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Fall 2023 CAS Exam 6U Study Manual

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Odomirok – CAS Financial Reporting Chapter 7: The Statutory Balance Sheet—A Measure of Solvency

The balance sheet is the most important piece of an insurer's financial statement to regulators since it shows the extent the company's assets can meet its liabilities. Actuaries are involved in estimating the loss and LAE reserves, which are generally the largest liability on the balance sheet. In addition, actuaries are often involved in capital modeling—to do this effectively they need an understanding of the assets and liabilities on the balance sheet, along with the risks that go along with each item.

Assets (p. 2 of the Annual Statement)

I have summarized the Total P&C Insurance Industry assets (page 2) of the Annual Statement, as of 12/31/2022 in Table 1 on the following page (also included at the end of the Odomirok Excel workbook). The "percent of total" columns and non-invested asset subtotal line, in blue, were added for illustrative purposes and not included in the actual Annual Statement. This will give you an idea of the distribution of assets held by P&C insurers in total (this will obviously vary by individual company). Referencing this table, as well as the Excel versions of the Fictitious Financial Statement from the appendix will be beneficial when reading this chapter.

There are two distinctions within the assets held by insurers: "cash and invested assets" vs. "non-invested assets" as well as "admitted" vs. "non-admitted" assets. Cash and invested assets are shown in Rows 1-12 and include items that could be readily sold to meet liabilities. Non-invested assets are less liquid and shown in Rows 13-25. This distinction is made due to SAP's focus on solvency. Non-admitted assets are not recognized by regulators in evaluating the solvency of insurers under SAP. Non-admitted assets are not readily convertible to meet liabilities now or in the future and therefore should not be considered in evaluating solvency (we use the Net Admitted Assets, while the Gross and Non-Admitted Assets are shown for informational purposes).

As you can see in Table 1, Bonds and Common stocks are the most widely held assets on insurers' balance sheets, by a rather wide margin. The text provides a brief overview of several of the largest classes of assets.

Bonds (Line 1) are securities that pay one or more future interest payments, along with the face value at maturity. At purchase, insurers record bonds at their actual cost, including brokerage and other fees—this purchase price may be more or less than the face value of the bond. At maturity the bond will be worth its face value. How the bond is valued in the insurers financial statement between purchase and maturity depends on the NAIC's Security Valuation Office (SVO) rating of the bond. Bonds receiving the two highest ratings, NAIC 1 or NAIC 2, are carried at their amortized cost. Lower rated bonds, falling in the NAIC 3-6 range, will be carried at the lower of their amortized value and fair market value. The recorded value of a bond after applying these rules is call the "adjusted carrying value."

Schedule D provides more information on specific bonds held by insurers. Insurers hold a mix of government and corporate bonds, with about an equal split between maturities greater than and less than 5 years. The majority of bonds held fall into the highest rating category, NAIC 1.

Stocks (Line 2) are securities that represent ownership in a company but are subordinate to the claims of bondholders and creditors. Common stocks include voting privileges and may receive dividends. Preferred stocks do not include voting privileges but usually provide guaranteed dividends and receive preferential treatment over common stock in liquidation. At purchase, insurers record stocks at their actual cost, including brokerage and other fees. After purchase, publicly traded stocks are recorded at their fair value (i.e., market value). If a stock is not publicly traded or a price is not available, the SVO will determine a fair value. Redeemable preferred stocks with the two highest NAIC SVO ratings are recorded at the original purchase price plus acquisition costs. Perpetual preferred stocks with the two highest NIAC SVO ratings are recorded at fair value. For both types of preferred stock, those with the bottom four ratings are recorded at the lower of book or fair value.

Real estate (Line 4) is separated into three categories in the balance sheet:

4.1- Properties occupied by the company (must occupy ≥50% of the property): recorded at depreciated cost

4.2- Properties held for the production of income: recorded at depreciated cost

4.3- Properties held for sale: recorded at the lower of depreciated cost and fair value

Details of the company's real estate holdings are shown in Schedule A of the Annual Statement.

Cash, cash equivalents and short-term investments (Line 5) includes items that are nearly immediately convertible into cash. Cash equivalents have a maturity of less than three months while short term investments have a maturity of one year or less. The cash, cash equivalents and short-term investments asset shown on Line 5 of the Assets page (p. 2) will match the ending cash, cash equivalents and short-term investments on Line 19.2 of the Cash Flows exhibit (p. 5). More detail on cash is shown in Schedule E-1, cash equivalence in Schedule E-2, and short-term investments in Schedule DA.

Table 1: Assets
Total U.S. P&C Insurance Industry
2022 Statutory Financials (000s)

			1		2	3	
			Current Year				
			Assets	*% of Total*	Nonadmitted Assets	Net Admitted Assets (Cols. 1 - 2)	*% of Total*
1	Bonds (Schedule D)		1,216,799,893	*45.2%*	1,178,122	1,215,621,771	*46.2%*
2	Stocks (Schedule D):						
	2.1	Preferred stocks	16,379,184	*0.6%*	15,583	16,363,601	*0.6%*
	2.2	Common stocks	585,065,229	*21.7%*	7,781,633	577,283,596	*21.9%*
3	Mortgage loans on real estate (Schedule B):						
	3.1	First liens	28,435,796	*1.1%*	4,186	28,431,610	*1.1%*
	3.2	Other than first liens	930,456	*0.0%*	0	930,456	*0.0%*
4	Real estate (Schedule A):						
	4.1	Properties occupied by the company (less $5,968 encumbrances)	8,404,827	*0.3%*	22,199	8,382,628	*0.3%*
	4.2	Properties held for the production of income (less $93,840 encumbrances)	4,168,827	*0.2%*	22,649	4,146,178	*0.2%*
	4.3	Properties held for sale (less $29,556 encumbrances)	376,570	*0.0%*	15,985	360,585	*0.0%*
5	Cash ($18,347,918, Schedule E-Part 1), cash equivalents ($66,467,445, Schedule E-Part 2) and short-term investments ($70,897,487, Schedule DA)		155,739,491	*5.8%*	27,584	155,711,907	*5.9%*
6	Contract loans (including $0 premium notes)		1,776	*0.0%*	1,746	30	*0.0%*
7	Derivatives (Schedule DB)		2,349,978	*0.1%*	1,061,566	1,288,411	*0.0%*
8	Other invested assets (Schedule BA)		181,624,221	*6.7%*	7,707,092	173,917,128	*6.6%*
9	Receivables for securities		2,819,267	*0.1%*	4,161	2,815,107	*0.1%*
10	Securities lending reinvested collateral assets (Schedule DL)		6,050,871	*0.2%*	0	6,050,871	*0.2%*
11	Aggregate write-ins for invested assets		2,102,459	*0.1%*	1,607,972	494,487	*0.0%*
12	Subtotals, cash and invested assets (Lines 1 to 11)		2,211,248,845	*82.1%*	19,450,479	2,191,798,366	*83.3%*
13	Title plants less $0 charged off (for Title insurers only)		212	*0.0%*	0	212	*0.0%*
14	Investment income due and accrued		10,496,438	*0.4%*	13,118	10,483,319	*0.4%*
15	Premiums and considerations:						
	15.1	Uncollected premiums and agents' balances in the course of collection	94,927,463	*3.5%*	4,506,219	90,421,244	*3.4%*
	15.2	Deferred premiums, agents' balances and installments booked but deferred and not yet due (including $2,635,649 earned but unbilled premiums)	167,079,730	*6.2%*	466,933	166,612,797	*6.3%*
	15.3	Accrued retrospective premiums ($2,507,661) and contracts subject to redetermination ($0)	3,051,792	*0.1%*	130,148	2,921,644	*0.1%*
16	Reinsurance:						
	16.1	Amounts recoverable from reinsurers	63,155,324	*2.3%*	38,953	63,116,371	*2.4%*
	16.2	Funds held by or deposited with reinsured companies	17,621,737	*0.7%*	83,482	17,538,255	*0.7%*
	16.3	Other amounts receivable under reinsurance contracts	829,510	*0.0%*	278	829,232	*0.0%*
17	Amounts receivable relating to uninsured plans		121,867	*0.0%*	585	121,282	*0.0%*
18	Current federal and foreign income tax recoverable and interest thereon		7,623,461	*0.3%*	12,858	7,610,603	*0.3%*
18	Net deferred tax asset		28,967,844	*1.1%*	7,356,339	21,611,505	*0.8%*
19	Guaranty funds receivable or on deposit		358,073	*0.0%*	5,312	352,761	*0.0%*
20	Electronic data processing equipment and software		8,830,589	*0.3%*	7,311,822	1,518,767	*0.1%*
21	Furniture and equipment, including health care delivery assets ($475)		2,296,195	*0.1%*	2,281,972	14,224	*0.0%*
22	Net adjustment in assets and liabilities due to foreign exchange rates		106,269	*0.0%*	0	106,269	*0.0%*
23	Receivables from parent, subsidiaries and affiliates		28,347,429	*1.1%*	375,705	27,971,724	*1.1%*
24	Health care ($1,349) and other amounts receivable		25,908	*0.0%*	(1,113)	27,021	*0.0%*
25	Aggregate write-ins for other than invested assets		49,700,863	*1.8%*	20,785,314	28,915,549	*1.1%*
	Subtotal, non-invested assets		*483,540,705*	*17.9%*	*43,367,925*	*440,172,780*	*16.7%*
26	Total assets excluding Separate Accounts, Segregated Accounts and Protected Cell Accounts (Lines 12 to 25)		2,694,789,550	*100.0%*	62,818,403	2,631,971,146	*100.0%*
27	From Separate Accounts, Segregated Accounts and Protected Cell Accounts		0	*0.0%*	0	0	*0.0%*
28	Total (Lines 26 and 27)		2,694,789,550	*100.0%*	62,818,403	2,631,971,146	*100.0%*

Uncollected and deferred premiums and agents' balances (Lines 15.1 and 15.2) represent premiums that have been written but have not yet been received. Uncollected premiums and agents' balances (15.1) include premium due as of the financial statement date, while deferred premiums and agents' balances (15.2) include premium due after the financial statement date. Premium that is more than 90 days past due from an agent or policyholder is considered a non-admitted asset—the insurer should also set up an allowance for bad debts for any amount they deem unlikely to be collected. These measures (uncollected and deferred balances, as well as portion non-admitted) can be benchmarked against the industry—amounts significantly above industry norms could signal potential cash flow and liquidity issues.

Amounts recoverable from reinsurers (Line 16.1) represent amounts expected to be received from reinsurers on loss and LAE that has been paid out. Since reserves are shown in the balance sheet on a net of reinsurance basis it would not be appropriate to also reflect expected reinsurance recoveries on loss and LAE as an asset, since they are already excluded from the liability. Additional details on reinsurance are shown in Schedule F, which is covered in great detail later in this paper.

Net deferred tax assets (DTA) (Line 18.2) represent expected future tax benefits, related to amounts previously recorded, that are not expected to be reflected in the tax filings as of the reporting date (deferred tax liabilities [DTLs] are shown separately on the liabilities side of the balance sheet). DTAs can arise from differences in statutory accounting and tax accounting. Tax accounting requires the discounting of reserves, resulting in a higher tax basis—as the discount unwinds toward their ultimate nominal value, this will increase future losses on a tax basis, reducing future tax burdens as a result. DTAs can also arise when an insurance company has a net operating loss and expects those losses to carry forward and reduce future tax liabilities by offsetting future profits. Insurers must perform admissibility testing to determine the admitted DTA asset. As you can see in Table 1, a large portion of the net deferred tax asset is non-admitted.

Receivables from parent, subsidiaries and affiliates (Line 23) represent receivable balances for services or resources shared between affiliates or from a parent company (e.g., internal support staff or third-party vendor agreements).

Non-admitted assets

The following is a list of common non-admitted assets:

- Premiums that are more than 90 days past due from an agent or policyholder.
- Interest due and accrued more than 90 days past due.
- DTAs that do not meet statutory admissibility tests.
- Amounts held beyond state limits for specific types of bonds, stocks, mortgage loans, or real estate.
- Capitalized electronic data processing equipment and software beyond state-specific admitted limits.
- Office furniture, equipment, and supplies.
- Balances due from brokers not received within 15 days of settlement.
- Funds held or deposited with reinsured companies above associated liabilities, or with insolvent insureds.
- 10% of earned but unbilled premium in excess of collateral specifically held for anticipated audit premiums.
- 10% of deductibles recoverable (from large deductible policies) in excess of collateral specifically held for anticipated audit premiums, plus any amount beyond 90 days past due where there is no collateral, and any additional amount not expected to be collected.
- 10% of the unsecured portion of accrued retrospective premiums.
- Excess of book value over market value of real estate assets (i.e., only the market value is admitted—to the extent the recorded value is higher than market value, it is non-admitted).

<u>Liabilities, surplus, and other funds</u> (p. 3 of the Annual Statement)

Liabilities are obligations the company must fulfill, based on past events or transactions (e.g., losses and expenses). To meet regulatory requirements, protect against adverse outcomes, and to be prudent, most insurers have significantly more assets than liabilities—this excess amount is called surplus and serves as equity in the business and policyholder protection. The fundamental accounting equation is:

$$Assets = Liabilities + Surplus \quad \Rightarrow \quad Surplus = Assets - Liabilities$$

Since liabilities plus surplus equal assets, liabilities and surplus are presented on the same page of the Annual Statement (p. 3). The assets of interest in the above equation are only the admitted assets—SAP does not allow insurers to take credit for non-admitted assets in their surplus. In the same way I summarized the industry wide P&C assets from page 2 of the Annual Statement, I have summarized the industry wide P&C liabilities and surplus from page 3 of the Annual Statement in Table 2 on the following page. The first thing to notice is the Total Liabilities and Surplus in Row 38 matches the Total Admitted Assets from Column 3, Row 28 of Table 1. Again, I have added columns in blue, which are not in the true Annual Statement, but provide prospective on the relative size of various items in the exhibit.

You will notice surplus is nearly as large as liabilities, meaning the P&C insurance industry is very well capitalized and able to withstand a very sizable increase in liabilities (or reduction in assets) while remaining solvent—though this can vary significantly by individual insurer. Losses (Line 1), LAE (Line 3), and Unearned premiums (Line 9) clearly stick out as the largest liabilities on the balance sheet—each of which involves actuaries in developing the estimate. The remainder of this chapter covers these three large liabilities and some additional items of interest to actuaries on the liability and surplus side of the balance sheet.

<u>Loss and loss adjustment expenses</u> (Lines 1 and 3) represent management's best estimate on loss and LAE reserves, net of reinsurance (including assumed reinsurance, less ceded reinsurance). Management owns these estimates, but they will certainly be influenced by their actuaries. These lines are two of the most important items that a qualified actuary must give an opinion on in the Statement of Actuarial Opinion (SAO), as required to be filed with the Annual Statement. Additional details around these reserves are presented in Schedule P and in the Notes to Financial Statements within the Annual Statement.

<u>Reinsurance payable on paid losses and loss adjustment expenses</u> (Line 2) represents assumed reinsurance payable to the insured for paid loss and LAE. This amount would obviously be more material for insurance companies that focus on selling reinsurance. More detail on reinsurance is shown in Schedule F, and this number will match the total in Schedule F, Part 1, Column 6 (Total Assumed Reinsurance Recoverable on Paid Loss and LAE). Loss and LAE reserves on assumed reinsurance that has not yet been paid by the reinsured are recorded under the loss and LAE reserves in Lines 1 & 3, not here since reinsurance isn't payable until the reinsured first makes the payment.

<u>Other expenses (excluding taxes, licenses, and fees)</u> (Line 5) is primarily made up of incurred but unpaid general, administrative, and investment expenses.

<u>Unearned premiums</u> (Line 9) represent the liabilities related to the unexpired portion of premium on all policies in-force. The liability is related to the insurer's obligation to provide future coverage and the potential obligation to refund the unexpired portion of premium in the event of policy cancelation. When a policy is written, the written premium is recorded and an offsetting unearned premium reserve (UPR) is established, while all expenses related to the acquisition (e.g., commissions, taxes, fees) are recognized immediately. This results in the acquisition costs being recognized on day one of the policy, yet premium being earned throughout the policy period, leading to an accounting loss when the policy is written. This conservative accounting is consistent with the goals of SAP.

Table 2: Liabilities, Surplus And Other Funds
Total U.S. P&C Insurance Industry
2022 Statutory Financials (000s)

		1		
		Current Year	% of Liab. + Surplus	% of Liabilities
1	Losses (Part 2A, Line 35, Column 8)	707,531,782	26.9%	42.8%
2	Reinsurance payable on paid losses and loss adjustment expenses	43,026,725		2.6%
	(Schedule F, Part 1, Column 6)		0.0%	0.0%
3	Loss adjustment expenses (Part 2A, Line 35, Column 9)	136,348,709	5.2%	8.3%
4	Commissions payable, contingent commissions and other similar charges	10,680,831	0.4%	0.6%
5	Other expenses (excluding taxes, licenses and fees)	29,866,823	1.1%	1.8%
6	Taxes, licenses and fees (excluding federal and foreign income taxes)	6,144,796	0.2%	0.4%
7.1	Current federal and foreign income taxes (including $210,766) on	3,055,392	0.1%	0.2%
	realized capital gains (losses)			0.0%
7.2	Net deferred tax liability	44,361,716	1.7%	2.7%
8	Borrowed money $9,672,711 and interest thereon $73,037	10,006,808	0.4%	0.6%
9	Unearned premiums (Part 1A, Line 38, Column 5) (after deducting unearned premiums			
	for ceded reinsurance of $348,662,834 and including warranty reserves of $7,196,814 and			
	accrued accident and health experience rating refunds including $0 for medical loss ratio			
	rebate per the Public Health Service Act)	339,372,628	12.9%	20.5%
10	Advance premium	5,626,751	0.2%	0.3%
11	Dividends declared and unpaid:			
	11.1 Stockholders	1,602,274	0.1%	0.1%
	11.2 Policyholders	1,061,028	0.0%	0.1%
12	Ceded reinsurance premiums payable (net of ceding commissions)	101,287,390	3.8%	6.1%
13	Funds held by company under reinsurance treaties (Schedule F, Part 3, Column 20)	44,688,474	1.7%	2.7%
14	Amounts withheld or retained by company for account of others	17,495,228	0.7%	1.1%
15	Remittances and items not allocated	2,370,765	0.1%	0.1%
16	Provision for reinsurance (including $95,134 certified) (Schedule F, Part 3 Column 78)	2,958,551	0.1%	0.2%
17	Net adjustments in assets and liabilities due to foreign exchange rates	743,958	0.0%	0.0%
18	Drafts outstanding	6,607,870	0.3%	0.4%
19	Payable to parent, subsidiaries and affiliates	25,827,890	1.0%	1.6%
20	Derivatives	428,609	0.0%	0.0%
21	Payable for securities	4,671,647	0.2%	0.3%
22	Payable for securities lending	8,070,916	0.3%	0.5%
23	Liability for amounts held under uninsured plans	6,871	0.0%	0.0%
24	Capital notes $0 and interest thereon $0	0	0.0%	0.0%
25	Aggregate write-ins for liabilities	98,484,736	3.7%	6.0%
26	Total liabilities excluding protected cell liabilities (Lines 1 through 25)	1,652,329,169	62.8%	100.0%
27	Protected cell liabilities	0	0.0%	0.0%
28	Total liabilities (Lines 26 and 27)	1,652,329,169	62.8%	100.0%
29	Aggregate write-ins for special surplus funds	110,625,782	4.2%	
30	Common capital stock	3,932,856	0.1%	
31	Preferred capital stock	609,954	0.0%	
32	Aggregate write-ins for other than special surplus funds	1,563,993	0.1%	
33	Surplus notes	15,958,186	0.6%	
34	Gross paid in and contributed surplus	220,617,150	8.4%	
35	Unassigned funds (surplus)	629,747,497	23.9%	
36	Less treasury stock, at cost:			
	36.1 10,477,726 Shares common (value included in Line 30 $38,073)	3,228,279	0.1%	
	36.2 175,732,809 Shares preferred (value included in Line 31 $175,733)	185,162	0.0%	
37	Surplus as regards policyholders (Lines 29 to 35, less 36) (Page 4, Line 39)	979,641,978	37.2%	
38	Totals (Page 2, Line 28, Col. 3)	2,631,971,147	100.0%	

The unearned premium amount shown on Line 9 will match the total shown in Row 38, Column 5 of the Underwriting and Investment Exhibit (U&IE) Part 1A (p. 7). In U&IE Part 1A the unearned premium reserves are broken down between policies of one year in length or less (Col 1), policies greater than one year (Col 2), earned but unbilled premium (Col 3), and expected premium on retrospectively rated policies (Col 4).

In addition, if the UPR is not sufficient to cover the future expected losses, expenses, and other costs (see the SSAP 53 notes later in the manual for more detail) for a block of business, a premium deficiency reserve (PDR) needs to be set up—the PDR will be recorded as a write-in liability under Line 25 and be disclosed in the Notes to Financial Statements section.

Ceded reinsurance premiums payable (net of ceding commissions) (Line 12) represent premium owed to reinsurers for reinsurance ceded. This amount is net of any ceding commissions retained by the cedant (which cover expenses incurred in issuing the reinsured policies).

Funds held by company under reinsurance treaties (Line 13) represent the funds held by a ceding company as collateral for future reinsurance recoverables from a reinsurer, including ceded premiums that were payable but instead held as collateral under the terms of the contract (i.e., money held by the ceding company to cover future incurred losses but still belonging to the reinsurer).

Provision for reinsurance (Line 16) is a statutory accounting liability established for reinsurance recoverables that may not be collectable. The calculation of this amount is done in Schedule F and covered in detail later in this paper.

The following are some noteworthy items recorded under the surplus items in Rows 29-37 of the Liabilities, Surplus and Other Funds exhibit (p. 3):

Common capital stock (Line 30) represents the par value of the company's common stock issued and outstanding ($0 for mutual companies). Par value is set when the stock is initially offered and is the stated/face value of the stock (stock cannot be sold at IPO below the par value)—this has no relation to the market value of the stock and is often set at a very low value.

Gross paid in and contributed surplus (Line 34) represents amounts received through the sale of company stock in excess of the par value (will again be $0 for mutual insurers).

Unassigned funds (surplus) (Line 35) represents surplus that has been attained over time through retained earnings.

Odomirok – CAS Financial Reporting Chapters 8-9: The Statutory Income Statement & Capital and Surplus Account

The Statement of Income on page 4 of the insurer's Annual Statements includes the company's income statement (Lines 1-20) and capital and surplus account (Lines 21-39). The income statement records the revenue, expenses, and net income during the financial reporting period. The capital and surplus account records changes in surplus that are not recorded in the income statement and reconciles the beginning and ending surplus. I have summarized the combined P&C industry Statement of Income as of 12/31/2022 in Table 3 on the following page.

The income statement portion of the exhibit (Lines 1-20) is broken down into three sources of income: underwriting income (Lines 1-8), investment income (Lines 9-11), and other income (Lines 12-15). Each of the three sources of income are presented before policyholder dividends and federal and foreign income taxes, which are shown as separate line items on Lines 17 and 19, respectively.

Underwriting income is generally the most important and relevant income source to actuaries. Underwriting income (Line 8) is earned premium (Line 1) plus net income from protected cells (Line 7) minus loss and LAE incurred (Lines 2-3), other underwriting expenses incurred (Line 4), and write-ins for underwriting deductions (Line 5)—all during the time period covered by the financial statements.

Incurred loss and LAE (Lines 2-3) during the period is equal to the ultimate from claims incurred in the current period (since this is all new exposure during the period) plus the change in ultimate estimates on prior years. Equivalently, it is equal to the payments during the period (from all years) plus the change in unpaid (from all years):

$$\begin{aligned} \textit{Income Statement Incurred} &= \textit{Current Period Ultimate} + \textit{Change in Prior Years Ultimates} \\ &= \textit{Payments} + \textit{Change in Unpaid} \end{aligned}$$

The other underwriting expenses incurred (Line 4) include all such expenses incurred during the current period, regardless of if they have been paid or not (i.e., their ultimate amount). As you can see in Table 3, the other underwriting expenses incurred are rather large (about 2.5x LAE incurred and nearly half the losses incurred)—therefore this amount is very important to the profitability of insurers and to the financial statements.

> The underwriting and investment exhibit (U&IE—pages 6-11 of the Annual Statement) shows greater detail and the allocation of these other underwriting expenses by type of expense (e.g., "commissions and brokerage", "rent and rent items", and "salary"— shown in the rows of U&IE Pt. 3) and expense category (i.e., LAE, Other U/W Expenses, and Investment Expenses— shown in the columns of U&IE Pt. 3). Expenses are also allocated by line of business. Allocating some expenses are straightforward, while others such as "Salaries" and "Rent" are more complicated. Expenses should be allocated based on information relevant to the expense. For example, we could allocate home office "Rent" between LAE, Other U/W Expense, and Investment Expenses based on the headcount of personnel performing these functions within the home office. Similarly, we could allocate "Rent" to line of business by premium volume. Expenses are important to actuaries since they affect rate levels—lower expenses will translate into more competitive rates and profitability. The allocation of expenses is also very important to actuaries, because if not done accurately, there might be subsidies in rates between products—if one line of business' expenses are overstated, its premium will be too high, while the other lines of business will be too low.

Investment income is an extremely important source of income for insurance companies, as can be seen in Table 3 on the following page. Investment income (Line 11) was $73.3 billion across the industry in 2022, compared to a loss of $22.5 billion in underwriting income (Line 8). The large amount of investment income arises as insurers generally receive premium payments at the beginning of the policy, while losses and expenses are often not paid out until far into the future—these future losses and expenses will be reserved for, but the dollars backing them up will be invested and earn income until paid out.

Table 3: Statement of Income
Total U.S. P&C Insurance Industry
2022 Statutory Financials (000s)

	UNDERWRITING INCOME	1 Current Year
1	Premiums earned (Part 1, Line 35, Column 4)	745,686,936
	DEDUCTIONS:	
2	Losses incurred (Part 2, Line 35, Column 7)	493,815,832
3	Loss adjustment expenses incurred (Part 3, Line 25, Column 1)	73,800,587
4	Other underwriting expenses incurred (Part 3, Line 25, Column 2)	198,921,585
5	Aggregate write-ins for underwriting deductions	1,623,077
6	Total underwriting deductions (Lines 2 through 5)	768,161,081
7	Net income of protected cells	0
8	Net underwriting gain (loss) (Line 1 minus Line 6 plus Line 7)	(22,474,145)
	INVESTMENT INCOME	
9	Net investment income earned (Exhibit of Net Investment Income, Line 17)	71,218,110
10	Net realized capital gains (losses) less capital gains tax of $483,891 (Exhibit of Capital Gains (Losses))	2,077,847
11	Net investment gain (loss) (Lines 9 + 10)	73,295,957
	OTHER INCOME	
12	Net gain (loss) from agents' or premium balances charged off	
	(amount recovered $375,989 amount charged off $2,492,191)	(2,182,122)
13	Finance and service charges not included in premiums	3,594,083
14	Aggregate write-ins for miscellaneous income	636,307
15	Total other income (Lines 12 through 14)	2,048,267
16	Net income before dividends to policyholders, after capital gains tax and before all other federal	
	and foreign income taxes (Lines 8+11+15)	52,870,079
17	Dividends to policyholders	3,162,877
18	Net income, after dividends to policyholders, after capital gains tax and before all other federal	
	and foreign income taxes (Line 16 minus Line 17)	49,707,202
19	Federal and foreign income taxes incurred	6,083,620
20	Net income (Line 18 minus Line 19) (to Line 22)	43,623,582
	CAPITAL AND SURPLUS ACCOUNT	
21	Surplus as regards policyholders, December 31 prior year (Page 4, Line 39, Column 2)	1,045,601,545
22	Net income (from Line 20)	43,623,582
23	Net transfers (to) from Protected Cell accounts	0
24	Change in net unrealized capital gains or (losses) less capital gains tax of $-21,575,774	(97,189,979)
25	Change in net unrealized foreign exchange capital gain (loss)	(1,645,367)
26	Change in net deferred income tax	1,736,512
27	Change in nonadmitted assets (Exhibit of Nonadmitted Assets, Line 28, Col. 3)	6,701,698
28	Change in provision for reinsurance (Page 3, Line 16, Column 2 minus Column 1)	675,601
29	Change in surplus notes	1,903,301
30	Surplus (contributed to) withdrawn from protected cells	0
31	Cumulative effect of changes in accounting principles	55,337
32	Capital changes:	
	32.1 Paid in	138,679
	32.2 Transferred from surplus (Stock dividend)	4,473
	32.3 Transferred to surplus	(6,731)
33	Surplus adjustments:	
	33.1 Paid in	11,362,616
	33.2 Transferred to capital (Stock dividend)	(4,473)
	33.3 Transferred from capital	221,816
34	Net remittances from or (to) Home office	(57,877)
35	Dividends to stockholders	(37,375,007)
36	Change in treasury stock (Page 3, Lines 36.1 and 36.2, Column 2 minus Column 1)	(2,712,451)
37	Aggregate write-ins for gains and losses in surplus	6,608,703
38	Change in surplus as regards policyholders for the year (Lines 22 through 37)	(65,959,567)
39	Surplus as regards policyholders, December 31 current year (Line 21 plus Line 38) (Page 3, Line 37)	979,641,978

Net investment income (Line 11) is the sum of net investment income earned (Line 9) and net realized capital gains (Line 10). Net investment income earned (Line 9) is from interest and dividends earned on invested assets during the year (i.e., income earned during the period, even if paid/received after the period)—this amount is net of investment expenses and other costs, but gross of federal income taxes. Net realized capital gains (Line 10) are the result of selling an asset for more (or less) than the amortized original cost and presented after capital gains taxes (changes in asset values of held assets are not realized, but rather unrealized and are recorded in the capital and surplus account). Both of these values come from the exhibit of net investment income and the exhibit of capital gains, which show details of each by asset class, on page 12 of the Annual Statement. The details underlying these two exhibits come from Schedules A, B, D, DA, and DB.

Net investment income earned (Line 9) from bonds is comprised of the four following components:

1) Interest received during the year: We start with the interest received during the year, but what we record in total is the interest earned during the year, so we must adjust this value by items 2-3 below to put it on an accrual basis (meaning it reflects what is earned, rather than when the cash is received).
2) Change in interest due and accrued: This adjusts for differences between interest received and interest accrued during the period.
3) Interest paid for accrued interest on dividends: When a bond is purchased between coupon payments, the buyer must pay the seller the portion of the coupon earned while they owned the bond.
4) Current year's amortization/accretion: Bond purchase prices will generally be different than the face value of the bond due to differences between market interest rates and the coupon rate of the bond. The bond discount or premium will be realized as either positive (if bought at a discount) or negative (if bought at a premium) investment income over the life of the bond.

Net realized capital gains (Line 10) from bonds is comprised of the three following components:

1) Realized gain (loss) on sale or maturity: Recall that bonds are recorded at amortized cost for those rated NAIC 1-2 and the lower of amortized cost and fair value for those rated NAIC 3-6. Amortized cost and fair value converge to the par value as the bond matures, so if held until maturity there will be no realized capital gain or loss on the bond. A gain or loss can be realized if the bond is sold for a price different than the recorded value (e.g., selling a bond rated NAIC 1-2 prior to maturity).
2) Foreign exchange gain (loss) on disposal: Bonds denominated in another currency will be affected by changes in exchange rates—these changes are reflected in the adjusted carried value but are unrealized until the bond is sold or matures.
3) Other than temporary impairments recognized: Impairment occurs when a company determines they are unlikely to receive amounts due—if this impairment is not just temporary, it should be recognized as a realized loss.

Net investment income earned (Line 9) from stocks is simply the dividends received during the year plus the change in accrual for dividends paid but not received (since recorded on an accrual basis). After purchase, common stocks of unaffiliated companies are recorded at fair value. Changes in fair value are recorded as unrealized gains prior to disposal—when sold, the difference between the purchase price and sale proceeds will become a realized capital gain (or loss) in Line 10. Similarly, changes in preferred stock values are unrealized until disposed of, at which time the difference between recorded value and sales proceeds becomes a realized capital gain (or loss) in Line 10.

Derivatives are not a major asset class for insurers but following the enormous issues AIG ran into during the financial crisis due to derivatives written by their Financial Products division, they are very important to understand and disclose. If a derivative is purchased to hedge the value of an asset (e.g., provide interest rate protection on a bond portfolio) and the company can demonstrate the derivative has sufficiently reduced the risk, then the derivative may qualify for hedge accounting. Hedge accounting allows for the value of the derivative to be accounted for in the same manner as the asset, resulting in any change in the asset to be offset by the value of the derivative (e.g., if the asset is caried at amortized value the derivative can be as well). If a derivative does not qualify for hedge accounting, mark-to-market accounting shall be used, with changes in fair value recorded as unrealized gain or loss (a direct charge to surplus in Line 24 of the Statement of Income on p. 4 of the Annual Statement). Additional details on derivatives, including those disposed of and the derivative's counterparties are shown in Schedules DB and E.

When measuring investment income for a company it is important to consider the size of the asset base, the risk in the assets held, and the effect of taxes. You cannot look at investment income dollars alone to measure returns since the assets underlying these returns will vary by company. You can look at the investment returns as a percentage of assets, but even that alone does not account for differences in risk underlying the asset portfolios (riskier profiles should earn higher expected returns but will also be more volatile). Finally, making comparisons of investment returns can be difficult due to different tax rates.

The final source of income is other income (Line 15, which is the sum of Lines 12-14). The first component of other income is the net gain or loss from agents' balances charged off (Line 12)—this is any amount written off for uncollectable agents' balances (or conversely, amounts previously written off but now recovered).

If a policyholder elects to pay their premium in installments rather than in full, the policyholder is generally charged a flat service fee intended to compensate the insurer for the additional administrative costs of processing more frequent billings. As such, there is no underwriting risk associated with this amount, so it should not be recorded as premium—it should be recorded under finance and service charges not included in premiums (Line 13).

Aggregate write-ins for miscellaneous income (Line 14) includes the following:

- Gain or loss from sale of equipment: to the extent the sale price varies from the recorded depreciated cost.
- Retroactive reinsurance: to the extent the retroactive reinsurance premium paid varies from the previously recorded value of the liabilities transferred.
- Gain or loss on foreign exchange: to the extent final settlement of payments made or received vary from the recorded amount due to changes in exchange rates.
- Corporate expenses: items not allocated to underwriting or investments, such as national advertising.
- Fines and penalties from regulators: must be included here and disclosed separately regardless of materiality.

The totals for Underwriting Income are shown in Line 8, Investment Income in Line 11, and Other Income in Line 15 of the Statement of Income. Each of these values are before any policyholder dividends and any federal or foreign income taxes (though realized capital gains are after capital gains taxes)—these items are shown on Lines 17 and 19. Dividends to policyholders (Line 17) records policyholder dividends declared, on an accrual basis, not paid basis (equal to dividends paid plus the change in accrued dividends). Federal and foreign income taxes incurred (Line 19) includes amounts incurred during the year, including amounts related to prior years, but excluding any amounts that would be deferred to later years (covered in more detail in Chapter 26).

The net income after policyholder dividends and income taxes is presented on Line 20. Following this line is the capital and surplus account section (Lines 21-39) which records changes in surplus that are not reflected in the income statement (Lines 1-20) and reconciles the beginning surplus with the ending surplus.

Current Year Surplus (Line 39) = Prior Year Surplus (Line 21)

+ Current Year Net Income (Line 22 = Line 20)

+ Additional Capital Contributions (Lines 32-33)

+ Other Changes to Surplus (Lines 23-31, 34, 36-37)[1]

+ Stockholder Dividends (Line 35)[2]

Now we will get into more detail on some of the more important adjustments included in the capital and surplus account. Each of these arise because they are items that affect surplus (either through assets or liabilities) but do not flow through the income statement. Therefore, when adding Net Income to the beginning Surplus we also need to adjust for changes in these balances to reconcile to the ending surplus. Each of these are a "change in" the balance since we are reconciling beginning and ending surplus.

[1] Various items grouped together here for simplicity of presenting a formula—all are separate line items with no such subtotal.
[2] On an accrual basis (i.e., paid plus change in accrual). Stockholder dividends are recorded as a negative value, so they are additive in this equation.

Change in unrealized capital gains (Losses) (Line 24) are changes in the fair value of assets that are recorded at fair value in the financial statements (i.e., market value, not amortized value) and are still held by the company (i.e., they are not realized gains or losses until disposed of). Realized capital gains are reflected in investment income, but unrealized capital gains are not—they are instead a direct charge to surplus here (i.e., they affect company surplus since they affect the recorded value of the company's assets on the balance sheet but are not recognized as income within the income statement). Since we are comparing the current to ending surplus, we must record the change in unrealized capital gains here, not the absolute amount. Since common stocks are recorded at their fair value and stock prices are volatile, they make up most of the unrealized capital gains for insurers. Bonds can also contribute, but only if carried at fair value (NAIC rating category 3-6 with fair value less than amortized cost). If an asset is recorded at its amortized cost, there will be no unrealized gain or loss.

Change in net unrealized foreign exchange capital gains (losses) (Line 25) are similar to unrealized capital gains but are specific to unrealized changes in asset prices due to changes in exchange rates.

Change in net deferred income tax (Line 26) affect surplus on the balance sheet through deferred tax assets (DTAs) and liabilities (DTLs) but do not affect income, therefore we must make a direct charge to surplus here for the change in the net amount of deferred tax during the year (again, change during the year since we are balancing the beginning and ending surplus).

Change in non-admitted assets (Line 27) to the extent non-admitted assets increase, surplus will decrease (since admitted assets will be lower). Since we add Lines 22-37 to get the change in policyholder surplus in Line 38, this amount is negative for an increase in non-admitted assets during the year.

Change in provision for reinsurance (Line 28) to the extent the provision for reinsurance increases, surplus will decrease. Again, since we add these direct charges to surplus to get the total change, this amount is negative for an increase during the year.

Cumulative effect of changes in accounting principles (Line 31) accounts for any changes in accounting principles used, either as the result of new guidance or internal policy. Many reasons are possible, but two examples would be a change in the decision to reflect anticipated salvage and subrogation in reserves or reflecting tabular discounts in reserves (both are optional, so the decision could change). The net effect of the change(s) on surplus would be recorded here.

Capital changes and surplus adjustments (Lines 32 and 33) records the net inflow (outflow) of capital from the new issuance of stock, or return of capital, and transfers from surplus to capital when stock dividends are issued. When new stock is issued, the portion relating to the par value is recorded as paid-in capital on Line 32.1 with the excess amount recorded as paid-in surplus on Line 33.1.

Dividends to stockholders (Line 35) represent a return on the stockholder's investment. Returning money would decrease surplus, and since we add these direct charges to surplus to get the total change, this amount is recorded as a negative value. This is recorded on an accrual (earned) basis, so the amount shown is the actual amount paid during the year plus the change in amount of dividends declared but unpaid during the year.

