From John Burton's Workers' Compensation Resources

WORKERS' COMPENSATION RESOURCES RESEARCH REPORT

Issue 1 **September 2010**

In This Issue:

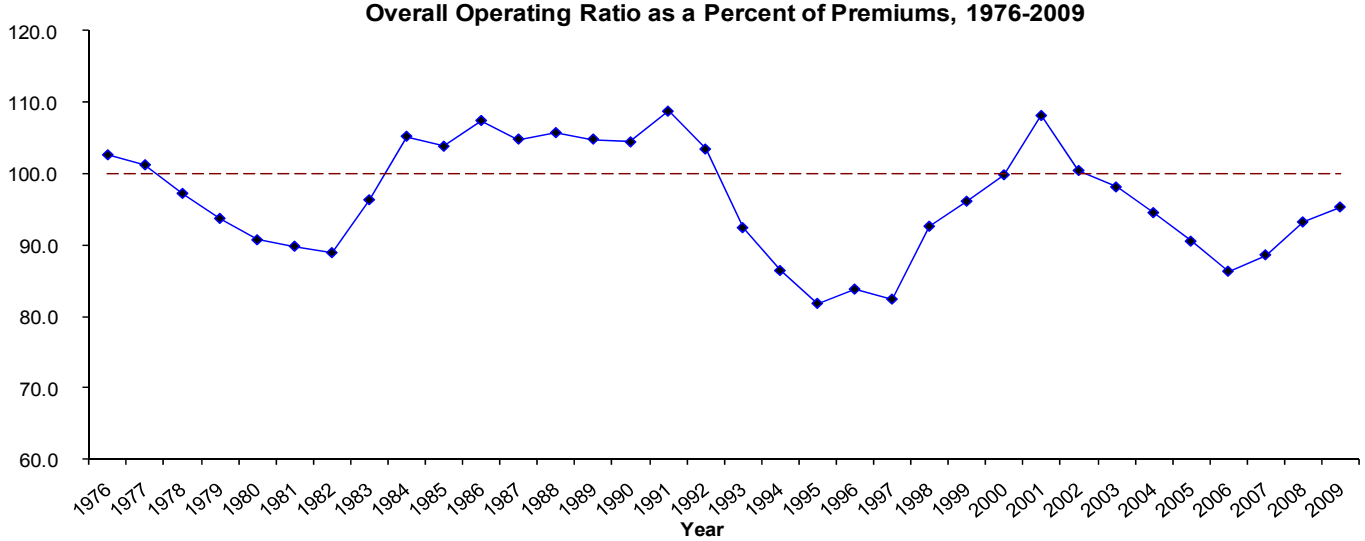
FEATURED TOPICS

Summary of the Contents

This initial issue of the *Workers' Compensation Resources Research Report* features an article examining the profitability of the workers' compensation insurance industry. The data on underwriting results for 2009 were released by A.M. Best in August 2010. The overall operating ratio, which is the most comprehensive measure of underwriting results because it considers investment income, increased from 93.2 in 2008 to 95.3 in 2009, as shown in Figure A. An overall operating ratio of less than 100 indicates that the industry is profitable. The increase in the overall operating ratio indicates that the profitability of the workers' compensation insurance industry declined in 2009 compared to the previous year. Nonetheless, the workers' compensation insurance industry was profitable for the seventh year in a row.

This issue of the *Workers' Compensation Resources Research Report* contains a letter from the *WCRRR* Editor to persons interested in workers' compensation research. In addition, this issue provides an abstract of a recent article by Xuguang (Steve) Guo and John Burton exploring recent developments in moral hazard and benefits payments in workers' compensation.

Figure A
Overall Operating Ratio as a Percent of Premiums, 1976-2009



Note: The Overall Operating Ratio is the total of all underwriting expenses and income from investments as a percentage of premiums.

Letter from the Editor

Dear Workers' Compensation Aficionado:

This is the first issue of the *Workers' Compensation Resources Research Report (*WCRRR*)*. I was the Editor of 48 issues of the *Workers' Compensation Policy Review (*WCPR*)*, which ceased publication with the November/ December 2008 issue. I decided to terminate the *WCPR* because it was taking too much time and effort to produce, especially on a bi-monthly basis, and because the costs of preparing, printing, and distributing the publication by mail substantially exceeded the subscription income.

I decided to initiate the *WCRRR* because I believe there are several topics in workers' compensation that deserve attention but that are not adequately covered elsewhere. One such topic – the profitability of the workers' compensation insurance industry – is examined in this issue of the *WCRRR*. Other general topics include the frequency and amounts of workers' compensation benefits in the various states and the employers' costs of workers' compensation. I anticipate that issues of the *WCRRR* will be published about four times a year. I plan to distribute the issues electronically rather than by mail.

But the publication of additional issues of the *WCRRR* depends on the development of a viable financial model. The inaugural issue can be downloaded without charge from *www.workerscompresources.com*. But continuation of this grand venture depends on developing a source of income. I would appreciate suggestions from any reader about how the *WCRRR* can become self-sustaining.

Thanks for your advice, and best wishes.

John F. Burton, Jr.
Editor

Workers' Compensation: Recent Developments in Moral Hazard and Benefit Payments

Xuguang (Steve) Guo and John F. Burton Jr.

Industrial and Labor Relations Review
Vol. 63 no. 2 (January 2010) pp. 340-55

Abstract:

Studies using pre-1990 data generally found benefit and frequency elasticities for workers' compensation cash benefits that exceeded, respectively, 1.0 and 0: an increase in expected benefits apparently induced (a) an even greater increase in actual benefit payments and (b) an increase in claim frequency. Researchers previously hypothesized that incentive effects for workers dominated those for employers. The authors of this study reevaluate benefit and frequency elasticities for 1975-89, using data with some advantages over those used by previous studies, and also investigate whether the elasticities changed during the years 1990-1999, when insurance policies with large deductibles increased employers' incentives to limit benefits and many states restricted benefit eligibility. For both periods, they find benefit elasticities significantly under 1.0 and frequency elasticities of about 0. They also find that much of the substantial decline in actual benefits in the 1990s was due to changes in state compensability rules and administrative stringency.

A further explanation of the Article can be found at:
www.workerscompresources.com follow the link entitled *Recent Publications*

Workers' Compensation Insurance Industry Remains Profitable in 2009

by John F. Burton, Jr.

The underwriting results for the workers' compensation insurance industry declined in 2009 but remained profitable for the seventh year is a row according to results from A.M. Best. The overall operating ratio, which is the most comprehensive measure of underwriting experience for insurance carriers, increased from 93.2 in 2008 to 95.3 in 2009, as shown in Figure A and Table 1 (column (8)).

The overall operating ratio is calculated as (1) the total of all carrier expenditures (2) minus investment income (3) as a percentage of premiums.[1] When the overall operating ratio is greater than 100, carriers lose money even when investment income is considered. (For example, if the overall operating ratio is 103.5, workers' compensation carriers are losing $3.50 for every $100 of premiums). Conversely, an operating ratio of less than 100 indicates that the industry is profitable when investment income is included. (For example, if the overall operating ratio is 92.4, workers' compensation carriers are making profits of $7.60 per $100 of premiums.)

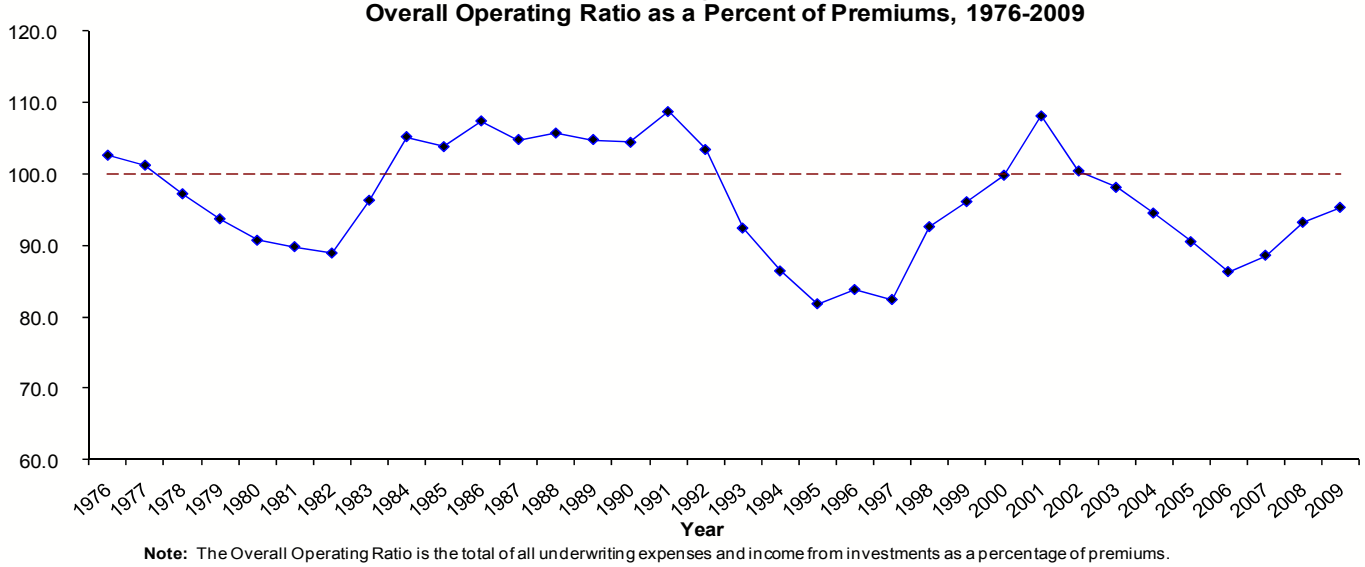
Underwriting Results Vary Over Time

The overall operating ratio for the workers' compensation industry for 1976 to 2009 is shown in Figure A and Column (8) of Table 1, and the cyclical nature of profitability in the industry is evident. Two years of losses in 1976-1977 were followed by six years of profits through 1983. For example, the operating ratio was below 90 in 1981 and 1982, indicating that carriers had profits that exceeded $10 for every $100 of premiums in those years.

The workers' compensation insurance industry was then unprofitable in every year from 1984 to 1992. During this nine-year stretch of unfavorable results, carriers' losses ranged from $3.40 to $8.70 for every $100 of workers' compensation premiums. One result of this unfavorable experience is that the workers' compensation industry took the lead in "reform" efforts that reduced benefits and tightened eligibility standards in many states.[2] Also, because insurance regulators refused to allow insurance rates to increase as rapidly as losses in many jurisdictions, which resulted in underwriting losses in these states, workers' compensation carriers pursued and achieved deregulation of the workers' compensation insurance markets in most states.[3]

The results of deregulation and the various other reforms of workers' compensation in the early to mid-1990s are evident in the underwriting results for 1993 to 2000, when the overall operating ratio was less than

Figure A
Overall Operating Ratio as a Percent of Premiums, 1976-2009



Note: The Overall Operating Ratio is the total of all underwriting expenses and income from investments as a percentage of premiums.

Table 1
Workers' Compensation Insurance Underwriting Experience, 1973-2009

Year	Losses Incurred* (1)	Loss Adjustment Expenses* (2)	Losses and Adjustment Expenses Incurred* (3)	Underwriting Expenses Incurred** (4)	Dividends to Policyholders* (5)	Combined Ratio After Dividends (6)	Net Inv. Gain/Loss and Other Income* (7)	Overall Operating Ratio (8)
1973	68.5	8.5	77.0	19.8				
1974	71.6	8.7	80.3	19.6				
1975	74.0	8.2	82.2	18.9	6.3	107.4		
1976	78.2	8.4	86.6	17.6	5.4	109.6	6.9	102.6
1977	78.0	8.9	86.9	16.7	5.1	108.6	7.4	101.2
1978	74.4	8.7	83.0	16.4	5.6	105.0	7.8	97.2
1979	70.4	9.2	79.6	16.8	6.5	103.0	9.2	93.7
1980	67.6	8.4	76.1	17.4	8.0	101.4	10.8	90.7
1981	66.1	9.0	75.1	19.0	8.7	102.8	13.0	89.8
1982	64.3	9.1	73.4	20.6	9.9	103.9	15.0	88.9
1983	70.6	9.2	79.9	22.0	10.6	112.5	16.2	96.3
1984	81.0	9.8	90.8	21.2	9.9	121.9	16.7	105.2
1985	81.0	9.5	90.5	19.0	9.3	118.8	15.0	103.8
1986	85.4	10.2	95.5	18.0	7.6	121.1	13.7	107.4
1987	82.2	10.9	93.1	18.0	6.4	117.6	12.8	104.8
1988	83.4	10.8	94.2	17.8	6.4	118.4	12.7	105.7
1989	83.3	11.4	94.7	17.4	6.1	118.2	13.4	104.8
1990	83.8	10.7	94.6	17.6	5.1	117.4	13.0	104.4
1991	87.8	11.5	99.3	18.5	4.9	122.6	14.0	108.7
1992	83.9	13.2	97.1	19.8	4.6	121.5	18.1	103.4
1993	71.6	12.4	84.0	20.4	4.7	109.1	16.7	92.4
1994	60.5	13.1	73.6	21.0	7.0	101.6	15.1	86.4
1995	57.0	12.8	69.8	22.7	6.9	99.5	17.7	81.8
1996	57.5	14.5	72.1	24.9	5.4	102.4	18.6	83.8
1997	58.6	14.4	73.0	25.3	6.5	104.8	22.4	82.4
1998	62.0	16.2	78.2	26.3	6.6	111.2	18.6	92.6
1999	68.0	16.2	84.2	27.5	6.7	118.5	22.4	96.1
2000	73.5	16.0	89.5	25.8	5.4	120.7	20.9	99.8
2001	78.9	13.6	92.4	25.0	3.5	120.9	12.8	108.1
2002	74.6	12.9	87.5	22.3	2.8	112.6	12.2	100.4
2003	72.2	14.0	86.2	20.7	1.6	108.6	10.5	98.1
2004	69.7	13.4	83.1	20.8	1.3	105.1	10.6	94.5
2005	66.1	14.1	80.2	20.8	1.7	102.7	12.2	90.5
2006	60.6	13.6	74.2	22.2	2.0	98.5	12.2	86.3
2007	61.9	14.9	76.8	23.9	2.8	103.6	14.8	88.6
2008	62.0	15.1	77.1	24.5	2.8	104.4	11.2	93.2
2009	68.5	16.3	84.8	24.0	1.7	110.5	15.1	95.3

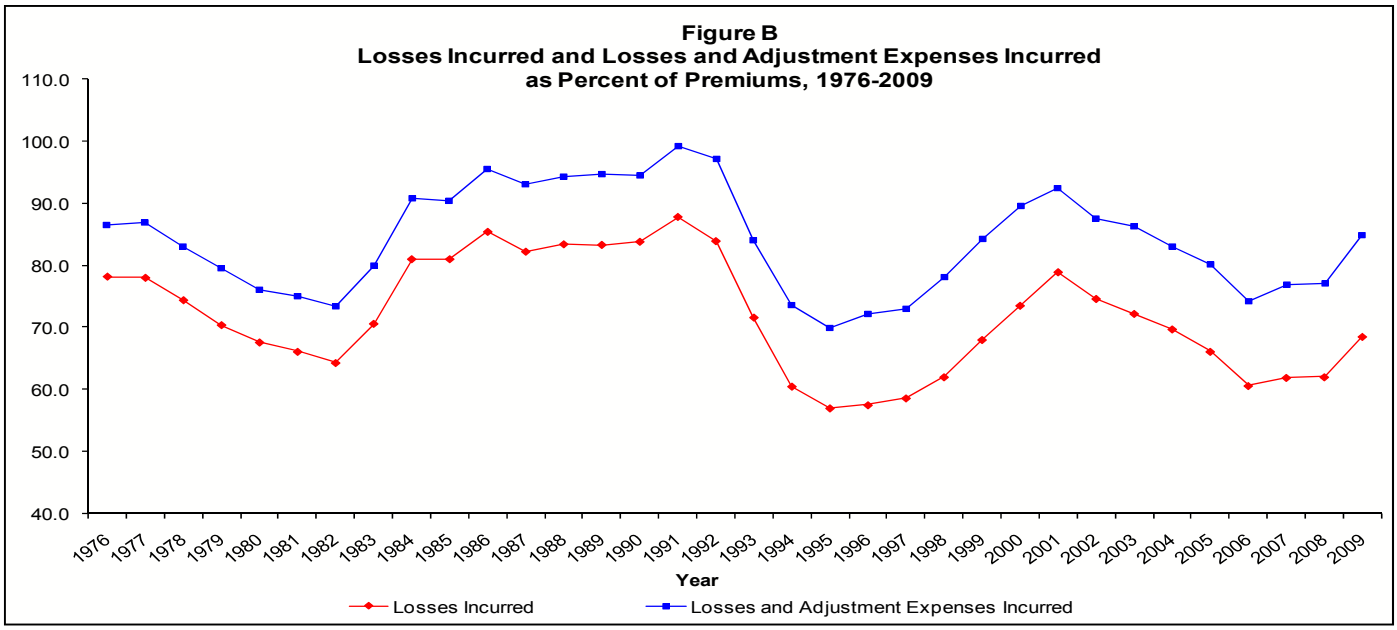
Source:

Best's Aggregate & Averages Property/Casualty, 2010 and prior Editions, © A.M. Best Company - used with permission. Data for years 2000 - 2009 updated to reflect values from 2010 Edition.

Notes:

Losses Incurred (also termed the pure loss ratio) (1) plus Loss Adjustment Expenses (2) equals Losses and Adjustment Expenses Incurred (3). Losses and Adjustment Expenses Incurred (3) plus Total Underwriting Expenses Incurred (4) plus Dividends to Policy Holders (5) equals Combined Ratio after Dividends (6). Combined Ratio after Dividends (6) minus Net Investment Gain/Loss and Other Income (7) equals Overall Operating Ratio (8). As of 1992, the methodology for allocating investment income changed slightly; as a result, 1992-2001 numbers in the last two columns are not directly comparable to those for earlier years.

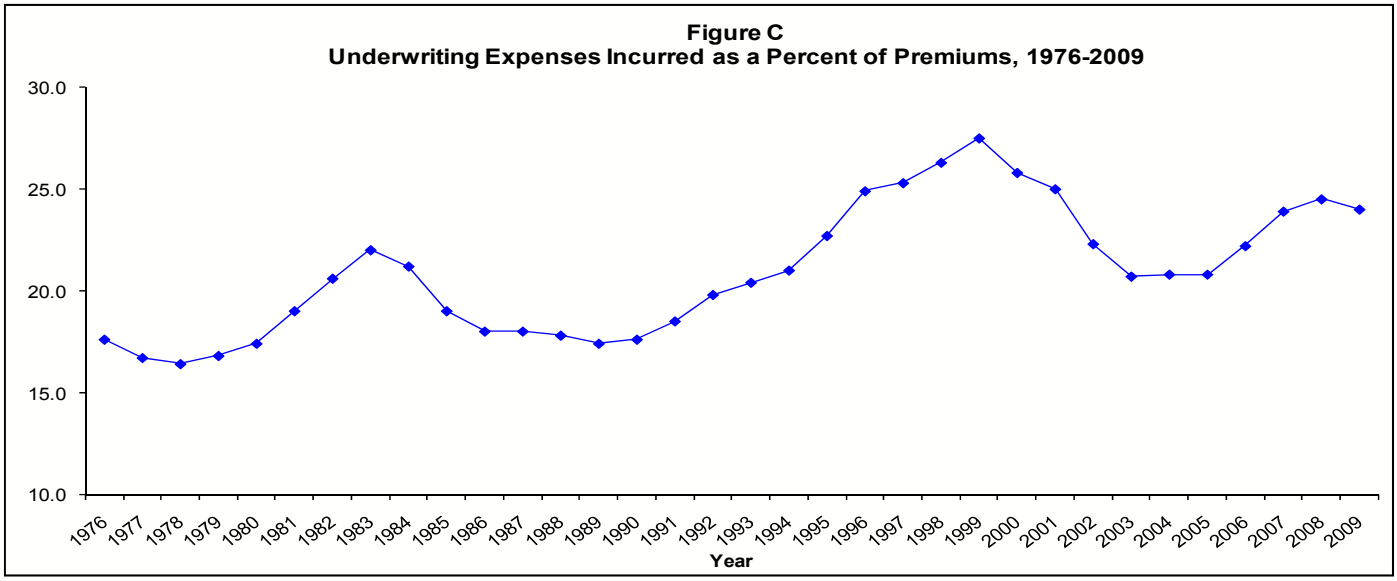
* Percentage of net premiums earned ** Percentage of net premiums written

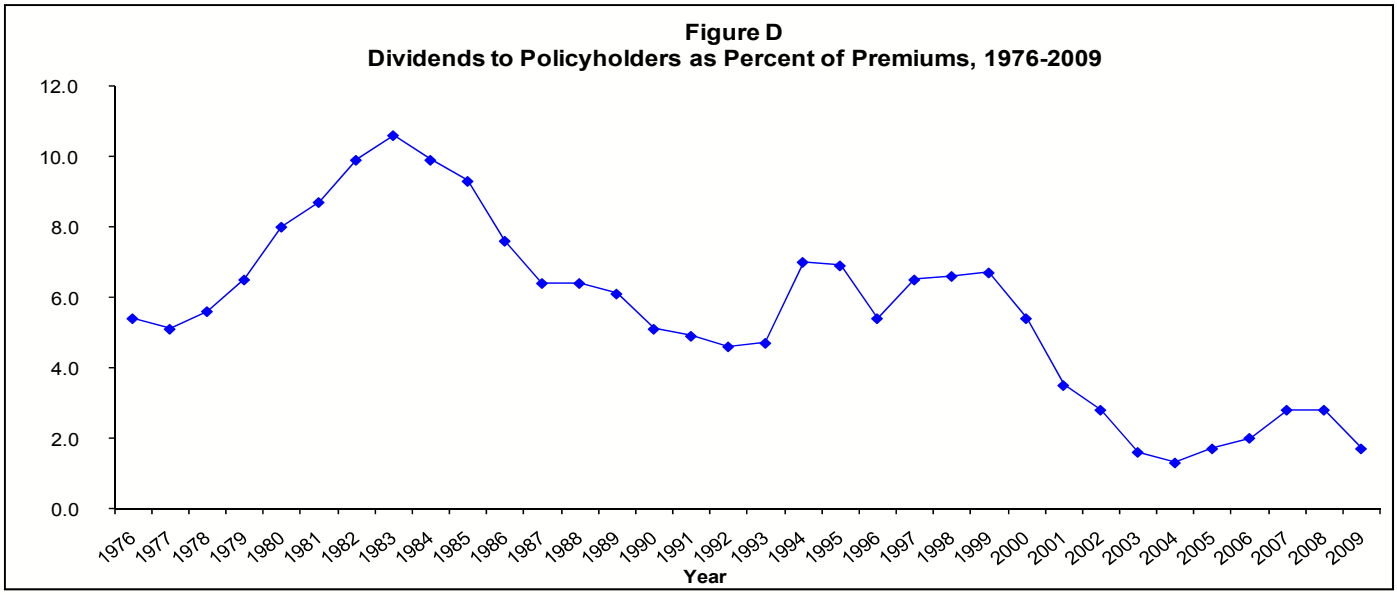


100 in every year. This was the longest string of profitable years for the workers' compensation insurance industry in the last half-century (and probably in the history of workers' compensation). The best years were 1995 to 1997, when on average carriers had profits of more than $17.00 per $100 of premium (because the overall operating ratio was less than 83.0 in those years).

The underwriting experience of workers' compensation carriers deteriorated for several years after 1997. Indeed, between 1997 and 2001, the overall operating ratio jumped almost 26 points, which is the most rapid rate of deterioration during the period covered by the data in Figure A (namely 1976 to 2009). Moreover, the overall operating ratio of 108.1 in 2001 indicates the underwriting losses in that year were worse than in all but one other year (1991) for which data are available.

The reduction in the overall operating ratio from 108.1 in 2001 to 100.4 in 2002 brought the industry to essentially a break-even point in that year. A further decline in that ratio in 2003 to 98.1 returned the industry to a profitable position for the first time since 2000. The overall operating ratio then significantly improved from 2003 to 2006, when the ratio of 86.3 was the lowest figure, and most profitable, since 1997, as carriers had profits of $13.70 per $100 of premium that year. Most recently, profits slipped in every year from 2007 to 2009, when the overall operating ratio of 95.3 meant that profits were $4.70 per $100 of premiums.



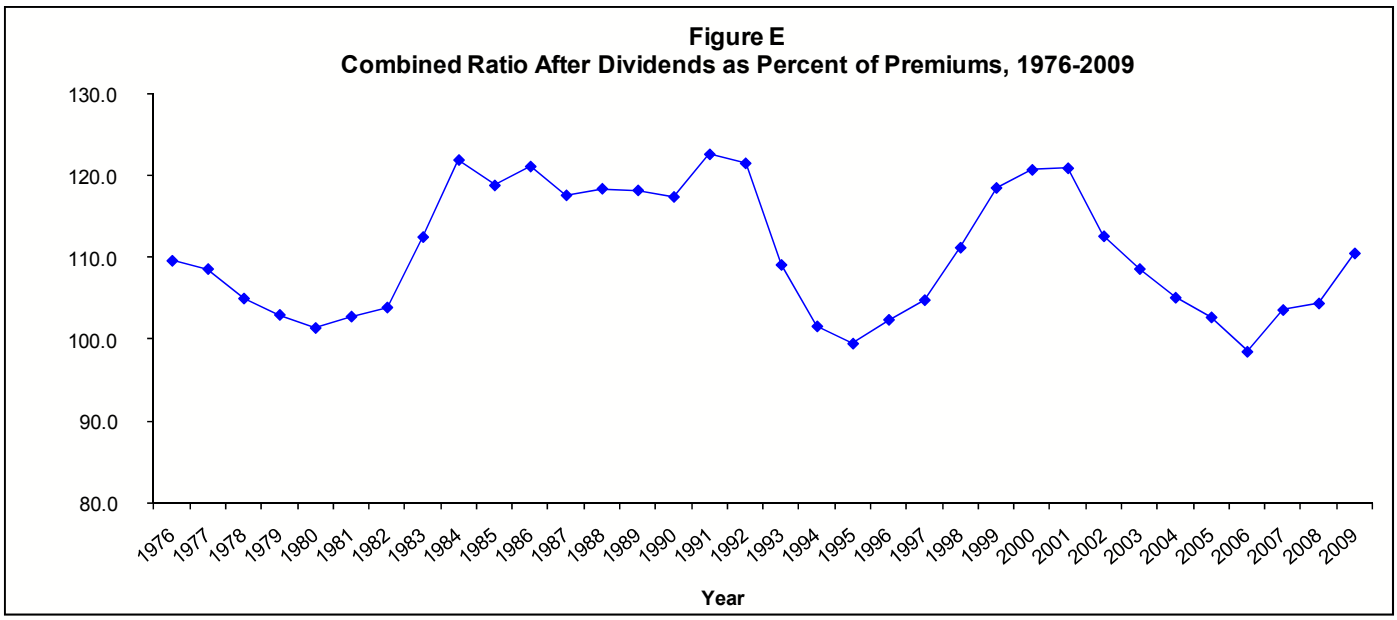


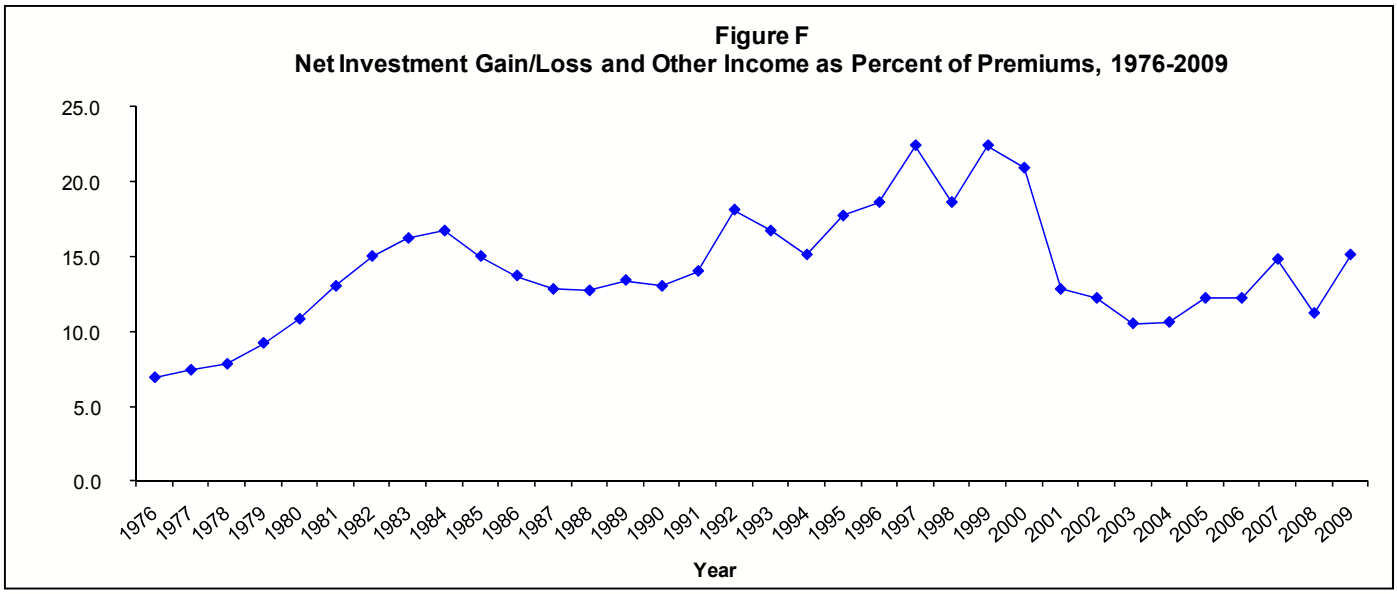
Components of the Overall Operating Ratio

The loss ratio is incurred losses (benefits) as a percentage of premiums.[4] When premiums drop more rapidly than losses (or when premiums increase less rapidly than losses), the loss ratio will increase. As shown in Figure B and Table 1 (column 1), the loss ratio increased rapidly from 58.6 percent in 1997 to 78.9 percent in 2001, and then plummeted to 60.6 percent in 2006 before increasing to 68.5 percent in 2009.

The total of incurred losses and incurred loss adjustment expenses is also shown in Figure B and in Table 1 (column 3). The difference between the two lines in Figure B is incurred loss adjustment expenses, which are also shown in Table 1 (column 2). Loss adjustment expenses include the cost of processing claims. From 1973 to 1985, loss adjustment expenses were always less than 10 percent of premium, but they have been at least 12 percent in every year since 1992. Loss adjustment expenses averaged 14.4 percent in the ten years from 2000 and 2009, and reached a new record of 16.3 in 2009. The higher loss adjustment expenses since the early 1990s compared to earlier years may reflect in part the more intensive efforts to manage health care costs for disabled workers.

Underwriting expenses incurred as a percent of premiums are shown in Figure C and Table 1 (column 4). These expenses, which include commissions and





broker fees, have also generally increased over time. Between 1973 and 1992, underwriting expenses were greater than 20 percent of premium only thrice; since 1993, underwriting expenses have been 20 percent or greater in every year. Underwriting expenses averaged 23.0 percent of premiums in the ten years from 2000 to 2009.

Dividends as a percent of premiums are presented in Figure D and Table 1 (column 5). Prior to deregulation of the workers' compensation insurance markets in recent decades, carriers were limited in their ability to compete by lowering insurance rates at the beginning of the policy period. However, both mutual and stock companies could compete by offering policies that paid dividends to policyholders after the policy period. In the early 1980s, dividends ranged from 8.0 to 10.6 percent of premiums. Since 1987, dividends have never exceeded 7.0 percent of premiums. Dividends averaged 2.6 percent of premiums from 2000 to 2009, reaching their lowest point in 2004 at a mere 1.3 percent of premiums. Since 2004 dividends have been modesty higher, but were only 1.7 percent of premiums in 2009.

The combined ratio after dividends is presented in Figure E and Table 1 (column 6). The combined ratio is the sum of the loss ratio (column 1), loss adjustment expenses (column 2), underwriting expenses (column 3), and dividends (column 4). When the combined ratio exceeds 100 percent, premiums are not adequate to cover losses and expenses. As shown in Figure E, the combined ratio exceeded 100 percent in every year between 1975 and 1994, and was greater than 110 percent in every year from 1983 to 1992. The combined ratio then dropped sharply after 1992 until reaching a low of 99.5 in 1995. The combined ratio deteriorated (increased) in every year between 1995 and 2001, reaching 120.9 percent in 2001 and averaging nearly 118 percent in 1998 to 2001. Restated, for every $100 of premiums received by workers' compensation carriers in 1998 to 2001, there was an average of almost $118 of losses, loss adjustment expenses, underwriting expenses, and dividends. The combined ratio then dropped sharply for five years before reaching 98.5 in 2006, which is the lowest figure for that measure of underwriting experience in the 34 years with data in Table 1. The combined ratio increased in each year from 2007 to 2009, when it stood at 110.5 percent of premiums.

The combined ratio after dividends provides an incomplete report on the underwriting experience in the workers' compensation insurance market, however, because no account is taken of investment gains (or losses) and other income received by workers' compensation carriers. Net investment gains (or losses) and other income as a percent of premium ("net investment income") are shown in Figure F and Table 1 (column 7).[5] From 1981 to 2002, net investment income was more than 12 percent of premium in every year. Net investment income dropped below 12 percent in 2003 to 10.5 percent, which was the lowest rate since 1979. Net investment income recovered slightly to 10.6 percent in 2004, and then further improved to an average of 13 percent in the last five years (2005 to 2009). Net investment income was 15.1 percent of premium in 2009, the highest figures since 2000.

The results for 2009 illustrate why underwriting results that only focus on the combined ratio after dividends are misleading. In that year, the combined ratio was 110.5, which means that for every $100 of premi-

Table 2

Underwriting Experience, Workers' Compensation and Commercial Lines, 1991-2009

Year	Overall Operating Ratio-Workers' Compensation	Overall Operating Ratio-Commercial Lines
1976	102.6	
1977	101.2	
1978	97.2	
1979	93.7	
1980	90.7	
1981	89.8	
1982	88.9	
1983	96.3	
1984	105.2	
1985	103.8	107.5
1986	107.4	97.7
1987	104.8	93.9
1988	105.7	93.2
1989	104.8	95.7
1990	104.4	95.9
1991	108.7	96.0
1992	103.4	101.5
1993	92.4	94.2
1994	86.4	99.2
1995	81.8	95.0
1996	83.8	92.7
1997	82.4	87.3
1998	92.6	92.8
1999	96.1	97.2
2000	99.8	94.3
2001	108.1	108.0
2002	100.4	100.6
2003	98.1	93.1
2004	94.5	93.0
2005	90.5	95.0
2006	86.3	80.7
2007	88.6	83.3
2008	93.2	98.0
2009	95.3	89.8

Source:
Best's Aggregate & Averages Property/Casualty, 2010 and prior Editions, © A.M. Best Company - used with permission. Data for years 2000 - 2009 updated to reflect values from 2010 Edition.

Notes:
The Overall Operating Ratio is the total of all underwriting expenses and income from investments as a percentage of premiums.
"Commercial Lines" includes all insurance lines except passenger auto and homeowner multiples peril insurance.

ums, there was a total of $110.50 of losses, loss adjustment expenses, underwriting expenses, and dividends. However, in 2009 net investment income was 15.1 percent of premiums, which means that the insurance industry had investment income of $15.10 for every $100 of premiums. When the net investment income ratio is subtracted from the combined ratio, the overall operating ratio for 2009 was 95.3, which – as discussed earlier in this article – means that the industry had $4.70 profit for each $100 of premiums in 2009.

Comparison to Other Insurance Lines

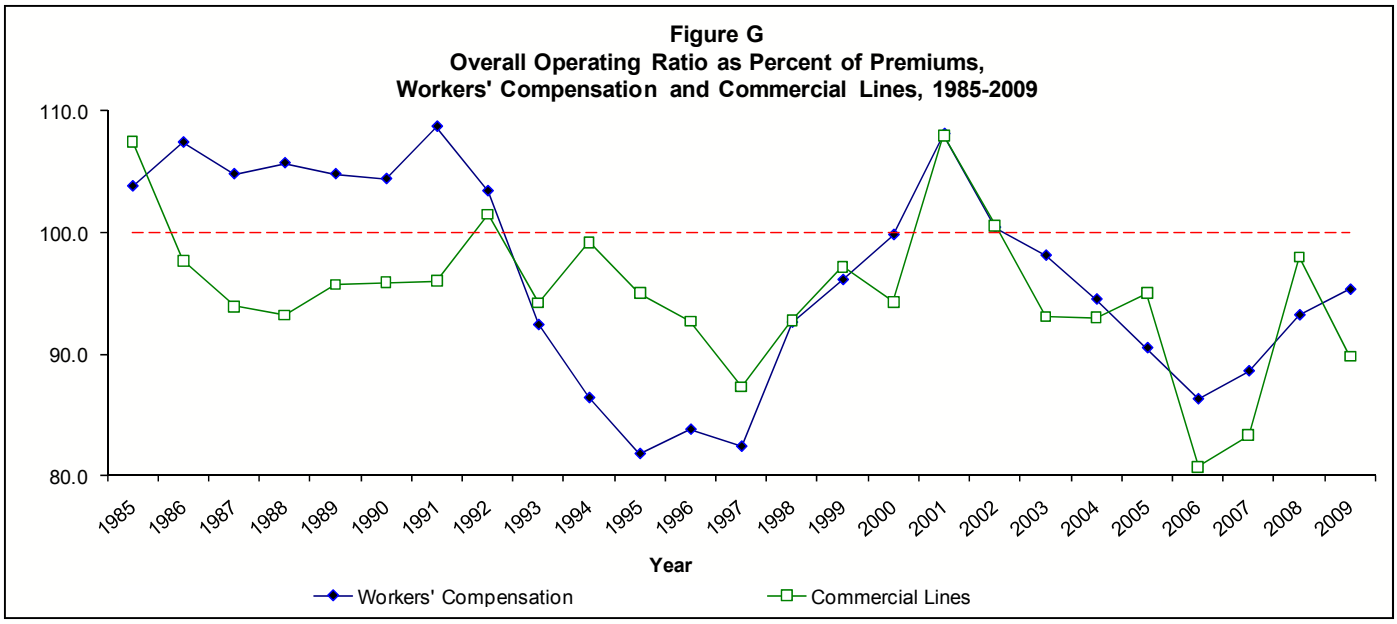
The overall operating ratio of workers' compensation is compared to all commercial lines of insurance for 1985 to 2009 in Figure G and Table 2. The comparison reinforces the impression of the volatility of the underwriting results in the workers' compensation insurance industry. The workers' compensation industry had smaller losses (a lower operating ratio) than other commercial lines in 1985; workers' compensation had losses (overall operating ratios were in excess of 100) while other commercial lines were profitable (overall operating ratios were less than 100) from 1986 until 1991; workers' compensation had greater losses than other commercial lines in 1992; workers' compensation was more profitable (a lower overall operating ratio) than other lines from 1993 to 1999.

In the ten years from 2000 to 2009, the workers' compensation industry was profitable in eight years but was less profitable than other commercial lines in six of those eight years. In 2001 and 2002, workers' compensation experienced losses, which were almost the same as the losses those years in the other commercial lines.

Analysis

There are cycles in profitability in the workers' compensation insurance industry using the overall operating ratio, as shown in Figure A and Table 1. The data series begins with two years of losses (1976-1977), followed by six years of profits (1978-1983). Then nine years of losses (1984-1992) were followed by eight years of profits (1993-2000). Most recently, two years of losses (2001-2002) were succeeded by seven years of profits (2003-2009).

Based on this "normal" history of workers' compensation cycles, a prediction about the profitability of the workers' compensation insurance industry for 2010 is difficult. The overall state of the economy indicates that employment, payroll, and premiums will probably increase slowly in 2010. However, workers' compensation paid benefits have dropped in recent years, which should ease pressures on the costs of workers' com-



pensation carriers.[6] Of particular importance to the profitability of the workers' compensation insurance industry in 2010 is what will happen to investment income. If net investment income in 2009 had not been 15.1 percent of premium, but 10.6 percent (the figure from 2004), the workers' compensation insurance industry would have been unprofitable in 2009. Whether investment income can more than offset the underwriting experience measured by the combined ratio after dividends in 2010 appears problematic.

END NOTES

[1] More complete definitions of the overall operating ratio are provided subsequently in the text and in the notes to Table 1.

[2] The reform efforts are examined in Spieler and Burton (1998).

[3] The deregulation of the workers' compensation insurance market is examined in Thomason, Schmidle, and Burton (2001: 39-43).

[4] Incurred losses include paid losses plus reserves for future losses for injuries or diseases that have already occurred. An extended discussion of insurance terminology is included in Thomason, Schmidle, and Burton (2001, Appendix B).

[5] Net investment income does not include realized or unrealized capital gains (Best 2008: 34).

[6] Sengupta, Reno, and Burton (2009: Table 12) indicate that paid workers' compensation benefits per $100 of covered payroll dropped from $1.16 in 2003 to $0.95 in 2007.

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