



COMMONWEALTH OF MASSACHUSETTS

Department of Industrial Accidents

Workers' Compensation Advisory Council

Actuarial Analysis of the Insurance
Rate Filing as submitted by the
Workers' Compensation Rating and
Inspection Bureau of Massachusetts:
September 1, 2005



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Executive Summary

Background and Scope

The Massachusetts Workers' Compensation Advisory Council (WCAC) has retained KPMG LLP to perform an independent actuarial review of the workers' compensation (WC) rate filing made by the Workers' Compensation Rating and Inspection Bureau (WCRIB) to be effective September 1, 2005. The filing was based on financial data evaluated as of 12/31/2003. This report summarizes our findings and conclusions based on KPMG's:

- a) Review of the rate filing's basic ratemaking methodology, including a verification of the accuracy of its calculations and the reasonableness of underlying assumptions.
- b) Analysis of proposed trend factors and recommendations of appropriate trend procedures if necessary.
- c) Analysis of loss experience, reserves and development.

We also briefly address the expense and profit components of the filing.

Purpose and Use

This report was prepared to assist the WCAC in understanding the major assumptions underlying the WCRIB rate filing and how KPMG's assumptions differ from WCRIB's. It may not be suitable for any other purposes. We urge all readers to examine our actuarial review in its entirety and, in particular, thoroughly review the Reliances and Limitations prior to taking any action based on our conclusions.

The data gathered, methodologies employed, and analyses performed were selected specifically to assist the WCAC in formulating their own statewide rate level indication, based on insurance industry data, excluding one of its largest, fastest growing insurers. Therefore KPMG's rate level indication may not be appropriate for individual insurers, who should develop their own rate indications based on their loss and expense experience and projected profit provisions.

Summary of Conclusions

The WCRIB's rate filing for +1.0% is within a fairly broad range of reasonable rate indications, which we determined to be -17% to +9%. KPMG's point estimate indicated rate change lies below WCRIB's, at -6.1%. The methodology employed by WCRIB is both sound and thorough. The following summarizes our conclusions regarding the key finding of our analysis.

- **Underlying Data:** The financial data used in the filing did not include the American International Group (AIG), which constitutes 18-25%¹ of the Massachusetts Workers'

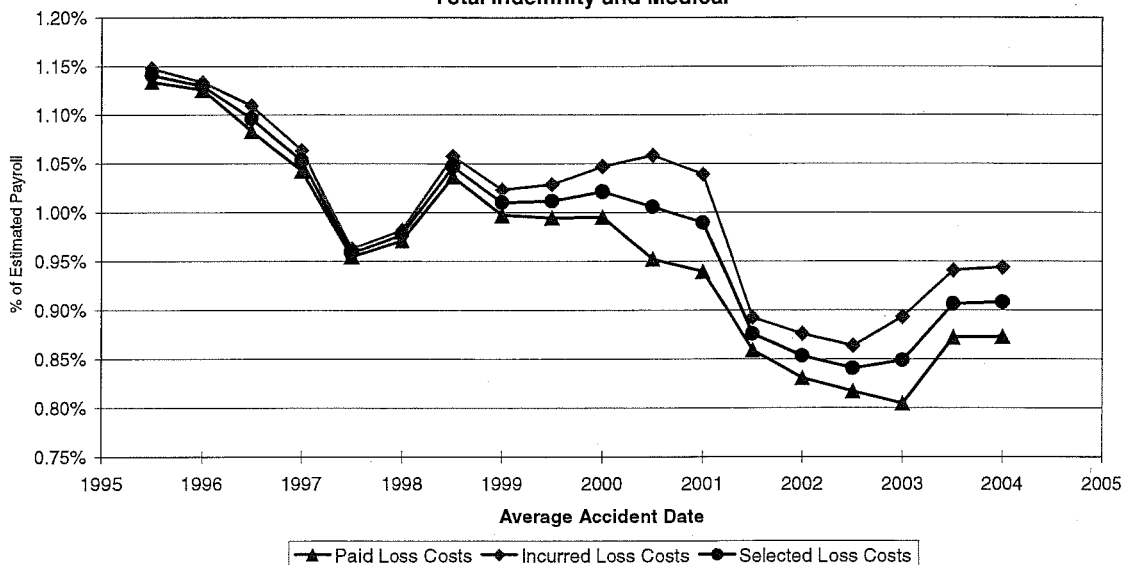
¹ Market share information was taken from the transcript of Workers' Compensation Hearing Docket No. R2005-5, February 16, 2005, an inquiry into the cooperative activities and practices of AIG regarding submission of data on that business to the WCRIB.



Compensation market. AIG, as well as all other carriers in the state, report data annually to WCRIB. The accuracy of AIG's original data submission as of 12/31/2003, was questionable, and revised data was subsequently submitted by AIG. The WCRIB has not yet been able to verify the accuracy of the revised data, and therefore excluded the data from the filing. If AIG's loss experience is significantly better or worse than other carriers in the state, the missing data could impact the overall rate level indication.

- **Loss Development:** WCRIB's loss development assumptions are similar to KPMG's. KPMG's projected ultimate losses are slightly lower than WCRIB's for recent years. This difference has a small impact on the overall difference in rate indications. We reviewed both paid and case incurred loss development. For indemnity losses, the two projection methods yield similar results. However, medical incurred losses (paid amounts plus individual claim reserves) are projecting significantly higher cost levels than paid loss. For the past several calendar years, medical incurred losses have developed significantly more than expected, based on long-term historical data. As shown below, this has caused total loss projections based on incurred loss (green diamonds) to exceed paid loss projections (red triangles). WCRIB used the average of the paid and incurred projections, as did KPMG. If WCRIB had used only paid loss, the rate indication would have been -2.7%, while the indication based on incurred data would have been +4.6%².

Historical Ultimate Loss Projections: Massachusetts
Comparison of KPMG Projections - Paid vs Incurred Losses
Total Indemnity and Medical



² Assumes no changes in trend or other rate filing factors.

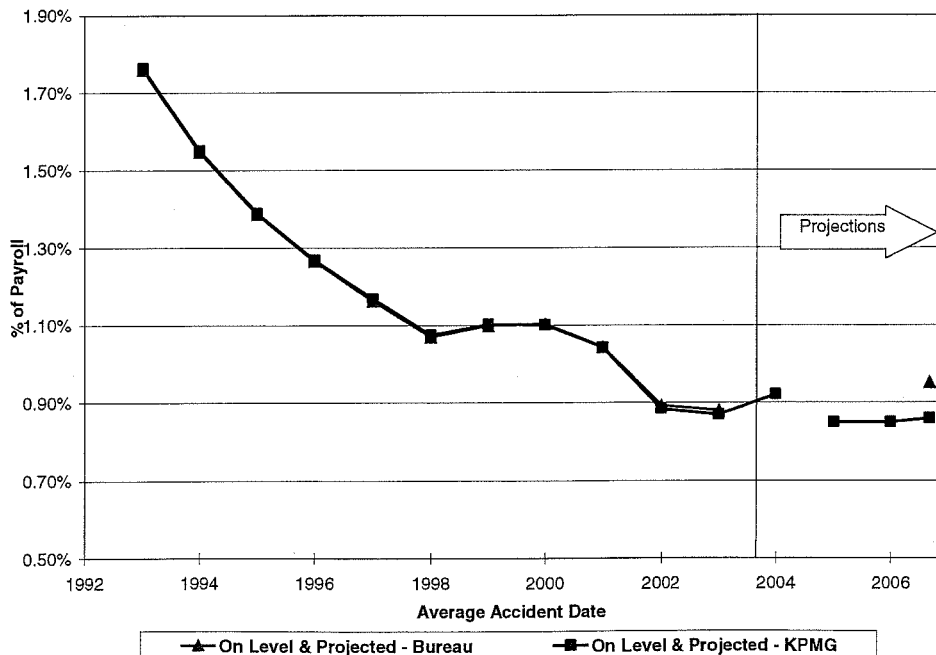


- Loss Trend:** KPMG's loss trend assumptions differed from WCRIB's, although we agree with their general methodology of projecting frequency and severity of claims separately. While our projection method differs from WCRIB's, we can compare resulting overall trend components as shown below.

Table 1: Loss Trend		WCRIB			KPMG		
		Indemnity	Medical ³	Total	Indemnity	Medical	Total
(1)	Claim Frequency: per worker week	-4.9%	-3.2%		--	--	--
(2)	Claim Frequency: per \$ payroll	-7.7%	-6.0%		-6.0%	--	--
(3)	Claim Severity (\$ Loss / Claims)	+8.9%	+8.3%		+5.0%	+4.9%	
(4)	Loss Cost Trend to payroll	+0.6%	+1.8%	+1.0%	-1.3%	-1.4%	-1.3%

Both WCRIB and KPMG project a declining frequency of claims, although WCRIB projects claim frequency will drop at a faster pace. Offsetting this difference, we project the average claim size will grow more slowly than the WCRIB projection. In total, WCRIB is projecting a small increase in losses compared to payroll (loss cost). KPMG projects a small decrease in loss cost to payroll. Since our projected historical on-level losses are nearly identical to WCRIB, the difference in trend assumptions is the primary driver of the difference in the rate level indications.

**Historical On-Level and Projected Loss Costs:
KPMG vs WCRIB**



³ Combination of WCRIB Medical on Lost-time claims and Medical-Only projection.

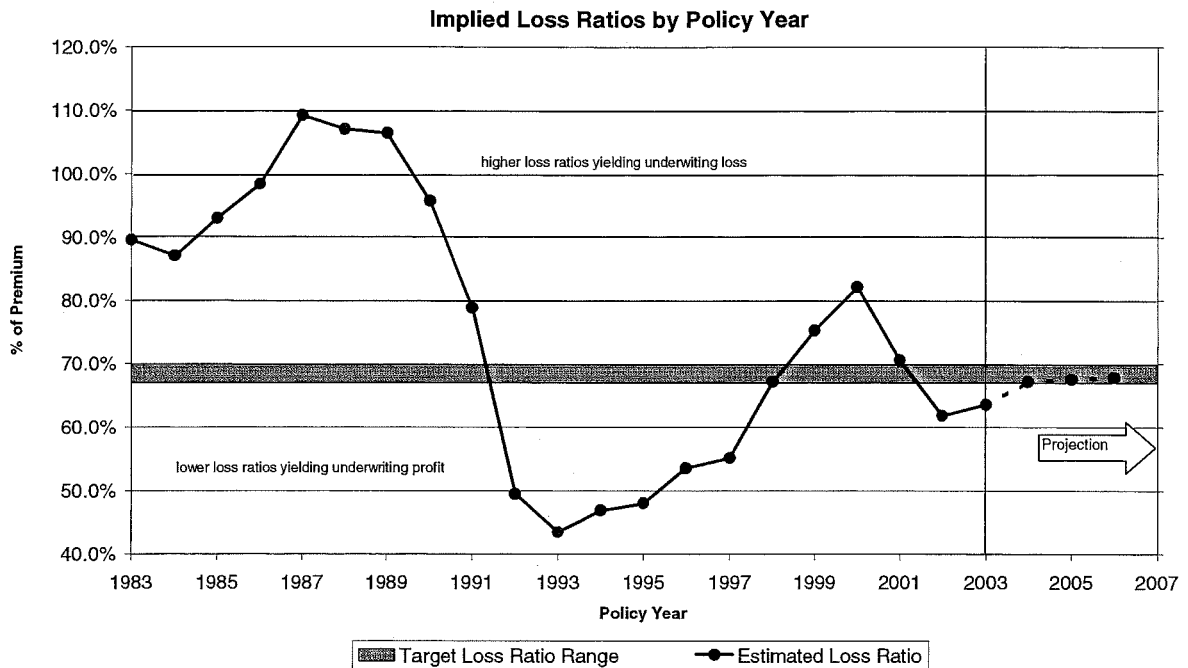


- **Range of Indications:** KPMG's analysis focused on the loss portion of the rate, which is the single largest component. Historical on-level loss costs have shown a long-term decline since the 1991 reforms; however, the rate of decline has slowed in recent years, as shown in the previous graph. Loss costs were nearly flat from 1998-2001, and then declined again in 2002-2003.

This graph also shows the initial indication for policy year 2003 (accident date 2004), which reflects an increase in loss costs. This year's projection is highly leveraged, due to the small percentage of losses reported as of 12/31/03. In fact, 12 months of claims attributable to the policy year had not yet occurred at this initial reporting of data. At subsequent evaluations, the projected loss ratio and loss costs for this "incomplete" year can change substantially. For this reason, WCRIB does not include the incomplete policy year in their rate indication. KPMG also did not reflect this year's upturn in losses in our projection of future losses. However, it does influence our indicated range of indications, through projected trend selections. If policy year 2003 is an early indicator of increasing future costs, a rate increase may be indicated. The other factor influencing our range is the difference between the paid and incurred loss development projections.

We project loss to be 0.86% of payroll, with a reasonable range of 0.75% to 1.00%. We estimated that WCRIB's filed rates implied projected losses of 0.94% of payroll. Their estimate lies within our expected range.

- **Loss Adjustment Expense:** There was a significant difference in the projected loss adjustment expense (LAE) provision from the 9/1/2003 rate filing. The current filing projects LAE at 16.6% of loss, while the 2003 filing included a 24.7% provision.
- **Other Expenses and Profit:** We reviewed the expense analysis in the WCRIB filing; based on the information provided, the WCRIB's expense analysis is reasonable. There was a reduction in both the fixed and variable expense provisions from the 2003 filing.
- **Net Loss Ratios:** Insurers measure profitability by monitoring their loss ratios (losses expressed as a percentage of premium). Based on expense provisions contained in the filing, a reasonable net target loss ratio (excluding LAE) is 67-70% for workers' compensation insurers in Massachusetts. The following graph displays KPMG's projected net industry loss ratios, in comparison to the current target loss ratio range.



The 1980's were characterized by underwriting losses while the 1990's largely saw underwriting profits for insurers. Recent rate levels have been approximately correct, with loss ratios in the target range.



Summary of WCRIB Rate Filing

The WCRIB indicated rate change of +1.0% was determined via a projected loss and LAE ratio, plus fixed expenses, compared to a permissible loss ratio. Below we compare the projections of losses and expenses in the current filing with those from 2003.

Table 2: Summary of Current and Prior Filing

	<u>Component</u>	<u>9/1/2003</u>	<u>9/1/2005</u>	<u>Change</u>
		(1)	(2)	
(a)	Projected Loss Ratio ⁴	69.1%	66.8%	-3.2%
(b)	Loss Adjustment Expense Provision to loss	1.247	1.166	
(c)	Projected Loss and LAE Ratio: (c) x (d)	86.1%	77.9%	-9.5%
(d)	Fixed Expense provision	7.5%	5.0%	
(e)	Projected Loss, LAE and Fixed Expense: (c) + (d)	93.6%	83.0%	-11.3%
(f)	All Other Expense to premium	17.1%	16.9%	
(g)	Profit Provision to premium	-1.5%	+0.9%	
(h)	Permissible Loss Ratio: 1.00-(h)-(i)	84.4%	82.2%	-2.6%
(i)	Indicated Rate Change (e) / (h) -1	+10.9%	+1.0%	
(j)	Approved Rate Change	-4.0%		

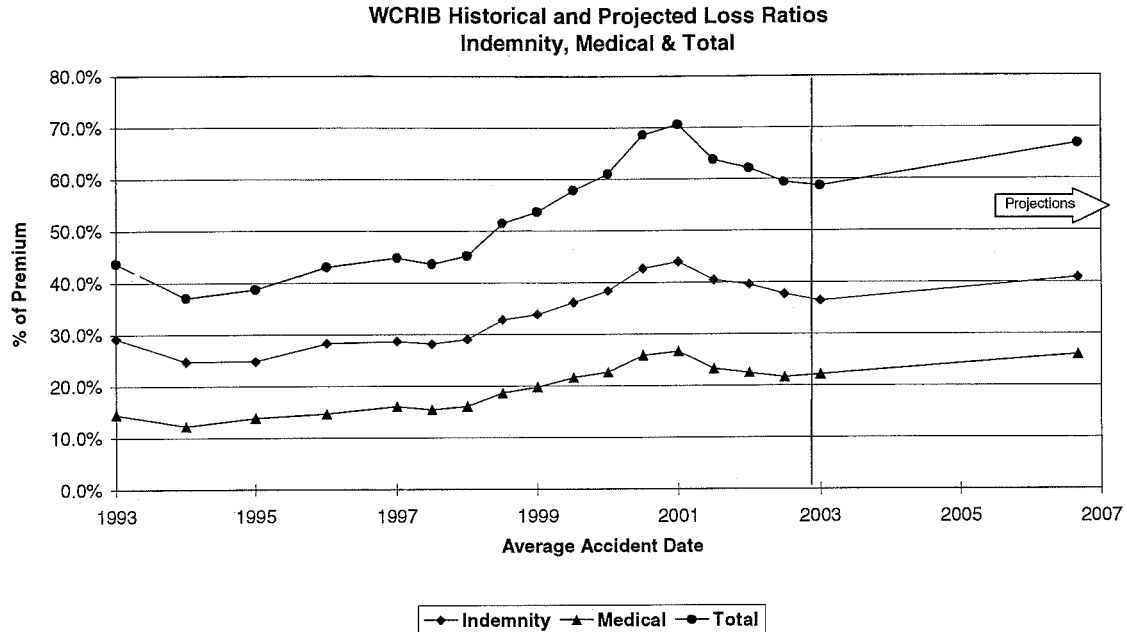
Both loss and expense projections have decreased since the last filing, with a significant impact from the projection of loss adjustment expense (“LAE”) to loss, shown in row (b).

Loss Ratio Projections

In the current rate filing, WCRIB’s projected loss ratio is based on policy years 2001 and 2002. WCRIB used historical reported losses evaluated as of 12/31/2003, developed them to their ultimate level, adjusted to the current benefit level, and then adjusted for loss trend. The final result is shown in row (a) of the table above. Premiums are also developed to their ultimate level and adjusted to the current rate level and the expected level of various rating programs, such as experience rating.

The graph on the following page compares historical loss ratios, prior to adjustments for rate or benefit changes, with the projected loss ratios. All losses and premium are developed to ultimate level.

⁴ Adjusted for various pricing programs such as experience and merit rating, construction credit, and ARAP. In addition, premium is adjusted for past rate changes and losses are adjusted for benefit level changes. Losses and expected payroll are trended to the average expected date of loss, one year after the filing effective date.



Loss Projection / Development Methods

An issue in the filing is the difference between the projections based on paid loss and those based on incurred (paid + case) loss. There is a disparity for medical loss between these two methods, with incurred loss projections substantially higher than paid projections. This disparity also existed in the 9/1/2003 rate filing. A difference of this type can occur for two reasons. The rate of claims payment may be slowing, in which case the paid method will understate ultimate loss, and the incurred method will be a more appropriate estimate. Alternatively, the current case reserves may be established at a higher level than in the past, which would imply the incurred method will overstate ultimate loss and the paid method will more accurately reflect ultimate loss. These two phenomena may also occur simultaneously, with the correct loss projection falling between the two methods.

The WCRIB filing does not include any diagnostic statistics, which would be needed to determine which method may be more accurate. The filing averaged the two methods in making projections. Without additional information to determine which method may be more accurate, KPMG also averaged the two loss development projections:

Loss Adjustment Expense

In the 2003 filing, it was noted that LAE-to-loss was dropping rapidly from 1999-2001, however the filing proposed a three-year average. This drop in LAE costs was unexplained. In the current filing, LAE costs have been fairly stable for the past three years, with a slight rise, from 2001, at 15.8% of loss, to 2003, at 17.0% of loss.⁵ The WCRIB is again proposing a three-

⁵ These percentages have been adjusted for the impact of large deductible policies.



year average, which is reasonable given the stability of the recent data. The change in the LAE provision is a driver of the difference between the filed indication at 9/1/2003 of +10.9% and the current indication of +1.0%.

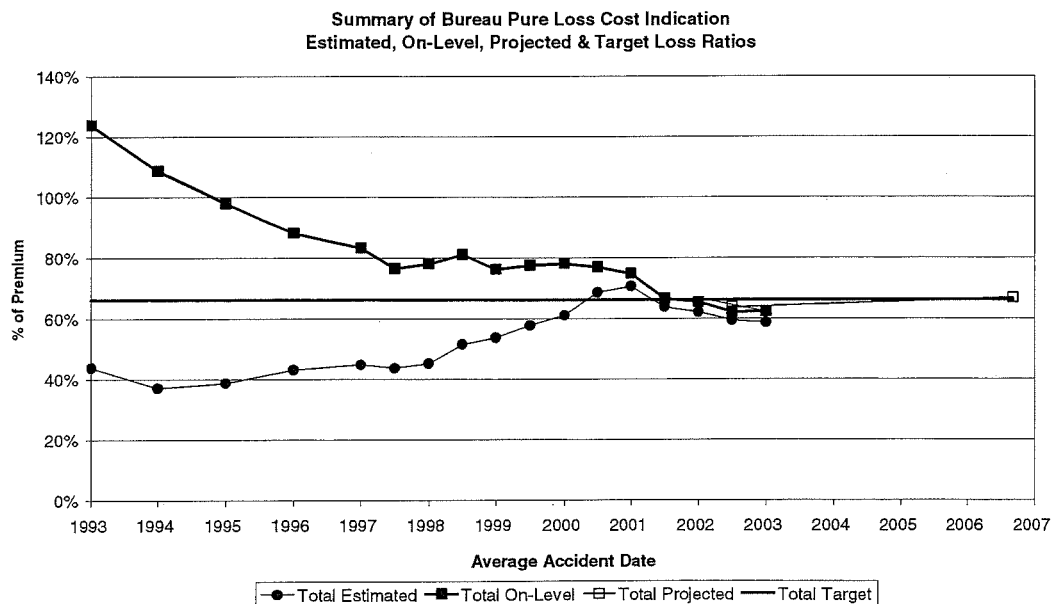
Other Expense & Profit

The projected loss ratio was combined with a fixed expense provision (Table 2, line d), which has decreased from the 2003 filing. The variable expense provision (Table 2, line f) has also fallen slightly from the last filing. WCRIB's provisions were based on significant analysis of available industry expense information, including pool expense and reinsurance costs.

The profit provision (Table 2, line g) was determined using an internal rate of return (IRR) methodology, as in the last filing. In this year's filing, WCRIB developed their own IRR model, to avoid the use of a proprietary model, which was criticized in the last rate filing. IRR models are a commonly used method to determine profit provisions and the general assumptions and calculations used by WCRIB appear reasonable. The profit provision has increased to a small positive amount, which, according to the WCRIB, is primarily due to the low investment returns currently available to insurers.

Trend

The graph below compares actual (blue circles) and on-level loss ratios (black squares), projected by WCRIB, to the target permissible loss ratio.





The difference between the actual and on-level loss ratios is primarily due to rate decreases that have occurred since 1994. In addition, there have been increases to on-level loss due to benefit increases and medical fee schedule changes.

As noted in our Executive Summary, differences in trend assumptions are the primary difference between WCRIB and KPMG's rate indications. In this section we highlight differences between WCRIB and KPMG's trend assumptions.

The WCRIB projected loss ratio is based on the average of the last two complete policy years from the financial data, shown as accident dates 2002 and 2003 in the previous graph. The loss ratio is projected to 9/1/2006 based on the following trend assumptions:

Table 3: WCRIB Annual Trend

	<u>Indemnity</u>	<u>Medical – Lost Time</u>	<u>Medical Only</u>	<u>Total</u>
Claim Frequency: per worker week	-4.9%	-4.9%	-2.5%	-3.2%
Wage Inflation (AWW)		3.0%		
Claim Frequency per \$ payroll	-7.7%	-7.7%	-5.4%	-6.0%
Claim Severity (\$ Loss / Claims)	+8.9%	+10.3%	+6.8%	+8.3%
Loss Cost Trend to payroll	+0.6%	+1.8%		+1.0%

The loss trend assumptions are not derived from the financial data, due to a lack of claim counts needed to determine claim frequencies and average severity of claims. Instead, WCRIB based their trend projections, both frequency and severity, on Unit Statistical Plan ("USP") data. USP data is more detailed than financial data, but it does not contain the most recent loss information. KPMG's trend procedure uses the claim counts from USP data as a proxy for assumed financial data claim frequency. This allows us to estimate average severity changes implied from the financial data.

A drawback to USP data is that it only contains case incurred loss, not paid loss. Since the financial data indicates higher loss projection based on incurred than paid loss, it is likely that USP data has similar higher indicated cost, due to the use of incurred loss. This may cause the average severity trends to be higher than if they were based on the average of paid and incurred losses. Since KPMG's severity projections are based on the financial data, there is no mismatch between the loss development method underlying the trend factors and the data to which trend is applied.

An additional difference this year between financial data and the USP data is the exclusion of AIG. While AIG's financial data was not included in the filing, their detailed USP data was included in the trend calculation. Without more information on AIG frequency and severity trends vs. that of all other carriers, it is not possible to determine what impact, if any, results from this mismatch.

WCRIB's trend procedure applied credibility to the indicated trends for frequency and severity. For frequency, recent 5-year trends were weighted with long-term (15 year) Massachusetts trends. For severity, the Massachusetts 5-year trends were weighted with countrywide 5-year



trends. WCRIB assumed that while other states' absolute average claim costs would not match Massachusetts, the indicated trend in average claim sizes would be similar. KPMG trend assumptions are based solely on Massachusetts data, so there is no reliance on loss trends from other states.

Data Excluded from Rate Level Indication

A significant data issue in this years filing was the exclusion of financial aggregate data reported by AIG. The accuracy of AIG's original data submission was questionable, and revised data was subsequently submitted by AIG. The WCRIB has not yet been able to verify the accuracy of the revised data; therefore, the WCRIB excluded the financial data from the filing. AIG is the largest writer in Massachusetts with an estimated 18-25% market share.⁶ If loss experience for AIG is significantly different than other carriers in the state, either due to classes of business written or the average loss experience of risks, the exclusion of their loss and premium data could have a substantial impact on the rate level determination. The AIG USP data was apparently not affected by the problems in the financial data reporting. Their USP data was used in calculation of individual class relativities and in the trend determination.

⁶ Market share information was taken from the transcript of Workers' Compensation Hearing Docket No. R2005-5, February 16, 2005, an inquiry into the cooperative activities and practices of AIG regarding submission of data on that business to the WCRIB.

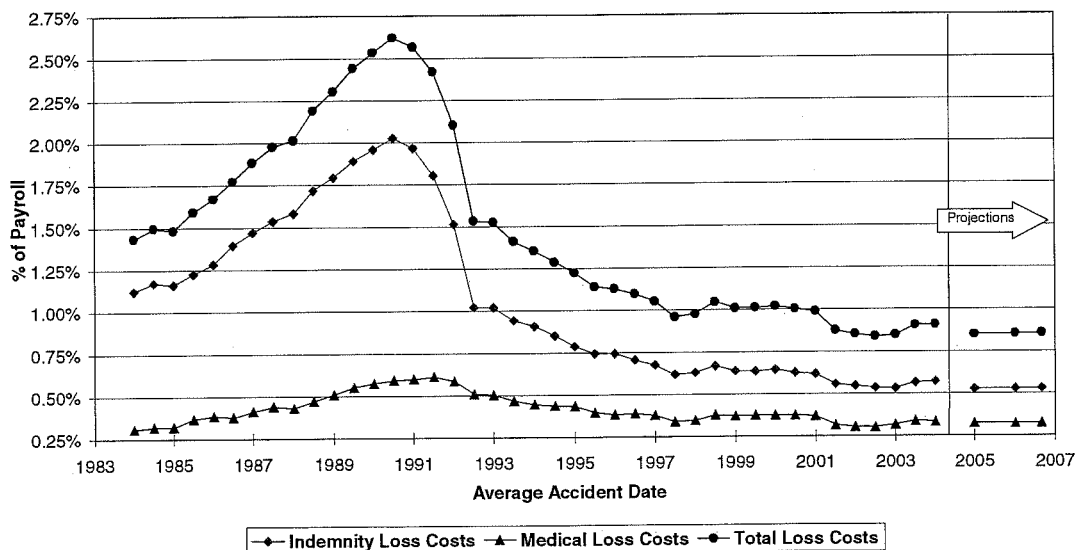


KPMG Alternative Analysis

As with the WCRIB analysis, KPMG estimates ultimate losses and premiums for historical policy periods and adjusts the loss and premium for past rate and benefit changes. But rather than determining loss ratios, we estimate the payroll underlying the on-level premium and determine indicated historical loss costs to payroll. These loss costs reflect loss only, with no provision for loss adjustment expense or any other expenses.

Payroll is estimated by adjusting reported premium to the current manual rate level. This process is similar to on-level adjustments taken in the WCRIB filing and we relied on their estimates of various pricing programs, such as experience and merit rating, contractors' construction credits, ARAP and expense constants. Using the average manual rate by policy year, we estimated payroll as (on-level manual premium / manual rate).⁷ The historical loss costs, and our projected values are shown in the graph below for both medical and indemnity loss.

Anticipating Changes in Historical Loss Cost (Loss Only) Trends:
 Indemnity, Medical & Total



While the WCRIB rate indication is directly based on the 2001 and 2002 policy years, we review the past twenty years of both policy year and accident year loss projections. The 1991 reforms had a significant impact on reducing costs, and since that time, costs have generally been declining. However, since 1997 the rate of decline has slowed.

The latest accident year and policy year show an increase in costs (last two points in the 'historical' period.) However, these years are immature and can change significantly at subsequent evaluations. The WCRIB does not use the latest policy year in their indications for

⁷ The WCRIB filing Section V-F, Exhibit 1, provided the average manual rates effective 9/1/03 for years for 1987-2002. This information allowed us to reflect shifts in class distribution in the average rate. However, if AIG data has a significantly different distribution by class from the rest of the market, our payroll amounts could be distorted.



this reason. Given the long-term decline in average costs, we also did not rely on the latest immature losses in projecting trends.

KPMG's trend analysis, like WCRIB's, relies on projections of frequency and severity of claims. Since the financial data does not include claims counts, we rely on the frequency from USP data. We use the USP frequency measure of lost-time claims/ payroll as a proxy for financial data frequency. While there can be mismatches between the USP and financial data, the general rate of change in claim frequency between the two data sources should be similar. While we are concerned about the mismatch due to the inclusion of AIG data in USP and exclusion in financial data, the USP data is our best source for claim frequency information.

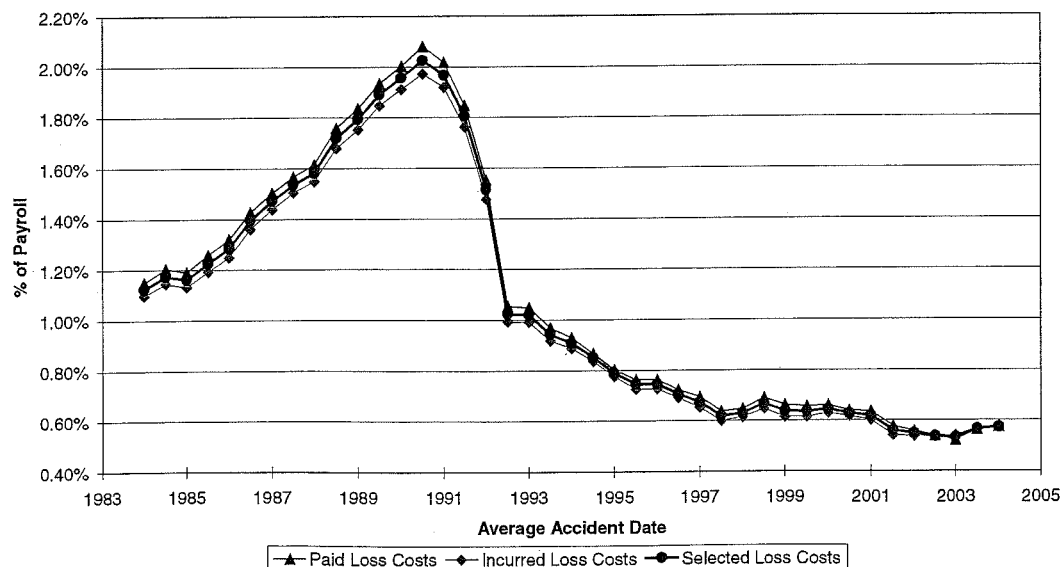
The USP data is not as current as financial data, with the last year at 2002, so we must project expected frequencies for several years. We divide our indicated loss costs by the historical and projected claim frequencies, to derive implied medical and indemnity severities. These financial data severities are the basis for our projected future costs. In this manner, our frequency and severity trend projections are consistent with the overall trends underlying the financial data. By relying on the financial data, any potential over-estimation in claim frequency will be balanced with a corresponding reduction in claim severity. Conversely, if the frequency 'proxy' determined from the USP data were lower than the actual frequency underlying the financial data, our 'implied' severity would be correspondingly higher, leading to a correction in total loss projections.

The following summarizes the key components of KPMG's analysis and highlights concerns about or differences with the WCRIB approach.

Loss Development

The first step in KPMG's analysis was to estimate ultimate losses for historical accident periods based on both paid losses and incurred losses (paid losses plus case reserves established by insurer claims personnel).

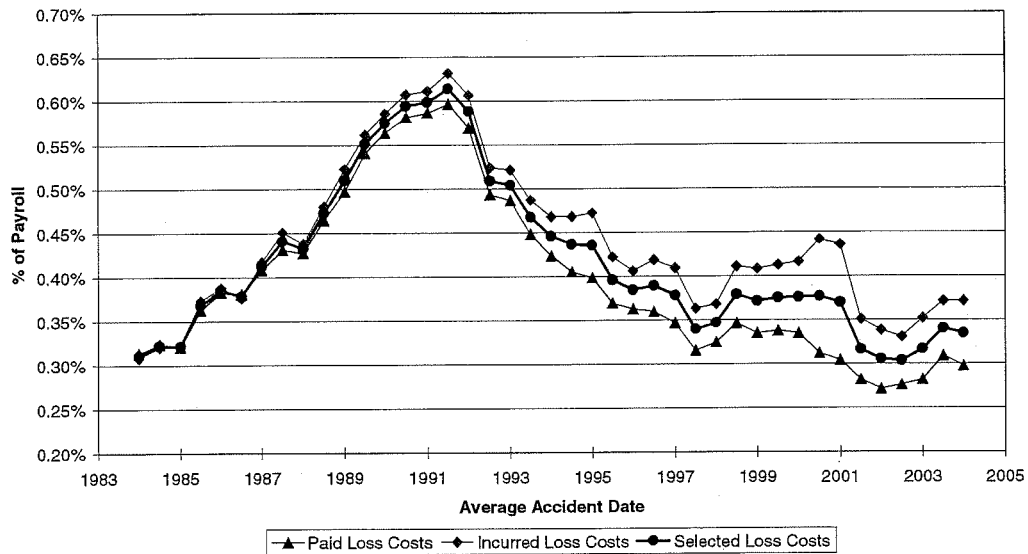
Historical Ultimate Loss Projections: Massachusetts
Comparison of Projections - Indemnity





This previous graph presents our ultimate loss projections for indemnity benefits expressed as a percentage of payroll. In a stable environment, the two projections should produce consistent ultimate loss estimates. In Massachusetts, this is generally true for indemnity losses. However, for medical losses, the incurred loss projections exceed the paid loss projections by as much as 30%. As discussed in the executive summary, it is not clear why the two methods are divergent. Both KPMG and WCRIB used an average of the paid and incurred indications.

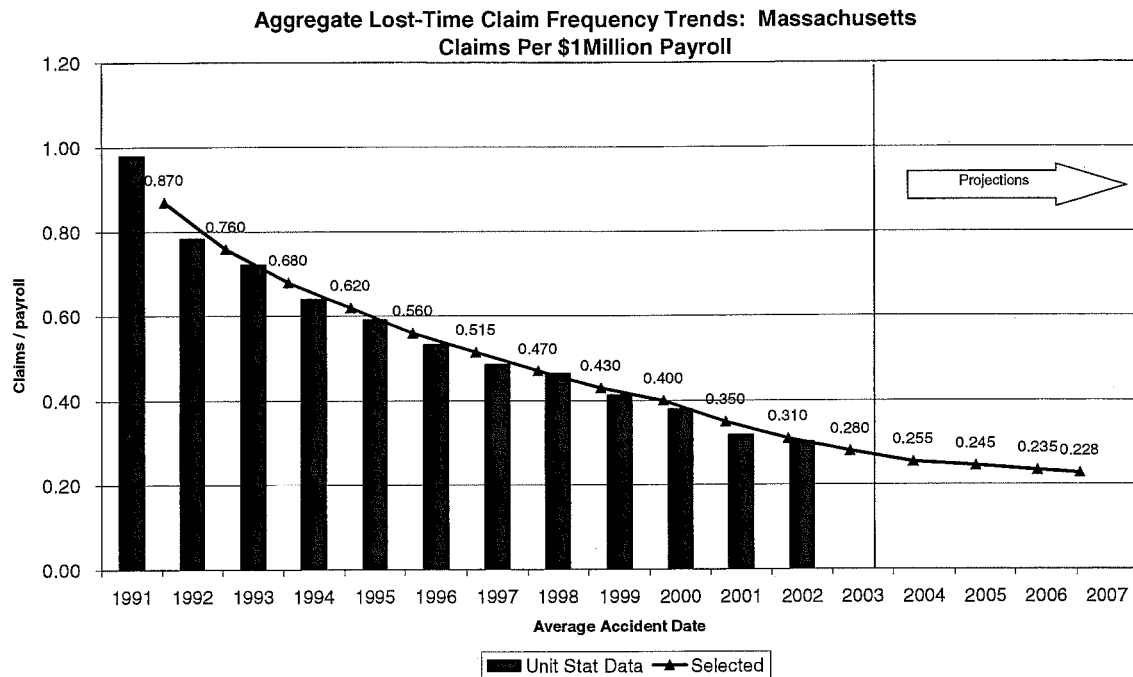
Historical Ultimate Loss Projections: Massachusetts
Comparison of Projections - Medical





Claim Frequency Trend

In our analysis, we measure claim frequency as the number of claims per \$1 million of payroll, because payroll is the basis for workers' compensation premium for most classes.



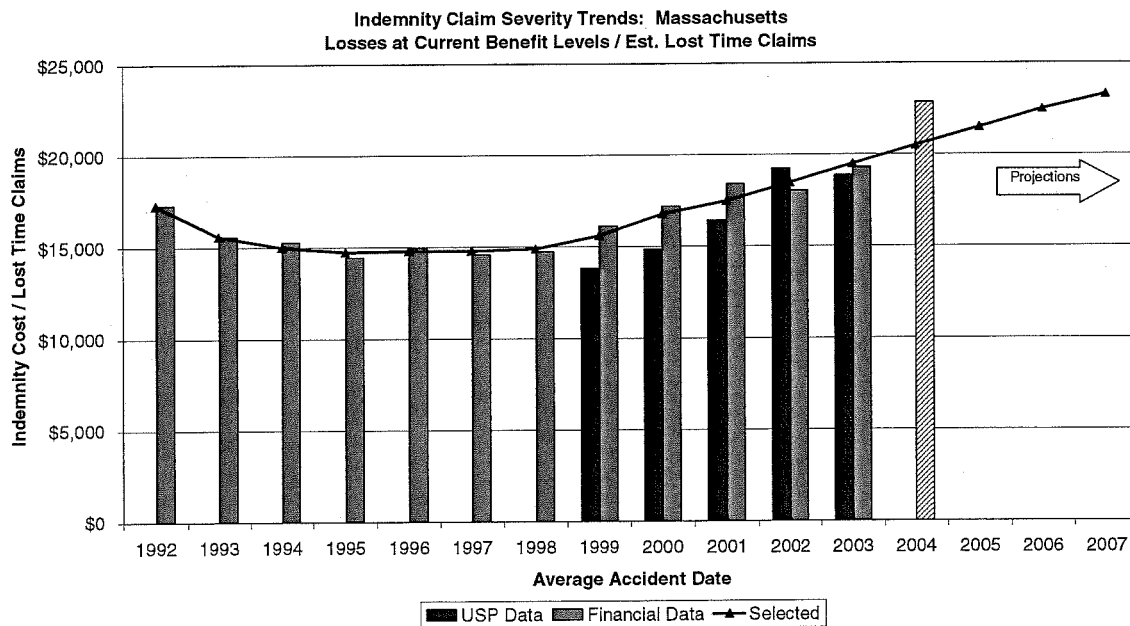
Lost-time (indemnity) claim counts, based on the USP data, were available from the WCRIB filing through 2002, shown by the blue bars in the graph below. While these counts are developed to fifth report, very little change in claim counts is expected beyond fifth report, so we consider these counts to be at their ultimate level. Our projected frequency follows the USP pattern and projects a continued drop through 2007, although at a slower pace than witnessed over the entire time period. The long-term average annual drop was about -10%, but from 2001 to 2002, frequency declined only -5%. Our projected frequency implies a -6% annual change.



Indemnity Severity Trend

Using our 'proxy' claim frequency shown in the previous graph, and our projected indemnity loss costs, we determined implied financial data severities. The following graph summarizes the historical financial data (light blue bars), the USP data (cross hatched bars), and KPMG's projected indemnity severities (solid line).

The USP severities, taken from the WCRIB filing, are indemnity losses divided by claim counts for lost-time claims only, developed only to the fifth report. Since the losses are not developed to an ultimate level, we expect them to be lower than the financial data. The two sets of data, USP and financial data, while not identical, do show generally similar increases in average severity from 1999-2003. Our selected severities follow a linear trend pattern evidenced for recent years. The financial data for the latest incomplete policy year (shown as a lighter bar) shows an unusually high severity figure. We did not rely on this data, since the year is very immature and may change significantly at subsequent evaluations.



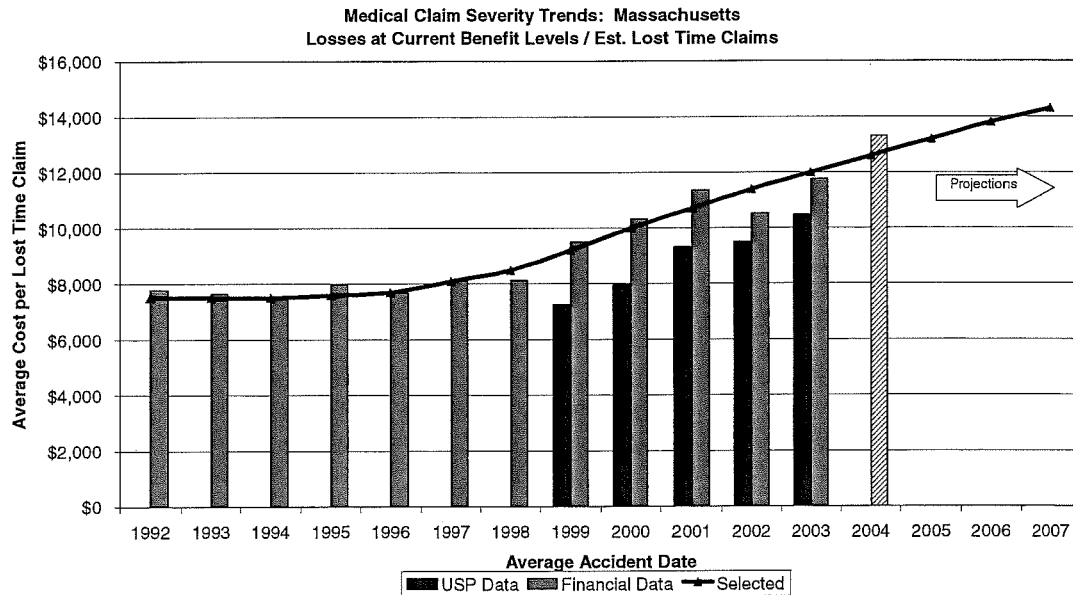
Average costs were falling or flat from 1992 – 1998 and then began to increase. The average annual change in financial data severities from 1999-2003 was +4.6% while our selected annual trend in the projection period (2003-2007) was +5.0%.



Medical Severity Trend

This graph below summarizes our analysis and projection of medical severities. The severities shown are the sum of medical losses for all injury types divided by claim counts for lost-time claims only. Again, we determine “implied” financial data medical severities by dividing our selected financial data medical loss costs by our selected lost-time frequencies.

We have limited USP severities, developed to fifth report only, from the WCRIB filing. Since they are not fully developed, they are lower than the financial data, but they do show a similar upward trend.



On-level average medical costs show little change from 1992-1998, but began increasing significantly in 1999. The average annual change from 1999 to 2003 was +5.4%, while our projected trend from 2003-2007 is +4.9%.



Summary of Trends

The table below summarizes our trend selections, and our projected loss cost of .86% of payroll. This loss cost reflects loss only and does not include loss adjustment expense or other expense provisions.

Table 4: Loss Cost Trend Benchmarks

Summary of Critical Loss Cost Trend Management Benchmarks: Massachusetts							
Policy Year	Selected	Implied Financial Data		Ultimate Loss Costs			Annual Change
	Claim Frequency	Indemnity Severity	Medical Severity	Indemnity	Medical	Total	
	per \$1m payroll	(5) / (2) x \$1 m	(6) / (2) x \$1 m			(5) + (6)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1991	0.870	\$17,044	\$6,759	1.48%	0.59%	2.07%	-18%
1992	0.760	\$13,149	\$6,635	1.00%	0.50%	1.50%	-27%
1993	0.680	\$13,084	\$6,561	0.89%	0.45%	1.34%	-11%
1994	0.620	\$12,452	\$7,030	0.77%	0.44%	1.21%	-10%
1995	0.560	\$13,019	\$6,868	0.73%	0.38%	1.11%	-8%
1996	0.515	\$12,817	\$7,350	0.66%	0.38%	1.04%	-7%
1997	0.470	\$13,123	\$7,384	0.62%	0.35%	0.96%	-7%
1998	0.430	\$14,536	\$8,649	0.63%	0.37%	1.00%	3%
1999	0.400	\$15,794	\$9,399	0.63%	0.38%	1.01%	1%
2000	0.350	\$17,317	\$10,579	0.61%	0.37%	0.98%	-3%
2001	0.310	\$17,312	\$9,848	0.54%	0.31%	0.84%	-14%
2002	0.280	\$18,611	\$11,327	0.52%	0.32%	0.84%	0%
2003	0.255	\$21,992	\$13,122	0.56%	0.33%	0.90%	7%
Projected							
2004.0	0.245	\$21,500	\$13,200	0.53%	0.32%	0.85%	-5%
2005.0	0.235	\$22,500	\$13,800	0.53%	0.32%	0.85%	0%
2005.7	0.228	\$23,300	\$14,300	0.53%	0.33%	0.86%	1%

Range of Indications

Throughout our analysis, selections were made regarding loss development and trending of losses. Based on alternate scenarios, we determined a range of reasonable rate indications.

For medical losses, we selected an average of paid and incurred loss development methods, although the paid loss indications were lower than incurred. The following table, row (1), contrasts the paid and incurred total loss projection, showing the loss cost that would be projected if we had relied on the paid or incurred loss data solely.



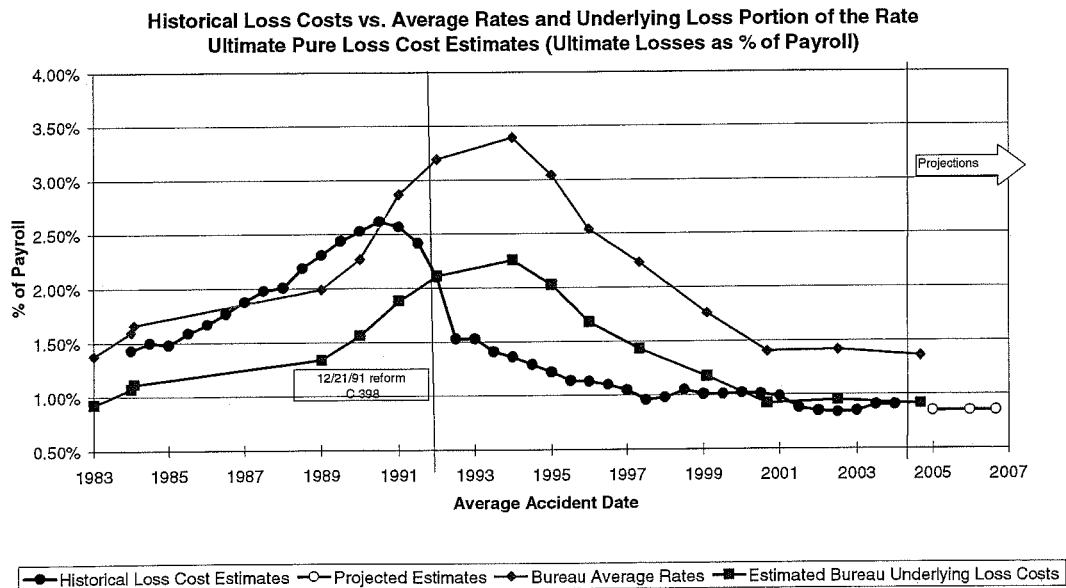
If frequency or severity projections had differed, these would also have altered the projected loss costs. Rows (2) and (3) shows alternative frequency and severity annual changes and the resulting cumulative impact of the loss cost projection. While our selected point estimate is 0.86% of payroll, the range of indications varies from 0.75%, based on paid loss development and lower loss cost trends, to 1.00%, based in incurred loss development and higher loss cost trends. This range implies a range of rate level indications of -17% to +9%.

Table 5: Loss Cost Range

	Point Estimate	Lower Projection		Higher Projection	
			<u>Cumulative</u> <u>Adjusted</u>		<u>Cumulative</u> <u>Adjusted</u>
		<u>Item</u>	<u>Loss Cost</u>	<u>Item</u>	<u>Loss Cost</u>
(1) Loss Cost (Loss Only) Annual	0.86%	Paid Loss	0.82%	Loss	0.87%
(2) Frequency Trend Annual	-6.0%	-7.5%	0.77%	-4.5%	0.93%
(3) Severity Trend	+5.0%	+4.3% ⁸	0.75%	+6.8% ⁹	1.00%

Summary of Historical Loss Costs and Average Rates

The following graph compares the historical and projected loss costs (loss only) to both the historical rates and the loss-only portion of the rate.



⁸ Exponential fit, post reform years
⁹ Exponential fit, latest 7 years

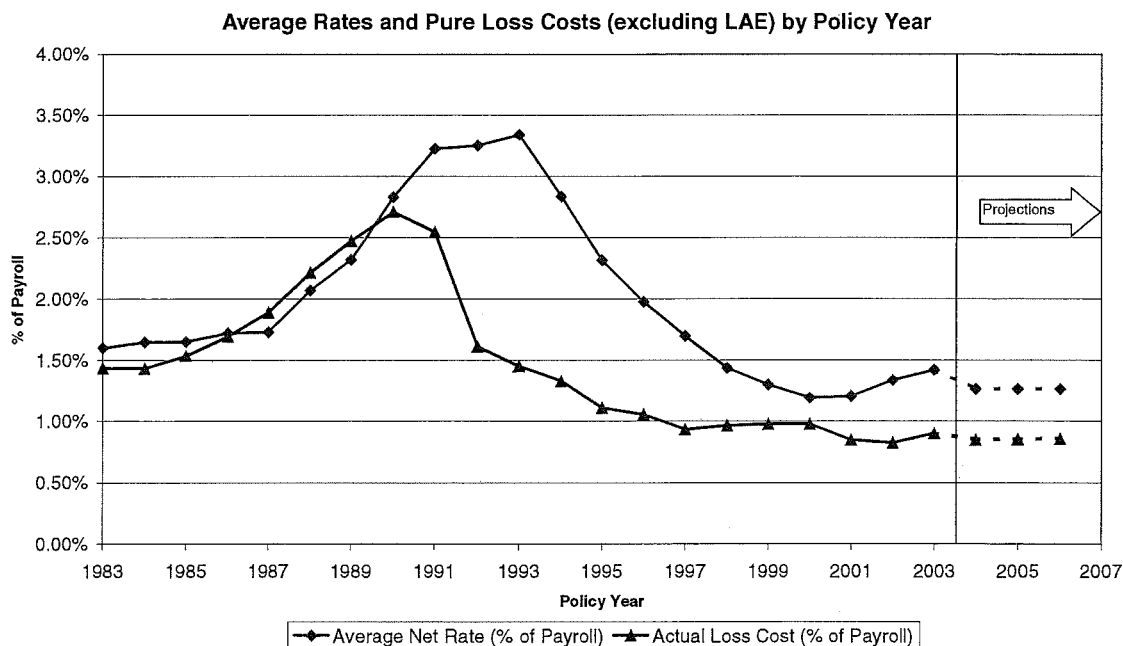


In Massachusetts, the WCRIB makes rate filings about every two years for the insurance industry. These filings included not only an aggregate overall rate increase or decrease recommendation, but also recommendations for each of the 600+ job classification codes in Massachusetts. The average of these rates (to payroll) are shown as green diamonds.

Using the expense provisions underlying the current filing, we have estimated the 'pure' loss costs underlying current rates, shown as red squares. These 'pure' loss costs are compared to our historical estimates of actual loss costs. We can see from this comparison that from 1983 through 1992, actual losses exceeded the loss portion of the rate. Following reform losses dropped quickly, while rates were slower to react. From 1993 through 1999, actual losses were lower than losses expected in the rates. Since 1999, actual losses and the loss provision in the rates have been very similar, implying only small adjustments in rates are needed.

Insurance Prices vs. Actual Loss Costs

In order for insurers to make a profit, the average rate charged needs to exceed actual loss costs by a sufficient amount to cover their expenses, although investments on funds held can also generate income to provide for profits and a portion of expenses, if premiums are adequate. Actual net rates can differ from the WCRIB rates due to insurer deviations or individual risk rating plans, such as retrospective rating or schedule rating.



From 1983 through 1990, actual charged rates were close to losses, leaving no margin for expenses or profit. After reform, rates were slow to react to the lower loss levels. However, in recent years the expense and profit margin in charged rates has declined substantially.



Reliances and Limitations

Reliances

In preparing this analysis, we have relied on historical payroll, premium, and loss information that underlie the WCRIB's latest rate filing. The conclusions and recommendations contained herein are solely those of KPMG and are not endorsed by WCRIB or any other party from whom we have obtained data. This information was relied upon without our independent audit or verification, except for general tests of consistency and reasonableness. We rely on the WCRIB to provide us with information consistent with the data used to produce their rate filing. Any concerns that we have regarding the quality of this information are discussed in the Analysis section.

Limitations

Readers of this report should understand that the result of any actuarial analysis is the estimate of expected future loss payments based on a review of historical data for the entity under study and of other data for similar entities with a broader base of experience. Actual future claim emergence and payments will likely deviate, perhaps substantially, from our estimates due to statistical variation and or systemic changes that are not apparent today. However, we feel that the methodologies employed and assumptions made in our analysis are appropriate and consistent with generally accepted actuarial principles and that our estimates and conclusions are reasonable, given the information currently available. Due to the nature of actuarial projections and the inherent degree of uncertainty involved in the prediction of future events, no assurance can be given as to the precision of any actuarial estimate for a given time period.