

GAO

United States General Accounting Office
1100 North Capitol Street, N.W., Washington, D.C. 20548
Subcommittee on Commerce, Consumer Protection, and Competitiveness
Committee on Energy and Commerce,
House of Representatives

October 1989

INSURANCE

Profitability of the Automobile Lines of the Insurance Industry





General Government Division

B-237227

October 3, 1989

The Honorable James J. Florio
Chairman, Subcommittee on Commerce,
Consumer Protection, and Competitiveness
Committee on Energy and Commerce
House of Representatives

Dear Mr. Chairman:

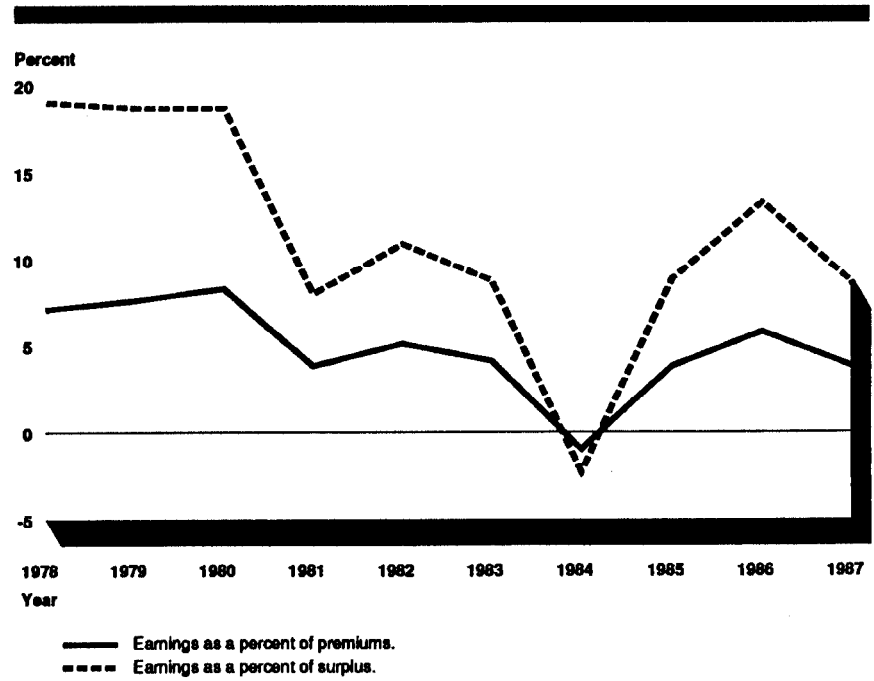
On April 7, 1989, you requested that we examine the profitability of the automobile insurance industry. This fact sheet provides a series of tables containing our estimates of the profitability of the automobile insurance lines nationwide for the 10-year period from 1978 through 1987. The fact sheet also provides tables on (1) the profitability of the overall property/casualty industry, including the automobile insurance lines, for the same 10-year period; (2) the top 20 automobile insurance companies ranked by net automobile insurance premiums written during 1987; and (3) the net premiums earned for the leading property/casualty insurance lines during 1987. Another table provides perspective on the profitability of the automobile insurance lines relative to the overall property/casualty industry and other selected industries.

Appendix I provides the various tables on the automobile insurance lines and the property/casualty insurance industry. The following are some of the highlights of the tables.

- From 1978 through 1987, the automobile insurance lines yielded an estimated after-tax profit of about \$22.6 billion despite underwriting losses of over \$30 billion. This profit reflected investment gains of about \$54 billion. (See table I.1.)
- Over the 10-year period, annual after-tax earnings as a percent of premiums averaged about 4.6 percent. Annual after-tax earnings as a percent of surplus were, on average, about 10.4 percent. (See table I.2.)

-- As a percent of premiums and surplus, the after-tax earnings of the automobile insurance lines were highest from 1978 through 1980. After-tax earnings declined substantially from 1981 through 1983 and the industry suffered losses in 1984. Automobile insurers realized a partial recovery from 1985 through 1987. (See fig. 1 and table I.2.)

Figure 1: Estimated After-Tax Earnings of the Automobile Insurance Lines as a Percent of Premiums and Surplus, 1978 through 1987



Data used in the preparation of this graph obtained from A.M Best publications.

-- From 1978 through 1987, the automobile insurance lines produced an estimated net cash flow after taxes of about \$74 billion. (See table I.5.)

-- Over the 10-year period 1978 to 1987, the property/casualty insurance industry yielded approximately \$78 billion of after-tax income. The industry experienced about \$107 billion in underwriting losses but had about \$187 billion in investment gains. These results are based on undiscounted loss reserves, which overstates the underwriting loss and understates before- and after-tax gains. (See table I.8.)

- The automobile insurance lines earned a smaller return than the total property/casualty industry. On an undiscounted basis, the after-tax earnings of the automobile insurance lines for the 10-year period were about 3.2 percent on premiums and about 9.2 percent on surplus. On the same basis, the after-tax earnings for the total property/casualty insurance industry over the same period were about 6.6 percent on premiums and approximately 12.7 percent on surplus. (See table I.9.)

- The automobile insurance lines also earned a smaller return than some other industries. In its 1988-89 Property/Casualty Fact Book, the Insurance Information Institute reported that the average rate of return on net worth for all industries was 13 percent over the period 1978 through 1987. (See table I.9.)

When comparing the rate of return on the automobile insurance lines with the rest of the property/casualty industry, we developed our comparison based on undiscounted reserves because discounted figures were not available for the entire industry. In this regard, table I.8 on the overall property/casualty industry and table I.9 on indicators of profitability over the 10-year period are developed on an undiscounted basis. However, for all other purposes, our estimates of the profitability of the automobile insurance lines (tables I.1 through I.4) are based on discounted reserves because we believe discounting is the appropriate method for valuing the reserves. If the reserves are not discounted, the claim payments that may not be made for several years are recognized as costs in the current year, thereby understating annual income.

The data used to develop the estimates in this fact sheet were obtained from publicly available information contained in the A.M. Best Company's Aggregates and Averages and Casualty Loss Reserve Development. We used A.M. Best data because Best has the only aggregated data base readily available for making such estimates. To estimate the profitability of the automobile insurance lines, we analyzed Best data on premiums, losses, and expenses. However, because Best does not provide complete data on investment returns, assets, surplus, and taxes by specific line, we had to estimate these items as they apply to the automobile insurance lines. We based our estimates on the proportion of the overall property/casualty industry's reserves

attributable to the automobile insurance lines beginning with 1977. In formulating our methodology, we consulted with industry representatives, industry consultants, a consumer advocacy group, a former state insurance commissioner, and experts specializing in insurance profitability. Appendix II discusses our objective, scope, and methodology in greater detail.

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At your request, we did not obtain written comments on this fact sheet. As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this fact sheet until 15 days from its issue date. At that time, we will send copies of the report to various Senate and House Committees, Members of Congress, and other interested parties. We will make copies available to others upon request.

Major contributors to this fact sheet are listed in appendix III. If you have any questions regarding this material, please call me on 272-7904.

Sincerely yours,



Paul L. Posner
Associate Director, Tax Policy
and Administration Issues

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FIGURE

1 Estimated After-Tax Earnings of the 2
Automobile Insurance Lines as a
Percent of Premiums and Surplus,
1978 through 1987

Table I.1:

Summary of Estimated After-Tax
Gains/Losses for the Automobile
Insurance Lines by Year for
the Period 1978-1987
(Dollars in millions)

<u>Year</u>	<u>Under- writing gains/ losses^a</u>	<u>Invest- ment gains/ losses^b</u>	<u>Pre-tax earnings</u>	<u>Federal income tax^c</u>	<u>After-tax earnings</u>
1978	\$ 643	\$ 2,511	\$ 3,155	\$ 825	\$ 2,330
1979	(147)	3,593	3,446	731	2,715
1980	(363)	4,649	4,286	1,094	3,192
1981	(2,231)	3,090	859	(659)	1,518
1982	(3,516)	5,317	1,801	(418)	2,219
1983	(4,027)	5,568	1,540	(387)	1,927
1984	(5,666)	5,147	(519)	0	(519)
1985	(6,585)	8,794	2,209	0	2,209
1986	(4,733)	8,727	3,994	0	3,994
1987	(3,608)	6,653	3,045	42	3,002
Totals	<u>\$(30,233)</u>	<u>\$54,049</u>	<u>\$23,816</u>	<u>\$1,228</u>	<u>\$22,588^d</u>

^aNet premiums earned, less losses, expenses, and dividends declared to policyholders. These results are based on discounted reserves. See table I.3 for a detailed breakdown of the components of underwriting gains and losses.

^bNet investment income plus realized and unrealized capital gains and losses. See table I.3 for a detailed breakdown of the components of investment gains and losses.

^cBecause our calculation of investment gains and losses includes unrealized capital gains, our calculation of federal income tax includes a provision for future taxes when the unrealized gains become realized.

^dOur total earnings for the 10-year period do not include the effect of unused net operating losses beyond 1987. Based on our analysis, we calculated that about \$3.3 billion in unused net operating losses could be carried forward to offset taxes in future years. Assuming that the current tax situation remains unchanged, these net operating losses represent additional economic value of approximately \$1 billion.

Note: Totals may not add due to rounding.

Source: Data used in the preparation of this table obtained from A.M. Best Company publications.

Table I.2:

Estimated After-Tax Earnings Attributable to
the Automobile Insurance Lines as a
Percent of Premiums and Surplus by Year
for the Period 1978-1987
(Dollars in millions)

<u>Year</u>	<u>Premiums</u> <u>earned</u>	<u>Average</u> <u>surplus</u> <u>for year^a</u>	<u>After-</u> <u>tax</u> <u>earnings</u>	<u>Earnings as a</u> <u>percent of :</u>	
				<u>Premiums</u> <u>earned</u>	<u>Surplus</u>
1978	\$32,557	\$12,246	\$2,330	7.2%	19.0%
1979	35,652	14,490	2,715	7.6	18.7
1980	38,399	17,035	3,192	8.3	18.7
1981	40,480	18,884	1,518	3.8	8.0
1982	43,189	20,308	2,219	5.1	10.9
1983	46,706	21,908	1,927	4.1	8.8
1984	50,776	22,490	(519)	(1.0)	(2.3)
1985	57,734	24,735	2,209	3.8	8.9
1986	69,468	29,952	3,994	5.8	13.3
1987	78,648	34,431	3,002	3.8	8.7
Totals	<u>\$493,608</u>	<u>\$216,479</u>	<u>\$22,588</u>	<u>4.6%</u>	<u>10.4%</u>

^aAverage surplus for year is the mean of the beginning-of-year surplus and end-of-year surplus.

Note: Totals may not add due to rounding.

Source: Data used in the preparation of this table obtained from A.M. Best publications.

Table I.3:

Estimated Profitability of the
Automobile Insurance Lines--
Detailed Breakdown by Year
for the Period 1978-1987
(Dollars in millions)

Year	(1) Premiums earned	(2) Invest- ment income earned	(3) Total capital gains	(4) Losses and loss expenses paid	(5) Annual reserve increase (discounted)	(6) Under- writing expenses incurred	(7) Dividends declared to policy- holders	(8) Federal income taxes ^a	(9) Annual earnings after taxes ^b
1978	\$ 32,557	\$ 2,360	\$ 152	\$ 21,344	\$2,053	\$ 8,097	\$ 419	\$ 825	\$2,330
1979	35,652	2,872	721	24,804	1,769	8,972	255	731	2,715
1980	38,399	3,241	1,408	26,887	1,954	9,646	274	1,094	3,192
1981	40,480	3,771	(680)	29,492	2,518	10,390	311	(659)	1,518
1982	43,189	4,311	1,006	32,814	2,187	11,367	337	(418)	2,219
1983	46,706	4,575	993	35,129	2,874	12,238	493	(387)	1,927
1984	50,776	5,085	62	39,814	3,066	13,182	380	0	(519)
1985	57,734	5,677	3,117	44,180	4,841	14,887	410	0	2,209
1986	69,468	6,207	2,520	49,530	6,873	17,356	442	0	3,994
1987	78,648	6,568	85	54,198	8,111	19,212	736	42	3,002
Totals	<u>\$493,608</u>	<u>\$44,665</u>	<u>\$9,384</u>	<u>\$358,192</u>	<u>\$36,244</u>	<u>\$125,348</u>	<u>\$4,057</u>	<u>\$1,228</u>	<u>\$22,588^c</u>

^aTo calculate federal income tax from 1978 through 1986, we used undiscounted reserves as required by law. For 1987, we used discounted reserves as required by the Tax Reform Act of 1986.

^bCols. (1+2+3) - (4+5+6+7+8) = col. 9.

^cOur total earnings for the 10-year period do not include the effect of unused net operating losses beyond 1987. Based on our analysis, we calculated that about \$3.3 billion in unused net operating losses could be carried forward to offset taxes in future years. Assuming that the current tax situation remains unchanged, these net operating losses represent additional economic value of approximately \$1 billion.

Note: Totals may not add due to rounding.

Source: Data used in the preparation of this table obtained from A.M. Best Company publications.

Table I.4:

Estimated Surplus for the
Automobile Insurance Lines
by Year for the Period 1978-1987
(Dollars in millions)

<u>Year</u>	<u>Dividends declared to stockholders</u>	<u>Capital and surplus contributions</u>	<u>After-tax earnings</u>	<u>Year-end surplus</u>	<u>Average surplus for year^a</u>
1977	--	--	--	\$11,178	--
1978	\$ 455	\$ 262	\$ 2,330	13,315	\$ 12,246
1979	588	225	2,715	15,665	14,490
1980	751	299	3,192	18,406	17,035
1981	816	254	1,518	19,362	18,884
1982	961	632	2,219	21,253	20,308
1983	1,080	463	1,927	22,563	21,908
1984	854	1,228	(519)	22,417	22,490
1985	870	3,296	2,209	27,052	24,735
1986	1,023	2,829	3,994	32,852	29,952
1987	1,510	1,665	3,002	36,009	34,431
Totals	<u>\$8,909</u>	<u>\$11,152</u>	<u>\$22,588^b</u>	--	<u>\$216,479</u>

^aAverage surplus for year is the mean of the beginning-of-year surplus and end-of-year surplus.

Note: Totals may not add due to rounding.

Source: Data used in the preparation of this table obtained from A.M. Best Company publications.

Table 1.5:
Estimated Net Cash Flow for the
Automobile Insurance Lines by Year
for the Period 1978-1987
(Dollars in millions)

Year	(1) Premiums collected	(2) Investment Income collected	(3) Realized capital gains	(4) Losses and loss adjustment expenses paid	(5) Underwriting expenses paid	(6) Dividends paid to policyholders	(7) Dividends paid to stockholders	(8) Capital and surplus contributions	(9) Federal Income tax paid	(10) Net cash flow after tax ^a
1978	\$ 33,633	\$ 2,300	\$ 18	\$ 21,344	\$ 8,097	\$ 399	\$ 455	\$ 262	\$ 763	\$ 5,154
1979	36,829	2,799	93	24,804	8,972	242	588	225	442	4,898
1980	39,667	3,159	156	26,887	9,646	261	751	299	518	5,218
1981	41,817	3,675	79	29,492	10,390	296	816	254	(310)	5,141
1982	44,615	4,202	165	32,814	11,367	321	961	632	(805)	4,958
1983	48,249	4,459	604	35,129	12,238	469	1,080	463	(518)	5,377
1984	52,454	4,956	882	39,814	13,182	362	854	1,228	0	5,308
1985	61,041	5,518	1,596	44,180	14,887	405	870	3,296	0	11,108
1986	71,939	6,011	1,946	49,530	17,356	411	1,023	2,829	0	14,406
1987	79,138	6,460	914	54,198	19,212	687	1,510	1,665	54	12,517
Totals	<u>\$509,384</u>	<u>\$43,538</u>	<u>\$6,454</u>	<u>\$358,192</u>	<u>\$125,348</u>	<u>\$3,852</u>	<u>\$8,909</u>	<u>\$11,152</u>	<u>\$144</u>	<u>\$74,083</u>

^aCols. (1+2+3+8) - (4+5+6+7+9) = col. 10.

Note: Totals may not add due to rounding.

Source: Data used in the preparation of this table obtained from A.M. Best Company publications.

Table I.6:

Automobile Insurance Net Premiums Written by the Top 20
Automobile Insurance Company Groups in 1987 as Compared
With Group and Industry Product Line Totals
(Dollars in millions)

Rank ^a	Company group ^b	Automobile insurance net premiums written	Net premiums written as a percent of company group's total insurance lines	Net automobile insurance premiums writ- ten as a per- cent of total industry net automobile insurance premiums
1	State Farm	\$12,955	70.3%	16.0%
2	Allstate	7,530	70.1	9.3
3	Farmers	3,544	68.2	4.4
4	Nationwide	3,089	53.4	3.8
5	Aetna	2,329	30.8	2.9
6	Liberty Mutual	2,115	33.1	2.6
7	Travelers	1,836	36.3	2.3
8	Hartford	1,802	33.3	2.2
9	USAA	1,754	76.7	2.2
10	USF&G	1,332	36.6	1.6
11	GEICO	1,288	90.5	1.6
12	American International	1,283	18.5	1.6
13	CIGNA	1,184	24.7	1.5
14	Progressive	1,074	96.3	1.3
15	American Family	952	67.8	1.2
16	Continental	950	22.7	1.2
17	Kemper	916	32.7	1.1
18	CNA	882	19.9	1.1
19	Crum & Forster	794	23.2	1.0
20	Lincoln National	751	35.3	.9
Total top - 20		<u>\$48,359</u>	-	<u>59.6%</u>
Total industry		\$81,200	-	100.0%

^aRanked by net premiums written for all automobile insurance lines combined. Ranking does not include unincorporated associations organized to write insurance for their members.

^bA company group is comprised of a number of subsidiary companies under one umbrella company.

Note: Totals may not add due to rounding.

Source: Data used in the preparation of this table obtained from A.M. Best Company publications.

Table I.7:
Net Premiums Earned for
Selected Insurance Lines for 1987
(Dollars in millions)

<u>Insurance Line</u>	<u>Net premiums earned</u>	<u>Net premiums earned as a percent of net premiums earned for all lines</u>
Auto liability (Private passenger)	\$36,165	19.18%
Auto physical damage (Private passenger)	25,999	13.79
Auto liability (Commercial)	11,486	6.09
Auto physical damage (Commercial)	4,997	2.65
Total automobile insurance	78,647	41.71
Worker's compensation	23,105	12.26
Other liability	20,076	10.65
Commercial multiple peril	16,815	8.92
Homeowners multiple peril	16,053	8.52
Reinsurance	6,952	3.69
Fire	5,328	2.83
Inland marine	4,109	2.18
Medical malpractice	3,868	2.05
Group accident and health	2,585	1.37
All other lines ^a	10,987	5.83
Total--all lines	<u>\$188,525</u>	<u>100.00%</u>

^aAll other lines includes allied lines, surety, other accident and health, ocean marine, fidelity, farmowners multiple peril, aircraft, boiler and machinery, and burglary and theft.

Note: Totals may not add due to rounding.

Source: Data used in the preparation of this table obtained from A.M. Best Company publications.

Table I.8:

Combined After-Tax Gains/Losses for the
Property/Casualty Insurance Industry
by Year for the Period 1978-1987^a
(Dollars in millions)

<u>Year</u>	<u>Under- writing gains/ losses^b</u>	<u>Invest- ment gains/ losses^c</u>	<u>Pre-tax earnings</u>	<u>Federal income tax^d</u>	<u>After- tax earnings</u>
1978	\$ 1,297	\$ 7,758	\$ 9,055	\$ 1,504	\$ 7,551
1979	(1,300)	11,610	10,310	1,464	8,846
1980	(3,334)	15,870	12,536	1,790	10,746
1981	(6,288)	10,858	4,570	(691)	5,261
1982	(10,290)	18,387	8,097	98	7,999
1983	(13,322)	19,441	6,119	(838)	6,957
1984	(21,268)	17,875	(3,393)	(2,520)	(873)
1985	(25,288)	30,219	4,931	(566)	5,497
1986	(16,613)	30,825	14,213	(11)	14,223
1987	(10,620)	24,269	13,649	2,316	11,333
1978-1987	<u>\$(107,026)</u>	<u>\$187,116</u>	<u>\$80,086</u>	<u>\$2,546</u>	<u>\$77,540</u>

^aComputed on a consolidated basis. Consolidated totals eliminate "double counting" by excluding intercompany transactions between parent and subsidiary companies.

^bNet premiums earned, less losses, expenses, and dividends paid to policyholders. These results are based on undiscounted reserves.

^cNet investment income plus realized and unrealized capital gains.

^dBecause our calculation of investment gains and losses includes unrealized capital gains, our calculation of federal income tax includes a provision for future taxes when the unrealized gains become realized.

Note: Totals may not add due to rounding.

Source: Data used in the preparation of this table obtained from A.M. Best Company publications.

Table I.9:

Indicators of Profitability
Based on After-Tax Income:
Averages for the Period 1978-1987

<u>GAO Estimates of Earnings^a</u>	<u>Average rates of return</u>
As a percent of premiums	
Automobile insurance lines	3.2%
Property/casualty insurance industry	6.6
As a percent of surplus	
Automobile insurance lines	9.2
Property/casualty insurance industry	12.7
<u>Insurance Information Institute^b</u>	
Selected industries as a percent of net worth	
Banks	12.7
Utilities	12.6
Transportation	11.3
All industries as a percent of net worth	13.0

^aThese figures are based on undiscounted reserves because total industry figures are not available on a discounted basis. See table I.2 for our estimate of the rate of return on premiums and surplus for the automobile insurance lines based on discounted reserves.

^bAccording to the Insurance Information Institute, the rates of return for the industries listed are industry averages obtained from Fortune magazine.

Source: Data used in the preparation of this table obtained from A.M. Best publications and the Insurance Information Institute.

OBJECTIVE, SCOPE, AND METHODOLOGY

The objective of our work was to examine the profitability of the automobile insurance industry over the 10-year period from 1978 through 1987. The data used to develop the estimates and tables in this fact sheet were obtained entirely from publicly available information contained in the A.M. Best Company's Aggregates and Averages and Casualty Loss Reserve Development. We used Best Company data because Best has the only aggregated data base readily available for making such estimates. A.M. Best gathers its data from the annual financial statements that insurance companies file with state regulators. For rates of return on selected industries, we used data published by the Insurance Information Institute in its 1988-89 Property/Casualty Fact Book. The Institute is an educational, fact-finding, and communications organization for the property/casualty insurance business. We did not test the accuracy or adequacy of the data reported by the companies, A.M. Best or the Insurance Information Institute.

To develop our estimates of the profitability of the automobile insurance industry, we analyzed A.M. Best data on premiums, losses, and expenses. We combined the data on the private passenger and commercial segments of the auto physical damage and the auto liability insurance lines because the data presented by Best are not always segregated by individual automobile insurance line or the segments of each line. Our analysis of the automobile insurance business is done on a "stand alone" basis which assumes that no other property/casualty insurance lines are influenced by the performance of the automobile insurance lines. Because our analyses are based on aggregated industry data, the operational and investment experience of individual companies could well vary from the overall situation presented.

A.M. Best does not provide complete data on investment returns, assets, surplus, and taxes by specific line. Therefore, we had to estimate these items as they apply to the automobile insurance lines. We based our estimates on the proportion of the overall property/casualty industry's reserves attributable to the automobile insurance lines beginning with 1977. We also discounted the loss reserves attributable to the automobile insurance lines, included realized and unrealized capital gains in income, and deducted policyholder dividends from income. In formulating our methodology, we considered the views of industry

representatives, industry consultants, a consumer advocacy group, a former state insurance commissioner, and experts specializing in insurance profitability. We did our review from May 1989 through September 1989 and in accordance with generally accepted government auditing standards.

The following sections discuss our methodology in greater detail.

Investment income and capital gains

Because data are not directly available on the investment experience associated with each insurance line, we imputed the amount of aggregate investment income attributable to the automobile insurance lines. We imputed this income by estimating the automobile insurance lines' assets. We then estimated the investment income these assets earned. We first estimated the assets attributable to the automobile insurance lines for the end of 1977. This estimate was based on the ratio of loss reserves and unearned premium reserves for automobile insurance relative to loss reserves and unearned premium reserves for the total property/casualty industry. To obtain estimated assets for each of the succeeding years, we calculated the automobile insurance industry's net cash flow and added it to the previous year's assets.

To determine investment income on each year's estimated assets for the automobile insurance lines, we applied an interest rate based on the entire property/casualty industry. We calculated this rate by dividing the property/casualty industry's net investment income by the industry's assets at the beginning of each year.

In allocating capital gains to the automobile insurance lines, we assumed that the automobile insurance lines' share of the property/casualty industry's capital gains was proportional to their share of the industry's total assets.

Discounted reserves

Under insurance industry accounting standards and as required by state regulators, reserves are generally booked as expenses at the full value of expected future loss payouts despite the fact that only the present value of the reserve invested at interest need be set aside to meet expected future claims settlements. For example, if a claim

will cost \$100 in 10 years, should a \$100 reserve be immediately established for that claim or should a reserve of a lesser amount--a discounted amount--be established that, when invested over a 10-year period, will yield \$100?

Our estimates of the profitability of the automobile insurance lines are based on discounted reserves because we believe discounting is the appropriate method for valuing the reserves. If the reserves are not discounted, the claim payments that may not be made for several years are recognized as costs in the current year, thereby understating annual income.

In doing our analysis, we developed discount rates for the automobile insurance physical damage and liability lines based on the experience of the entire property/casualty industry. We calculated these discount rates by dividing the total net investment income of the property/casualty insurance industry by the total invested assets of the industry.

To calculate discounted reserves, we also had to develop claim payment patterns based on the "tail," or the period over which payments on insurance claims are made. This tail can vary from insurance line to insurance line and can be as long as 10 or more years for such lines as medical malpractice insurance. For the automobile liability insurance line, the majority of the payments are made in the first 5 years. For the automobile physical damage line, the tail is not longer than 2 years and the bulk of the claims are paid in the first year.

To analyze discounted reserves for the automobile liability insurance line, we used data in A.M. Best's Casualty Loss Reserve Development for each of the 10 years. For the automobile physical damage line, we developed payment patterns on the basis of industry information for the period 1984 through 1987 as reported by Best's Aggregates and Averages for those years. We applied these payment patterns to the earlier years of our study because Best did not report the information needed for those years.

Taxes

To calculate the tax liability attributable to the automobile insurance lines from 1978 through 1986, we applied the corporate tax rate in effect for the period. We obtained the

net taxable income for each year by deducting from net income (1) the portion of income attributable to tax-exempt investments and (2) the portion of income eligible for the dividend received deduction. We assumed that capital gains would be taxed at the rate applicable to ordinary income. For 1987, we applied the new corporate tax rate and estimated the effect of the new provisions affecting all property/casualty insurers under the Tax Reform Act of 1986. We also considered the effect of the alternative minimum tax as it applies to 1987 income.

In computing taxes on a year-to-year basis, we took into consideration tax refunds that appear as negatives in our presentation of federal income taxes. Negative federal income tax occurs because companies report losses for tax purposes and consequently generate negative income taxes. Negative income taxes can be applied to past taxes paid, and they generate refunds or are carried forward to apply against future tax liabilities. Since our analysis treats the automobile insurance lines as if there were no other insurance line in the property/casualty industry, our calculation of aggregate taxes and the use of net operating loss carryforwards and carrybacks only apply to taxes on the automobile insurance lines. Under normal practices, loss carryforwards and carrybacks could be applied to other insurance lines or the operations of non-insurance parents. Our analysis did not take into account any loss carryforwards that may have been available from the years before 1978.

Return on surplus

In order to calculate a rate of return on surplus for the automobile insurance lines, we had to estimate the amount of surplus applicable to the automobile insurance lines. We developed this estimate because A.M. Best does not report information on surplus by line of insurance. Our initial estimate of surplus at the end of 1977 was calculated as a percent of total industry surplus based on the ratio of loss reserves and unearned premium reserves for automobile insurance relative to loss reserves and unearned premium reserves for the entire property/casualty industry. Once we developed our initial estimate, we obtained the surplus for each succeeding year by (1) adding the net income for each year to the previous year's surplus, (2) subtracting our estimate of dividends declared to stockholders on the automobile insurance lines, and (3) adding our estimate of

the portion of new capital and surplus attributable to the automobile insurance lines.

We developed our estimate of dividends declared to stockholders based on the ratio of net automobile insurance premiums written by the stock segment of the property/casualty insurance industry to total net premiums written by stock companies. To estimate the portion of new capital and surplus attributable to automobile insurance, we used the ratio of net automobile insurance premiums written by all property/casualty insurers to the total net premiums written by these companies.

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GLOSSARY

Annual Reserve Increase

The change in the amount of the reserve from the beginning to the end of one year.

Discounting

The process of determining the present value of future amounts.

Loss Adjustment Expenses

The costs attributable to claim and case settlement, such as attorneys' and adjustors' fees.

Loss Payments

The amount paid out to policyholders in claims.

Net Investment Income

The amount of investment income remaining after costs associated with the generation of that income are deducted. Brokerage fees are an example of such costs.

Net Premiums Written

Premium income received by insurance companies less payments for business reinsured. Premium income is obtained from policyholders and from reinsuring other insurance companies' policies.

Net Worth

The value of all assets, including cash, less total liabilities.

Premium

The sum paid by the policyholder for an insurance policy.

Premiums Earned

That portion of an insurance premium that can be considered the property of an insurance company based on the expired portion of the policy period. For example, a 12-month premium written on July 1 will be considered 50-percent earned on December 31. Net premiums earned are the total

premiums earned less the portion of premiums earned ceded to other insurance companies or reinsured.

Reserves

Amounts set aside to pay (1) reported claims, (2) future claims (unreported), and (3) costs associated with such claims.

Surplus

The excess of assets over liabilities held as a safety margin for policyholders.

Underwriting Expenses

Costs arising from an insurance company's underwriting operation. This includes such items as brokers' commissions, advertising expenses, travel costs, rent, other overhead costs, and equipment costs.

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