaries and affiliates .....		
19. Amounts receivable relating to uninsured accident and health plans .....		
21. Aggregate write-ins for other than invested assets .....		
22. Total assets excluding Separate Accounts business (Lines 10A to 21) .....		
23. From Separate Accounts Statement .....		
24. Totals (Lines 22 and 23) .....		
<b>DETAILS OF WRITE-INS</b>		
1001. ....		
1002. ....		
1003. ....		
1098. Summary of remaining write-ins for Line 10 from overflow page .....		
1099. Totals (Lines 1001 thru 1003 plus 1098) (Line 10 above) .....		
2101. ....		
2102. ....		
2103. ....		
2198. Summary of remaining write-ins for Line 21 from overflow page .....		
2199. Totals (Lines 2101 thru 2103 plus 2198) (Line 21 above) .....		

erations deferred and uncollected (Line 14) is also specific to life companies because of the multi-year nature of life insurance contracts. The category includes premium income due but not received (uncollected), as well as policy premiums that will become due after the date of the Annual Statement but before the next policy anniversary date (deferred). This latter amount results in an overstatement of assets, but is needed to match a similar overstatement on the liability side. The overstatement in liability occurs because the calculation of reserves assumes that the full premium has been collected on the anniversary date of the policy.

A final asset category not used by property/casualty insurers is **Separate Accounts**, Line 23. Most life insurers have Separate Accounts, which are funds held separately from all other assets. These accounts rose out of the development of variable life products, where the value of the insurance varies with the performance of a separate pool of assets. With traditional life insurance products, like level premium whole life, policyholders are provided with a fixed return over the life of the policy. With variable life products the return varies with the investment experience of the funds in a Separate Account. Also, policyholders can, within limits, reallocate their investments within the Separate Account.

**Liabilities**

The liability section of the balance sheet of life companies shows little similarity to that of property/casualty companies. The liability and surplus page from the Annual Statement for Life and Health is shown on the next page.

The first item **Aggregated reserve for life policies and contracts** refers to reserves held for life insurance policies. Since life insurance policies provide long-term guarantees, reserves must take account of this fact. Benefits to be paid out and premiums to be paid in must be stated in today's dollars, through a process of discounting. If a life policy has a benefit amount of \$11,000 payable in one year, with an interest rate factor of 10 percent, the present value of the

Form 1 ANNUAL STATEMENT FOR THE YEAR 1994 OF THE

<b>LIABILITIES, SURPLUS AND OTHER FUNDS</b>		1 December 31, 1994	2 December 31, 1993
1.	Aggregate reserve for life policies and contracts \$..... (Exh. 8, Line H) less \$..... included in Line 7.3		
2.	Aggregate reserve for accident and health policies (Exhibit 9, Line 17, Col. 1) .....		
3.	Supplementary contracts without life contingencies (Exhibit 10, Line 7, Col. 1) .....		
4.	Policy and contract claims:		
4.1	Life (Exhibit 11, Part 1, Line 4d, Column 1 less sum of Columns 9, 10 and 11) .....		
4.2	Accident and health (Exhibit 11, Part 1, Line 4d, sum of Columns 9, 10 and 11) .....		
5.	Policyholders' dividend and coupon accumulations (Exhibit 10, Line 8 plus Line 9, Column 1) .....		
6.	Policyholders' dividends \$..... and coupons \$..... due and unpaid (Exh. 7, Line 10) .....		
7.	Provision for policyholders' dividends and coupons payable in following calendar year—estimated amounts:		
7.1	Dividends apportioned for payment to....., 19.....		
7.2	Dividends not yet apportioned.....		
7.3	Coupons and similar benefits.....		
8.	Amount provisionally held for deferred dividend policies not included in Line 7.....		
9.	Premiums and annuity considerations received in advance less \$..... discount, including \$..... accident and health premiums (Exhibit 1, Part 1, Col. 1, sum of Lines 4 and 14) .....		
10.	Liability for premium and other deposit funds:		
10.1	Policyholder premiums, including \$..... deferred annuity liability (Exhibit 10, Line 1, Column 1) .....		
10.2	Guaranteed interest contracts, including \$..... deferred annuity liability (Exhibit 10, Line 2, Column 1) .....		
10.3	Other contract deposit funds, including \$..... deferred annuity liability (Exhibit 10, Line 3, Column 1) .....		
11.	Policy and contract liabilities not included elsewhere:		
11.1	Surrender values on cancelled policies.....		
11.2	Provision for experience rating refunds, including \$..... A & H experience rating refunds.....		
11.3	Other amounts payable on reinsurance assumed.....		
11.4	Interest maintenance reserve (Page 48, Line 6).....		
12.	Commissions to agents due or accrued—life and annuity \$..... accident and health \$.....		
12A.	Commissions and expense allowance payable on reinsurance assumed.....		
13.	General expenses due or accrued (Exhibit 5, Line 12, Col. 5) .....		
13A.	Transfers to Separate Accounts due or accrued (net).....		
14.	Taxes, licenses and fees due or accrued, excluding federal income taxes (Exhibit 6, Line 9, Col. 5) .....		
14A.	Federal income taxes due or accrued, including \$..... on capital gains (excluding deferred taxes).....		
15.	"Cost of collection" on premiums an annuity considerations deferred and uncollected in excess of total loading thereon.....		
16.	Unearned investment income (Exhibit 2, Line 10, Col. 2) .....		
17.	Amounts withheld or retained by company as agent or trustee.....		
18.	Amounts held for agents' account, including \$..... agents' credit balances.....		
19.	Remittances and items not allocated.....		
20.	Net adjustment in assets and liabilities due to foreign exchange rates.....		
21.	Liability for benefits for employees and agents if not included above.....		
22.	Borrowed money \$..... and interest thereon \$.....		
23.	Dividends to stockholders declared and unpaid.....		
24.	Miscellaneous liabilities:		
24.1	Asset valuation reserve (Page 49, Line 12, Column 7) .....		
24.2	Reinsurance in unauthorized companies.....		
24.3	Funds held under reinsurance treaties with unauthorized reinsurers.....		
24.4	Payable to parent, subsidiaries and affiliates.....		
24.5	Drafts outstanding.....		
24.6	Liability for amounts held under uninsured accident and health plans.....		
25.	Aggregate write-ins for liabilities.....		
26.	Total Liabilities excluding Separate Accounts business (Lines 1 to 25).....		
27.	From Separate Accounts Statement.....		
28.	Total Liabilities (Lines 26 and 27).....		
29.	Common capital stock.....		
30.	Preferred capital stock.....		
31.	Aggregate write-ins for other than special surplus funds.....		
32.	Surplus notes.....		
33.	Gross paid in and contributed surplus (Page 3, Line 33, Col. 2 plus Page 4, Line 44a, Col. 1) .....		
34.	Aggregate write-ins for special surplus funds.....		
35.	Unassigned funds (surplus).....		
36.	Less treasury stock, at cost:		
(1)	..... shares common (value included in Line 29 \$.....)		
(2)	..... shares preferred (value included in Line 30 \$.....)		
37.	Surplus (total Lines 31 + 32 + 33 + 34 + 35 - 36).....		
38.	Totals of Lines 29, 30 and 37 (Page 4, Line 48) .....		
39.	Totals of Lines 28 and 38 (Page 2, Line 24) .....		
<b>DETAILS OF WRITE-INS</b>			
2501.	.....		
2502.	.....		
2503.	.....		
2598.	Summary of remaining write-ins for Line 25 from overflow page.....		
2599.	Totals (Lines 2501 thru 2503 plus 2598) (Line 25 above).....		
3101.	.....		
3102.	.....		
3103.	.....		
3198.	Summary of remaining write-ins for Line 31 from overflow page.....		
3199.	Totals (Lines 3101 thru 3103 plus 3198) (Line 31 above).....		
3401.	.....		
3402.	.....		
3403.	.....		
3498.	Summary of remaining write-ins for Line 34 from overflow page.....		
3499.	Totals (Lines 3401 thru 3403 plus 3498) (Line 34 above).....		

benefit would be \$10,000 (10 percent of \$10,000 equals \$1,000). For statutory accounting, reserves for life insurance are calculated by subtracting the discounted value of future premiums from the discounted value of future benefits. For example, a policy has a face value of \$100,000 and is expected to be paid 10 years from now when the insured dies. If an interest rate of 6 percent is assumed, the present value is \$55,840. Assume also that premium payments for this policy over the next 10 years discounted at the same rate total \$10,000. The reserve would then be \$45,840 (\$55,840 less \$10,000). In statutory accounting, no account is taken of possible surrenders or lapse of policies. The calculation of future benefits is based on actuarial tables. The discount factor used is determined by the National Association of Insurance Commissioners.

**Aggregate reserve for accident and health policies (Line 2)** is calculated in a similar fashion to life reserves.

**Policy and contract claims (Line 4)** refers to policies where benefits are due but have not yet been paid. For example, following the death of a policyholder, the benefit may be in the process of being settled with the beneficiary.

Most other items on the liability and surplus side of the balance sheet are either self-explanatory or similar to items on the property/casualty balance sheet.

**Income Statement**

The income statement for life companies, described as **Summary of Operations** in the Annual Statement, has a number of items which resemble the income statement of property/casualty companies (see Summary of Operations on the next page). These include:

Line 1. **Premiums and annuity considerations**, which correspond to earned premiums on the property/casualty statement.

Line 4. **Net investment income**, the same item as on the property/casualty statement.

Line 17. **Increase in aggregate reserves for life and accident and health policies and contracts**. As in property/casualty

Form 1 ANNUAL STATEMENT FOR THE YEAR 1994 OF THE

<b>SUMMARY OF OPERATIONS</b> (Excluding Unrealized Capital Gains and Losses)		1 1994	2 1993
1. Premiums and annuity considerations (Exhibit 1, Part 1, Line 20d, Col. 1, less Col. 11)			
1A. Deposit-type funds			
2. Considerations for supplementary contracts with life contingencies (Exhibit 12, Line 3, Col. 1)			
3. Considerations for supplementary contracts without life contingencies and dividend accumulations (Exhibit 12, Lines 4 and 5, Col. 1)			
3A. Coupons left to accumulate at interest (Exhibit 12, Line 5A, Col. 1)			
4. Net investment income (includes \$ equity in undistributed income or loss of subsidiaries) (Exhibit 2, Line 16)			
4A. Amortization of Interest Maintenance Reserve (IMR) (Page 48, Line 5)			
5. Commissions and expense allowances on reinsurance ceded (Exhibit 1, Part 2, Line 26a, Col. 1)			
5A. Reserve adjustments on reinsurance ceded (Exhibit 12, Line 9A, Col. 1)			
6. Aggregate write-ins for miscellaneous income			
7. Totals (Lines 1 to 6)			
8. Death benefits			
9. Matured endowments (excluding guaranteed annual pure endowments)			
10. Annuity benefits (Exhibit 11, Part 2, Line 6d, Cols. 4 + 8)			
11. Disability benefits and benefits under accident and health policies			
11A. Coupons, guaranteed annual pure endowments and similar benefits (Exhibit 7, Line 15, Cols. 3 + 4)			
12. Surrender benefits and other fund withdrawals			
13. Group conversions			
14. Interest on policy or contract funds			
15. Payments on supplementary contracts with life contingencies (Exhibit 12, Line 20.1, Col. 1)			
16. Payments on supplementary contracts without life contingencies and of dividend accumulations (Exhibit 12, Lines 20.2 + 21, Col. 1)			
16A. Accumulated coupon payments (Exhibit 12, Line 21A, Col. 1)			
17. Increase in aggregate reserves for life and accident and health policies and contracts			
17A. Increase in liability for premium and other deposit funds			
18. Increase in reserve for supplementary contracts without life contingencies and for dividend and coupon accumulations			
19. Totals (Lines 8 to 18)			
20. Commissions on premiums and annuity considerations (direct business only) (Exhibit 1, Part 2, Line 30, Col. 1)			
21. Commissions and expense allowances on reinsurance assumed (Exhibit 1, Part 2, Line 26b, Col. 1, less Col. 11)			
22. General insurance expenses (Exhibit 5, Line 10, Cols. 1 + 2 + 3)			
23. Insurance taxes, licenses and fees, excluding federal income taxes (Exhibit 6, Line 7, Cols. 1 + 2 + 3)			
24. Increase in loading on and cost of collection in excess of loading on deferred and uncollected premiums			
24A. Net transfers to or (from) Separate Accounts			
25. Aggregate write-ins for deductions			
26. Totals (Lines 19 to 25)			
27. Net gain from operations before dividends to policyholders and federal income taxes (Line 7 minus Line 26)			
28. Dividends to policyholders (Exhibit 7, Line 15, Cols. 1 and 2)			
29. Net gain from operations after dividends to policyholders and before federal income taxes (Line 27 minus Line 28)			
30. Federal income taxes incurred (excluding tax on capital gains)			
31. Net gain from operations after dividends to policyholders and federal income taxes and before realized capital gains or (losses) (Line 29 minus Line 30)			
32. Net realized capital gains or (losses) less capital gains tax of \$ transferred to the IMR (excluding \$)			
33. Net income (Line 31 plus Line 32)			
<b>CAPITAL AND SURPLUS ACCOUNT</b>			
34. Capital and surplus, December 31, previous year (Page 3, Line 38, Col. 2)			
35. Net income (Line 33)			
36. Change in net unrealized capital gains or (losses)			
37. Change in non-admitted assets and related items (Exhibit 14, Line 13, Col. 3)			
38. Change in liability for reinsurance in unauthorized companies (Page 3, Line 24.2, Col. 2 minus Col. 1)			
39. Change in reserve on account of change in valuation basis, (increase) or decrease (Exhibit 8A, Line D, Col. 4)			
40. Change in asset valuation reserve (Page 49, Lines 2 thru 3a, plus 11, Col. 7)			
41. Change in treasury stock (Page 3, Lines 36 (1) & (2) Col. 2 minus Col. 1)			
42. Change in surplus in Separate Accounts Statement			
43. Capital changes:			
a. Paid in			
b. Transferred from surplus (Stock Dividend)			
c. Transferred to surplus (Exhibit 12, Line 24, Col. 1, capital portion)			
44. Surplus adjustment:			
a. Paid in			
b. Transferred to capital (Stock Dividend) (Exhibit 12, Line 25, inside amount for stock \$)			
c. Transferred from capital (Exhibit 12, Line 24, Col. 1, surplus portion)			
45. Dividends to stockholders			
46. Aggregate write-ins for gains and losses in surplus			
47. Net change in capital and surplus for the year (Lines 35 thru 46)			
48. Capital and surplus, December 31, current year (Lines 34 + 47) (Page 3, Line 38)			
<b>DETAILS OF WRITE-INS</b>			
0601			
0602			
0603			
0698. Summary of remaining write-ins for Line 6 from overflow page			
0699. Totals (Lines 0601 thru 0603 plus 0698) (Line 6 above)			
2501			
2502			
2503			
2598. Summary of remaining write-ins for Line 25 from overflow page			
2599. Totals (Lines 2501 thru 2503 plus 2598) (Line 25 above)			
4601			
4602			
4603			
4698. Summary of remaining write-ins for Line 46 from overflow page			
4699. Totals (Lines 4601 thru 4603 plus 4698) (Line 46 above)			

accounting, an increase in reserves will reduce income.

Lines 20 through 23, involving commissions, general expenses and taxes, are also familiar concepts to property/casualty insurers.

The following briefly explains other important items:

Lines 2 and 3. **Considerations for supplementary contracts** refers to funds deposited with the company under settlement or policy dividend options. A policyholder or beneficiary may choose to leave funds, which are due because of death benefits or dividends, with the life insurance company for investment in additional life insurance or investment products.

Lines 8, 9, 10 and 11, **Death benefits, Matured endowments, Annuity benefits, disability benefits and benefits under accident and health policies** refer to payouts on policies. For example, death benefits refers to payment under a life policy upon the death of the insured.

Line 24, **Increase in loading on and cost of collection in excess of loading on deferred and uncollected premiums** is specific to life companies. Loading refers to the allocation of expenses in the pricing of a life insurance product. Because of the multi-year nature of life insurance contracts, loading can be accomplished in a number of ways. For example, the expense factor may be spread evenly over the life of the policy, or the policy may be front-end loaded, which means that early premium payments include most of the expense load. In most cases, loading expenses are accounted for in Line 20: **Commissions on premiums and annuity considerations**. However, because some premium income is reported, which is not due in the calendar year (see pages 75 and 76), the expenses related to this type of income are recorded in Line 24.

Line 30, **Federal income taxes incurred**: In general, life insurance companies are taxed at the normal federal tax rate (currently 35 percent for income in excess of \$10 million). Taxable income is calculated, starting with the base of statutory net income. Adjustments are then made in a number of areas, notably reserves, and acquisition costs. For tax purposes, reserves must be computed

according to federally prescribed standards. These standards dictate the mortality and morbidity tables and the discount factor used in calculating reserves. In determining taxable income acquisition costs are spread, generally, over 10 years. This is different from statutory accounting where they are immediately expensed.

## 8 Other Financial Reports

The reader has been given a fairly detailed overview of statutory accounting and knows the major variations in generally accepted accounting principles (GAAP) which are used by insurance companies. The insurance accounting picture would not be complete without noting that insurance companies also must prepare additional financial reports for such regulatory bodies as the Securities and Exchange Commission (SEC), security exchange organizations such as the New York Stock Exchange (NYSE), and stockholders and other interested parties. Among the most interested, of course, is the Internal Revenue Service, whose requirements, which differ from both statutory and GAAP practices, have already been discussed. Overall, insurance companies report considerably more data, in more detail, to more governmental agencies than the average U. S. corporation.

The reports to the SEC and stock exchanges, which are very similar to those for stockholders, are required only if the company's stock is publicly traded. These reports are aimed at providing investors with the information they need to make reasonably prudent decisions about whether to keep or acquire ownership shares in a particular insurance company. The regulations governing these reports, therefore, are not designed primarily to secure and demonstrate the companies' solvency, but to make clear their potential for increased earnings, larger dividends, and overall growth. As a result,

GAAP with its emphasis on the business as a going concern is the normal model for SEC reporting. Further, the SEC and the stock exchanges require that the financial statements of any publicly-owned company be examined by an independent accountant. When a company's stock is newly issued and is to be approved for public trading, the independent accountants must report that it is their unqualified opinion that the statements have been developed by management of the company in accordance with GAAP.

Generally, financial data in accordance with GAAP cannot be derived from the information presented in the statutory Annual Statement. Stock insurance companies are thus required to use additional accounting procedures to prepare their statements for the SEC and the stock exchanges. Most stock insurance companies develop fully-adjusted GAAP-based financial reports that look similar to those of any other corporation. To provide an understanding of the difference between statutory and GAAP statements, the following lists the major adjustments between the two accounting systems.

### Adjusting Net Income to GAAP

The adjustment of net income to a GAAP basis starts with the statutory net income figure from page 4 of the Annual Statement. Then a number of items are added or subtracted, depending on the type of item and whether it is a positive or negative number. These items include the following:

1. Acquisition costs applicable to unearned premiums. (See chapter 3 for a review of the rationale behind this change.)
2. Income tax differences that result from such areas as the immediate recognition of premium acquisition expenses and deferred income taxes resulting from temporary differences between financial and tax loss reserves.
3. The costs of furniture and equipment in excess of the year's depreciation in cases where new purchases have been charged to the year's expenses.

### Adjusting Stockholders' Equity

The adjustment of stockholders' equity includes the following changes in the policyholders' surplus as shown on the statutory statement:

1. Addition of acquisition costs associated with unearned premiums.
2. Addition of unearned premiums due to unauthorized assuming reinsurers and addition of losses recoverable from them. (These are the items on Lines 13A and 13D, on the liabilities side of the statutory balance sheet.)
3. Addition of statutory reserves in excess of carried estimates if the latter are deemed adequate.
4. Addition of other nonadmitted assets, such as office furniture and equipment, as may be appropriate under GAAP.
5. Subtraction of income tax effects due to the addition of acquisition costs (No. 1 above) and to net unrealized capital gains.
6. Additions or subtractions due to SFAS No. 115 adjustments. As discussed in chapter 4, under GAAP accounting, bonds not held to maturity are reported at market value. Under statutory accounting, all bonds are valued at amortized cost. If the market value of bonds not held to maturity is lower than the amortized cost, a deduction is made from statutory surplus. If the market value is higher than amortized cost, GAAP equity is increased.

The result of the adjustments to stockholders' equity can be broken down into:

1. Capital stock.
2. Capital in excess of the stocks' par values.
3. Retained earnings, which are further divided between appropriated (reserved for contingencies) and unappropriated.
4. Net unrealized gains and losses of investments less anticipated federal income taxes on that change.

## 9 Financial Ratios and Analysis

Once the accounting system has produced the financial statements for an insurance company, management of the company and other stakeholders, including investors, creditors and regulators, can analyze the company's financial health. One of the methods used to analyze a company is to calculate financial ratios and compare them with those of other companies or to benchmarks established for the industry.

Financial ratios provide a common ground for the evaluation of companies. In a given year, a company with \$1 billion in premiums may show a profit of \$50 million. Another company with \$10 million in premiums may report a profit of \$1 million. If total dollars were the only measure of profit, the first company would be the more profitable. However, if we look at the sales margin ratio calculated by taking profit as a percent of premiums, the smaller company with a sales margin of 10 percent (\$1 million as a percent of \$10 million) would appear to be more profitable than the giant company, whose sales margin was 5 percent (\$50 million as a percent of \$1 billion).

In this chapter, the most common ratios used in the analysis of property/casualty insurance companies are reviewed. These are the combined ratio, the rate of return on equity or capital, the profit margin, and the premium to surplus ratio. Of note, the definitions of financial ratios provided here are not carved in stone. Analysts frequently use variations of these definitions.

### The Combined Ratio

The combined ratio is calculated by adding two ratios — the **loss ratio** and the **expense ratio**.

The **loss ratio** is determined by dividing incurred losses by earned premiums. In the year 1994, the loss ratio for the industry was 81.3 percent. This means that for every hundred dollars of premiums, the industry allocated \$81.3 for claims.

The **expense ratio** is calculated by dividing expenses by net premiums written. Premiums written rather than premiums earned are used in the denominator on the theory that expenses are more closely related to premiums written than premiums earned. For example, if a company writes \$10 million in premiums in the first quarter, it will be recorded for the first quarter as \$10 million of written premiums, but only \$2.5 million of earned premiums (1/4 of \$10 million). If the company has selling expenses of \$1 million for the first quarter, under statutory accounting it will report \$1 million of expenses for that quarter. The expense ratio for the first quarter is 10 percent (\$1 million in expenses as a percent of \$10 million in written premiums). If the earned premium figure were used, the ratio for the first quarter would be 40 percent (\$1 million as a percent of \$2.5 million).

This example is extreme. For most companies with a stable premium flow, there will be little difference between using earned or written premiums as the denominator in calculating the expense ratio.

In 1994, the expense ratio for the industry was 26.0 percent, meaning that \$26 was allocated for expense out of every \$100 in written premiums.

The combined ratio is calculated by adding the loss ratio to the expense ratio. For 1994, the combined ratio was 107.3 (81.3 + 26.0). This implies that the industry allocated \$107.3 in claims and expense for every \$100 in premiums. However, this loss was offset by income on the investment side.

The combined ratio is reported before and after policyholder divi-

dends. The ratio **before policyholder dividends** includes the loss and expense ratio. The ratio **after policyholder dividends** is calculated by adding the ratio of policyholder dividends to earned premiums to the ratio **before** dividends. In 1994, the dividend ratio was 1.2, so that the combined ratio after dividends was 108.5 (107.3 + 1.2).

### Rate of Return

All sources of income are included in calculating the **rate of return on equity**. In calculating the rate of return, the numerator is usually net income after taxes. Under statutory accounting, policyholders' surplus is used as the denominator. Under GAAP, the denominator is stockholders equity. The denominator — surplus or equity — can be taken at its value at the start of the year, the end of the year, or the average of the year. It is customary in the insurance industry to use the end of the year. For 1994, the rate of return on a statutory basis (meaning both the numerator and denominator were calculated using statutory accounting) was 5.3 percent. On a GAAP basis, the rate was 5.5 percent. GAAP allows for comparisons to be made with other industries, which use GAAP. For example, the rate of return for the Fortune 500 in 1994 was 13.7 percent. Property/casualty results were depressed in part because of the Northridge earthquake.

### Profit Margin

The **profit margin** is defined as net income after taxes divided by premiums earned. This ratio has become more important for the property/casualty insurance industry because the National Association of Insurance Commissioners has begun publishing data by line and by state on the profit margin. In 1994, the ratio for the total industry was 4.2 percent, meaning that for every \$1 of premium, the industry earned 4.2 cents.

### Premium/Surplus Ratio

The **premium/surplus ratio** is calculated by dividing net premiums written by year-end policyholders' surplus. For 1994, the ratio stood

at 1.3 to 1, meaning that for every dollar of surplus the industry wrote \$1.30 in premiums. This ratio is a measure of solvency risk. A company with a large volume of premium relative to its surplus runs the risk of a larger loss which could wipe out its relatively low level of capital. A rule of thumb used by regulators is that a company with a ratio above 3:1 needs to be scrutinized as to its financial strength.

### **Risk-Based Capital**

In early 1995, property/casualty insurance companies will begin reporting their risk-based capital (RBC) for 1994 financial statements, as required by the National Association of Insurance Commissioners.

RBC is a tool that analysts and regulators can use to assess the capital adequacy of an insurance company.

Risk-based capital is a formula which calculates the minimum level of capital that a company should have, based on its size and the kind of risks to which it is exposed. Consider a company with \$100 million in assets and \$75 million in liabilities. Its capital (assets minus liabilities) is \$25 million. On the asset side, assume that the \$100 million is divided between \$50 million in U.S. government bonds and \$50 million in common stock. Since there is no fear of default by the U.S. government, the RBC formula requires no risk-based capital for the U.S. bonds. However, there are risks associated with common stock investments and the RBC formula calls for a 15 percent rate, which results in a charge of \$7.5 million. The idea behind the capital charge is that the company should have sufficient capital to withstand a loss of \$7.5 million if stock prices fall. But what if stock prices drop 50 percent? Then the company's \$25 million in capital would be wiped out and the company would go insolvent. This does not mean that the RBC formula is wrong. The point is that there is no right or wrong formula which will state unequivocally that a company will remain solvent under every conceivable scenario. RBC is a guide which must be used along with other devices to evaluate the financial stability of an insurance company.

In addition to asset or investment risk, the risk-based capital formula looks at three other areas of risk: underwriting risk, credit risk, and off-balance sheet risk. Specific amounts of capital are calculated for each of these risk categories. A final formula calculates the company's risk-based capital.

## Appendix: Sources for Further Information

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