

State of Missouri Workers Compensation Insurance

Actuarial Review of NCCI Loss Cost Filing
Effective January 1, 2014

November 25, 2013

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Executive Summary

Select Actuarial Services has been engaged by the Missouri Department of Insurance to conduct an independent actuarial review of the National Council on Compensation Insurance's voluntary loss cost filing, effective January 1, 2014.

Scope of Assignment: We were asked by the Department

- to review the filed loss cost change for actuarial soundness;
- to calculate the effect on the filed loss costs, had the NCCI excluded assigned risk loss experience and included the loss adjustment expense experience of Missouri Employers Mutual in its calculations; and
- to recommend an alternative overall change to loss costs, if warranted by our findings.

Summary of NCCI Filing: The NCCI has filed for an overall 11.6% increase in loss costs, effective January 1, 2014. This very large indicated increase is due in part to deteriorating experience (+7.6%) and in part to the anticipated effect of Senate Bill 1 (+3.8%).

The most significant drivers of the experience indication are

- Medical loss ratios continue to climb. The general growth over time in the medical loss ratio has a compounded effect on this year's filing because the policy year 2009 medical loss ratio was unusually low. NCCI's standard procedures use the two most recent policy years to develop the indicated loss cost change. Policy year 2009 made up 50% of the indication in the January 2012 and January 2013 filings, but is not included in the current indication. The 2014 indication is based on experience from policy years 2010 and 2011 and effectively includes three years of medical inflation that was offset in the prior two filings by the unusually good policy year 2009 experience.

- Indemnity loss ratios continue to decline, but at a slower rate than in the past. Also, as medical loss ratios increase and indemnity ratios decline over time, medical costs make up an increasing percentage of total workers compensation losses. Over time, improvements in indemnity have a smaller and smaller offsetting effect against increasing medical costs.
- The July 1, 2013 changes to the minimum and maximum weekly wage benefit increased overall loss costs by +0.5%.

SB1 shifts a substantial portion of the losses previously covered by the Second Injury Fund (SIF) to the insurance system. Unfortunately, because the SIF is currently underfunded, the increases due to SB1 will not be offset by reductions in SIF assessments in the near term.

Overall Findings: With one notable exception, the NCCI's calculations are actuarially sound. We believe, however, that NCCI's calculation of the provision for loss adjustment expenses consistently overstates the actual ultimate experience, resulting in an overstatement of the needed provision by at least 1%. NCCI has selected a country-wide LAE provision of 19.9%, while we estimate that the true provision is between 18.5% and 19.4%. The result is an indicated Missouri loss cost change between +10.4% and +11.2% rather than the filed 11.6%.

As calculated by the NCCI, excluding the assigned risk program from the experience has no effect on the indicated loss cost change. Including MEM's loss adjustment expense experience in the LAE provision calculation reduces the NCCI's indicated loss cost change from +11.6% to +10.9%.

Combining the effect of including MEM experience with our recommended changes to the loss cost calculation results in a range of indicated loss cost changes from +9.7% to +10.4%. Calculation of the indicated loss cost changes is presented in Exhibit B in the Exhibits section of this report.

Summary of Loss Cost Changes

	NCCI	SAS Low	SAS High	Recommended
LAE Excluding MEM	+11.6%	+10.4%	+11.2%	
LAE Including MEM	+10.9%	+9.7%	+10.4%	+10.1%

SAS Review of NCCI experience filing: We have reviewed the overall methodology and calculations employed in the filing. There are, in fact, very few places where the NCCI exercises judgment in individual filings,

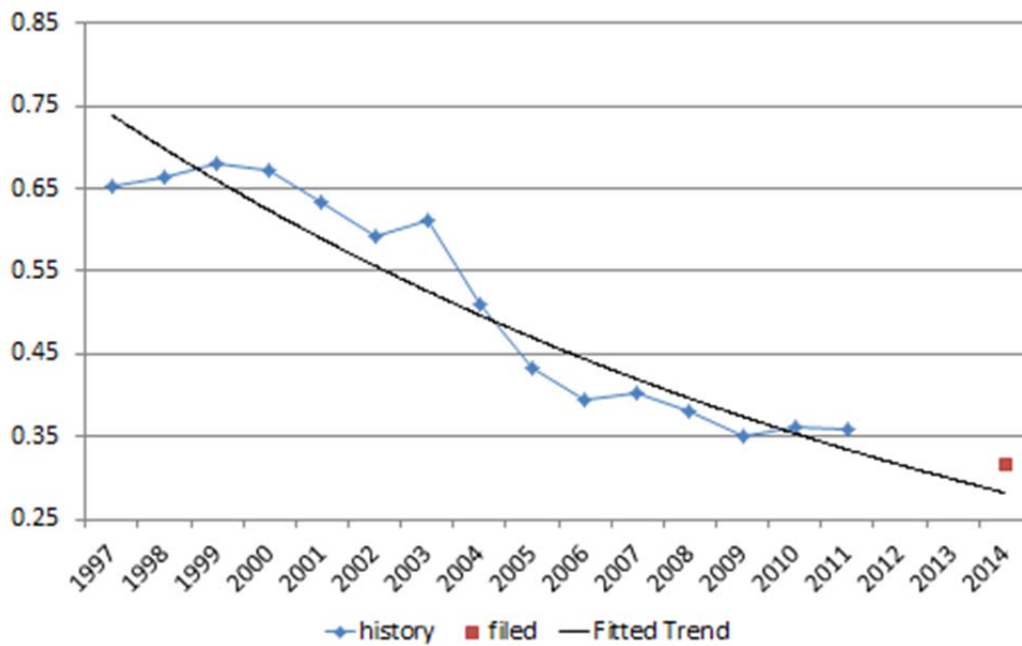
the principal place being the selection of cost trend factors. Most of the judgment that goes into NCCI filings is done at a meta-filing level. That is, significant study (and judgment) went into the design of the methodology, deliberately removing the need to make choices among competing estimates in each and every filing. The advantage to such a methodology is that there is little or no opportunity for bias – conscious or unconscious – to operate. The result should be a better estimate of the actual loss costs over the long term; however, there is always the potential that use of pre-selected averages will miss real trends in the data. Outside the judgment-call of trend factor selection, however, we believe that there needs to be significant evidence that NCCI's methodology is producing a biased result before different selections are made.

We have specifically reviewed the following components, where NCCI's judgment plays a significant role:

- 1) **Selection of loss development factors.** NCCI relies on a combination of paid loss development and paid+case loss development to estimate ultimate losses for Missouri. Recent practice has used an average of the latest two observed paid ratios and an average of the latest five observed paid+case ratios. In this year's filing, NCCI has chosen to use the latest three paid ratios to increase stability in its estimates. We concur with this decision, and in fact would have selected an average of more years. The NCCI's paid and paid+case methods do not produce materially different estimates for this filing.
- 2) **Selection of loss ratio trend factors.** Over the very long term, **indemnity loss ratios** have been decreasing at about 5.5% per year (see graph 1). Over the shorter term, indemnity trend has fallen to only about -3% (see graph 2), but it is not possible to predict whether this trend will continue or move back toward the longer term norm. The NCCI's selected annual trend, -4%, produces a projected 2014 policy year indemnity loss ratio very close to both the long term and the short term trend lines.

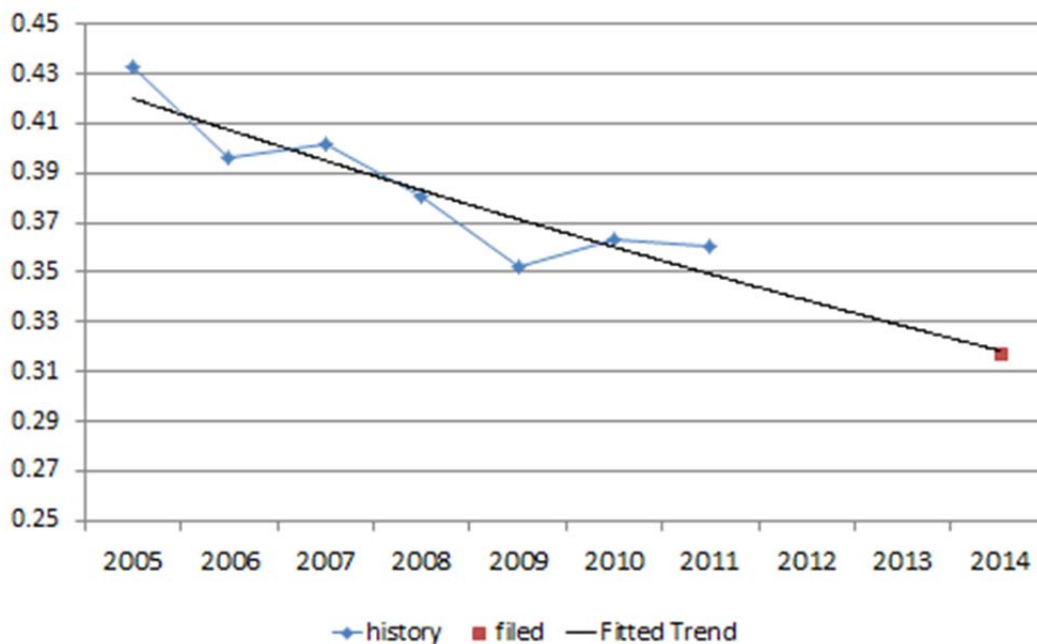
Graph 1

Long Term Indemnity Loss Ratio Trend

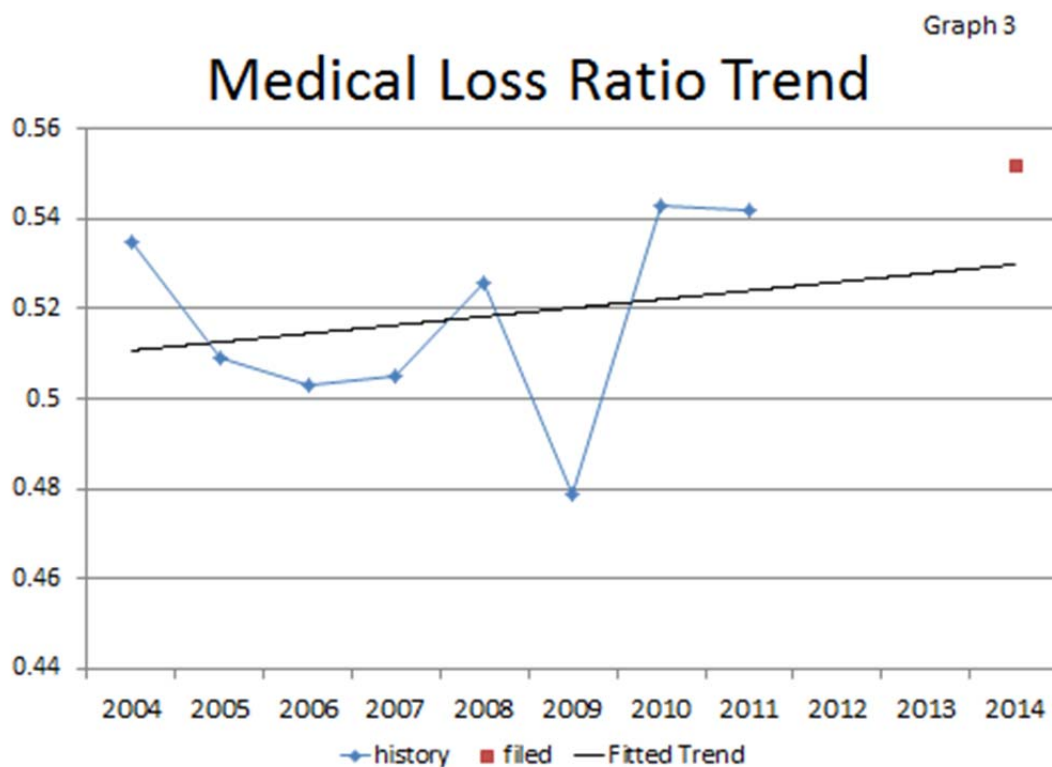


Graph 2

Shorter Term Indemnity Loss Ratio Trend

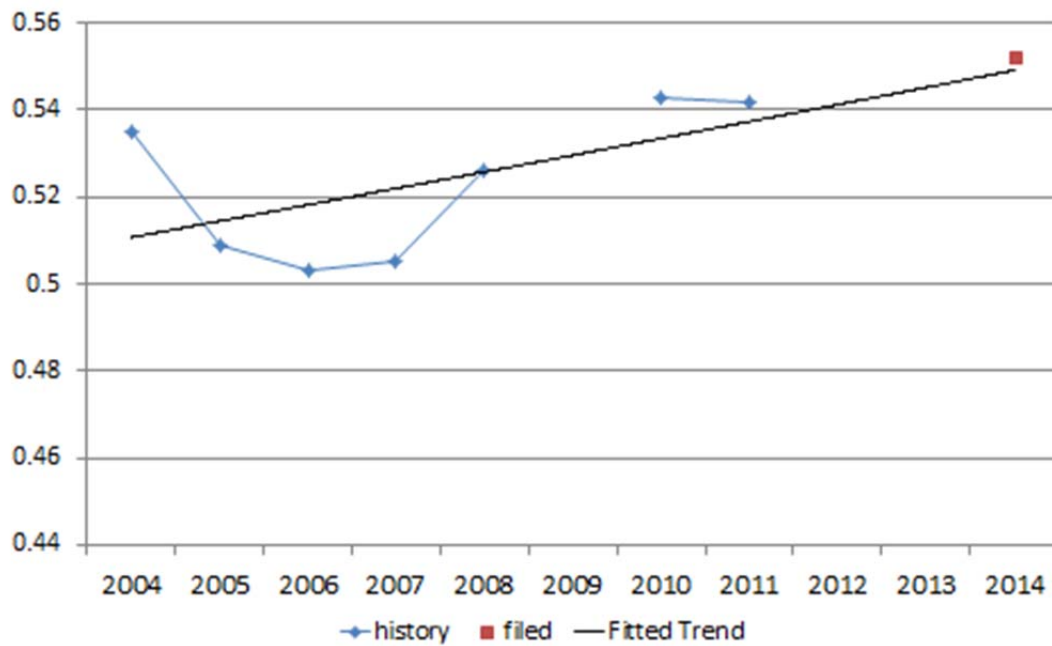


Medical loss ratios tend to be more volatile than indemnity ratios, making trend selections more difficult. Graph 3 shows the most recent eight policy years, the fitted trend, and the NCCI's projected loss ratio for 2014. In this graph, the NCCI selection of +0.5% per year appears somewhat high; however, the trend line is very heavily influenced by policy year 2009 experience, which appears anomalous at this time. As can be seen in graph 4, excluding 2009 the projected 2014 medical loss ratio is reasonable, and graph 5 supports the selection using a longer trend period. The year to year volatility displayed on graph 5 also indicates that it would not be surprising to see a 2014 loss ratio anywhere in the range from 50% to 60%.



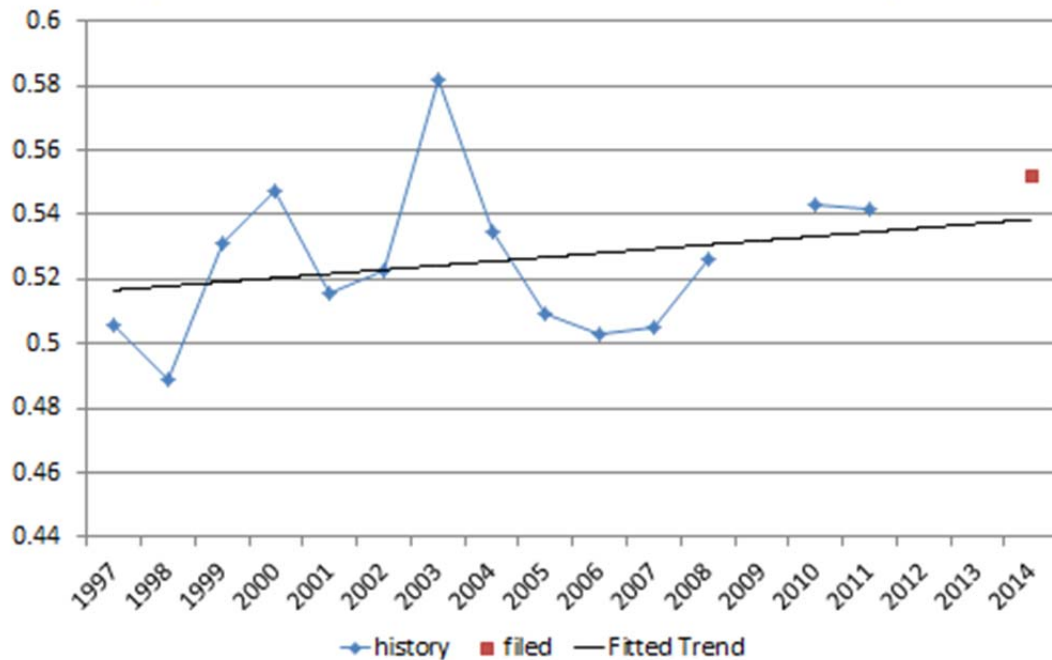
Graph 4

Medical Loss Ratio Trend Excluding 2009



Graph 5

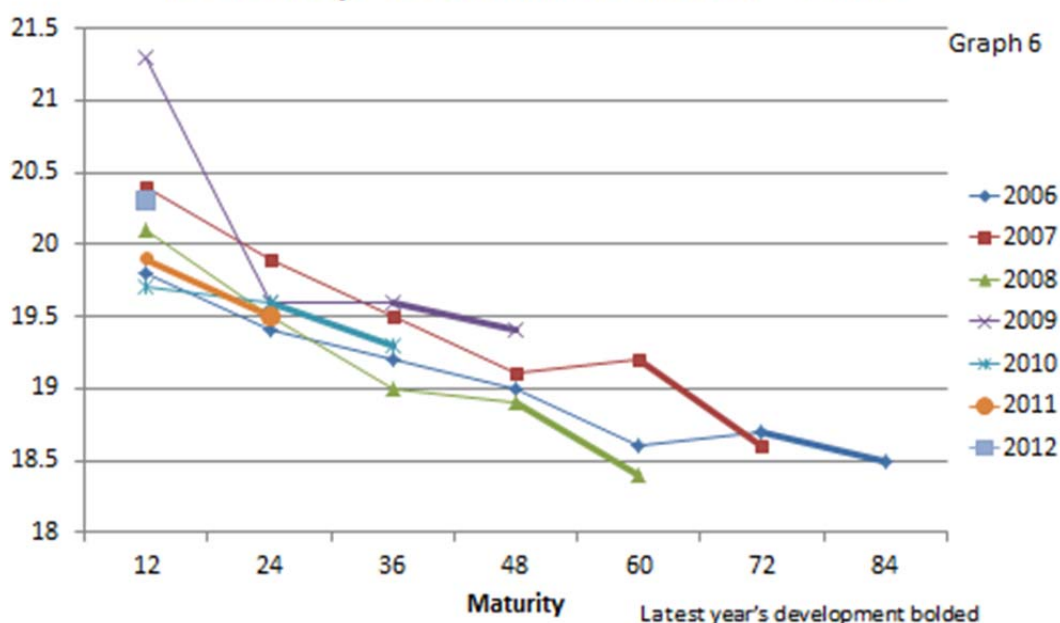
Longer Term Medical Loss Ratio Trend Excluding 2009



- 3) **Selection of a provision for loss adjustment expenses.** The loss costs include a provision to account for the cost of settling claims, called loss adjustment expenses. These expenses include both costs that can be allocated directly to individual claims, such as legal expenses and medical exam costs, and costs that cannot be allocated, such as salaries for claim adjusters. NCCI separately develops ultimate losses and ultimate adjustment expenses on an accident year basis, and then takes the ratio of the two developed ultimate estimates to estimate the ultimate ratio of adjustment expenses to losses. The average of the two latest years' ratios is then selected as the countrywide provision for loss adjustment expenses (LAE).

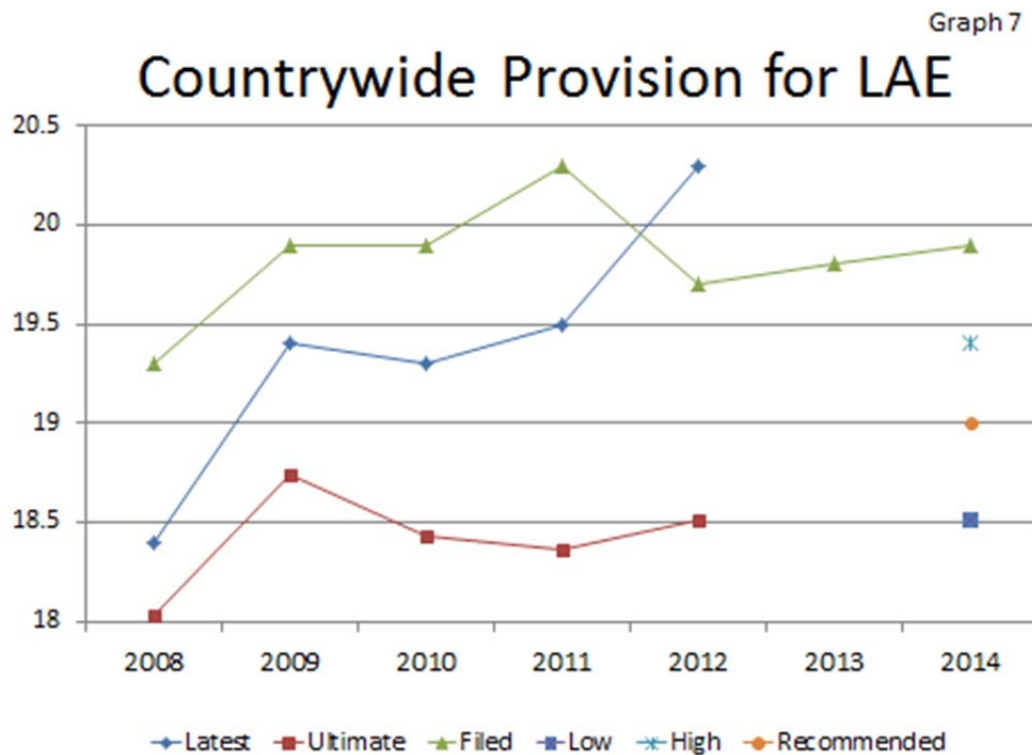
This appears at first to be a reasonable approach; however, NCCI's estimates of the ratio of ultimate LAE to ultimate losses changes over time in a consistently downward direction. For example, NCCI's estimate of the ratio for accident year 2008 used in filings effective in 2010 was 20.1%. That same accident year 2008 ratio presented in filings effective in 2011 was 19.5%, and the current estimate of the 2008 accident year LAE ratio is just 18.4% of losses. Other years show a similar pattern, as seen on graph 6 (2008 is the green line on graph 6).

Accident Year "Developed" LAE Ratios Develop Downward over Time



The result is that NCCI has consistently overestimated the ratio of LAE to losses in its filings. The selected countrywide provision for 2014 is the average of the current 2011 and 2012 values, that is an average of the gold circle at 24 months (2011) and the grey box at 12 months in Graph 6 (2012) = 19.9%.

Graph 7 shows the filed countrywide provision for LAE from 2008 through 2014 (green line) along with the NCCI's current estimate of the actual LAE provision (blue line). With the exception of the 2012 accident year, actual experience is already well below the filed provisions for every year. Our estimate of the *ultimate* LAE to loss ratio (red line) reflects expected additional downward development based on the changes observed in the ratios in the NCCI filings over time. Our best estimate of the indicated countrywide provision for LAE for the 2014 policy year is 18.5%. An alternate potential selection, without relying on the assumption that the LAE ratios will continue to develop as they have in the past, at the very least excludes the accident year 2012 ratio from the calculation. The LAE ratio has never exceeded 20% after the first observation, indicating that any selection that relies on a first observation over 20% is biased upward. The average of the NCCI's current estimates for 2010 and 2011 is 19.4%. This estimate represents the high end of our range of reasonable estimates. It is unreasonable to expect that the 2014 LAE ratio will be 19.9%, as filed.



After adjusting for Missouri-specific defense and cost containment ratios and for the inclusion of MEM experience, we conclude that the range of reasonable estimates of the LAE ratio for 2014 in Missouri is from 17.5% to 18.4% (Exhibit B), and we recommend a provision of 18.0%.

- 4) **Allocation of loss costs to individual classes:** The NCCI's methodology for distributing the overall indication to the various classes is well documented and well supported. We concur with the methodology and did not find any exceptions in this filing. Loss costs changes for individual classes in this filing range from -12% to +35%.

There is one noteworthy change to the allocations: In a prior filing, but also effective January 1, 2014, NCCI filed for a change in the Missouri Contracting Classification Premium Adjustment Program (CCPAP). The CCPAP provides a discount to contracting employers that pay more than the weekly average wage. The average discount is offset by a gross up factor applied to the loss costs for contracting classes. The change effective January 1, 2014, was mandated by law and reverted the Missouri CCPAP to the prior (1999) NCCI program. The effect was an increase to the average discount under the program, which is then offset by an increase to the gross up

factor from 1.078 to 1.094. Thus, the loss costs for contracting employers that do not qualify for the CCPAP discount will increase by an additional 1.8%, over and above the effect of all of the other changes.

We did not review NCCI's calculation of the effect of changes to the U.S. Longshore and Harbor Workers' Compensation Act.

SAS review of NCCI's calculation of the effect of SB1: SB1 shifts a substantial portion of benefits previously covered by the State Second Injury Fund (SIF) back to employers, and therefore back into insurance costs. NCCI estimates that one section of the bill will have a significant financial impact on Missouri loss costs:

- **Section 287.220(3)** closes the SIF for permanent partial disability claims and restricts eligibility for SIF benefits for certain permanent total disability claims arising from accidents after January 1, 2014. The NCCI estimates that the effect of these provisions will be an increase of 12.5% to indemnity losses, with no effect on medical costs, for an overall increase of 4.6% to insured losses. The primary driver is the restriction on permanent total claims, where insured losses are expected to increase by nearly 300%. Offsetting the increase to losses, NCCI has assumed the effect on claims handling costs will be minimal, reducing the effect on losses and adjustment expenses combined to 3.8%. We have reviewed NCCI's calculations and concur with their conclusions.

There are numerous other provisions with SB1 that may have an effect on Missouri loss costs. NCCI has judged them to be either not quantifiable or of minimal impact. Any actual changes in loss costs due to the remaining provisions of SB1 will be realized through future loss cost experience. We concur with NCCI's judgment.

Exclusion of assigned risk experience and inclusion of MEM adjustment experience: At our request, the NCCI calculated that excluding assigned risk experience would have no effect on the indicated loss cost change. Missouri Employers Mutual experience is not included in the NCCI's calculations. MEM's adjustment expense ratio is substantially lower than the ratio for the rest of the insurance industry in Missouri. Including MEM's expense experience in the calculation of the Missouri LAE ratio reduces the ratio from 19.6% to 18.8%, resulting in a reduction in the indicated loss cost change from 11.6% to 10.9% (Exhibit B).

Introduction

Select Actuarial Services has prepared this report for the Missouri Department of Insurance. The specific objectives of this report are to review the loss costs filed by the National Council on Compensation Insurance to be effective January 1, 2014; to recommend changes as appropriate, and to calculate the indicated loss cost change taking into account any recommended changes along with the effect of excluding assigned risk experience and including Missouri Employers Mutual adjustment expense experience in the filing.

This report is an actuarial analysis of data, conditions, and practices communicated as of October 3, 2013, to Select Actuarial Services as described in the section entitled "Considerations." While we believe these communications to be reliable, we have not attempted to audit the information and cannot guarantee the accuracy of any information supplied. However, the NCCI's calculations have been reviewed for reasonableness and consistency with filings in other states. The estimates in this report are based upon appropriate actuarial assumptions and procedures. Select Actuarial Services assumes no responsibility for any loss or damage that might arise from the use of or reliance upon this report other than for the purposes set forth herein.

This report was prepared for the use of and is only to be relied upon by the Missouri Department of Insurance. If this report is provided to any other party, the report must be provided in its entirety. We recommend that any such party have its own actuary review this report to ensure that the party understands the assumptions and uncertainties inherent in our estimates and those of the NCCI.

Mary Frances Miller is a Fellow of the Casualty Actuarial Society and a Member of the American Academy of Actuaries. She meets the Qualification Standards of the American Academy of Actuaries to render property/casualty actuarial opinions.

Overview of Filing

We show some of the key results in the NCCI loss cost filing in the following tables and paragraphs, along with key factors selected by NCCI in the calculation of the indicated change in loss costs.

The overall filed +11.6% change in loss costs has the following effects by industry group:

Industry Group	Loss Cost Change	Missouri Exposure Distribution ¹
Manufacturing	+8.3%	10.8%
Contracting	+13.4%	5.5%
Office & Clerical	+9.1%	59.1%
Goods & Services	+12.5%	19.6%
Miscellaneous	+13.7%	4.9%
Total	+11.6%	100%

Of the top twenty classifications (based on premium), the largest changes in classification loss costs are:

Large Classes with Loss Cost Increase >15%			
Class	Class Description	Size Rank based on Premium ²	Loss Cost Change
7229	Long Haul Trucking	1	+16.1%
7228	Short Haul Trucking	4	+15.7%
8742	Outside Sales	5	+16.7%
5645	Carpentry – detached dwellings	6	+20.2%
8829	Convalescent or Nursing Homes	10	+18.8%

¹ Exposure distribution based on 7/1/10-11 payroll

² Rank based on 7/1/10-11 payroll x 1/1/2014 proposed loss cost

Large Classes with Loss Cost Increase >15%

Class	Class Description	Size Rank based on Premium ³	Loss Cost Change
8833	Hospital Professionals	11	+17.4%
5551	Roofing	13	+22.3%
8232	Lumberyard – new materials	15	+15.3%
5537	HVAC	18	+19.1%

Large Classes with Loss Cost Change Less than +5.0%

Class	Class Description	Size Rank based on Premium ⁴	Loss Cost Change
8810	Clerical NOC	2	+0.0%

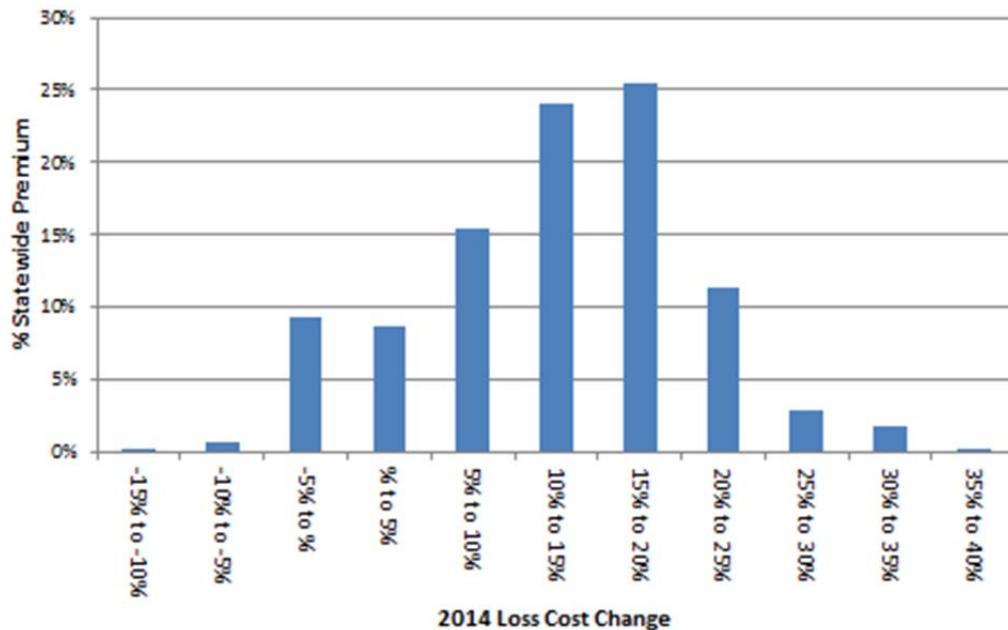
Distribution of loss costs by size of change: As shown in the chart on the next page, the proposed loss cost changes result in increases between 15% and 20% for 25.5% of statewide premium, and an increase between 10% and 15% for 24.1% of statewide premium. 10% of statewide premium will see a decrease, and 4.8% of statewide premium will experience an increase in excess of 25%.

³ Rank based on 7/1/10-11 payroll x 1/1/2014 proposed loss cost

⁴ Rank based on 7/1/10-11 payroll x 1/1/2014 proposed loss cost

Graph 8

Missouri 2014 Loss Cost Changes



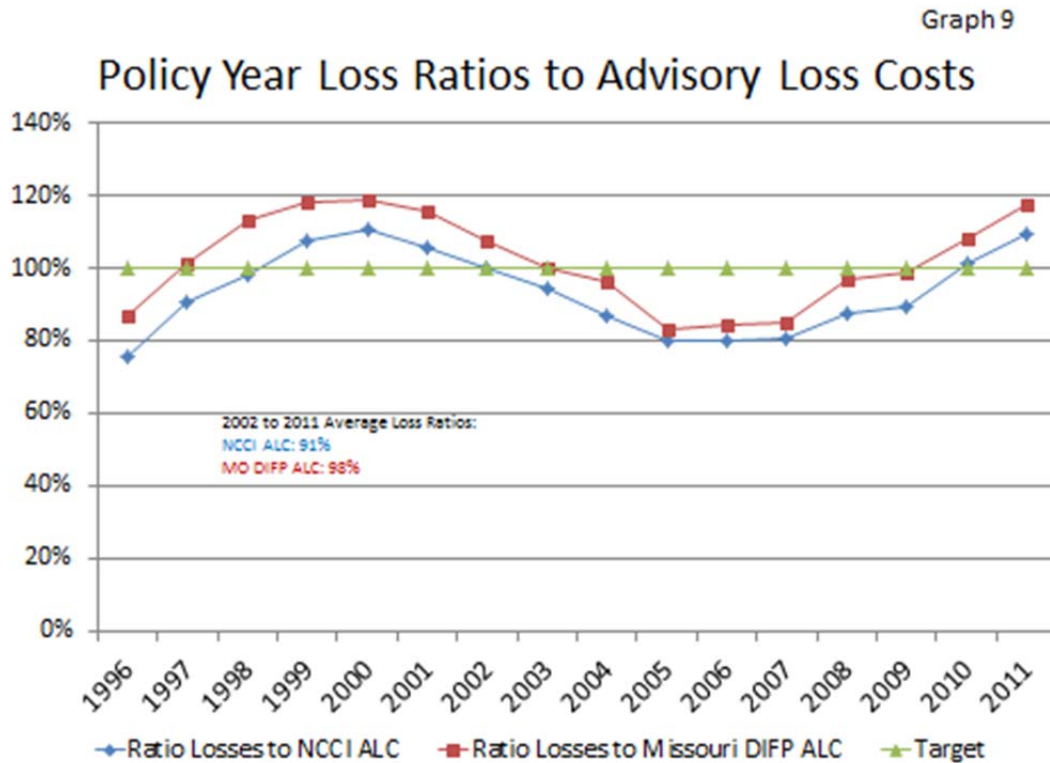
Over an extended period of time, the DIFP reviewer's recommended loss cost change has generated lower overall loss costs than the NCCI filed loss costs, in part due to the lower expense load that results when MEM experience is taken into account in determining the provision for LAE. The graph below shows a retrospective test of advisory loss costs. It compares Missouri statewide ultimate voluntary losses by policy year to those anticipated by:

- NCCI advisory loss costs (blue line)
- NCCI advisory loss costs as adjusted by Missouri DIFP reviewers (red line)

When the advisory loss cost ratio is higher than the 100% target, the advisory loss costs were lower than needed to cover the actual losses. Loss cost ratios under 100% occur in years where the advisory loss costs were higher than the ultimate losses. Because loss cost levels for any particular policy year are necessarily based on experience for policy years three and four years earlier, the results tend to be somewhat cyclic. Because the DIFP reviewer's recommended loss cost change has generated lower overall loss costs than the NCCI filed loss costs, the DIFP reviewer's recommended loss costs result in consistently higher loss ratios compared to the NCCI ALC.

In 9 of the last 16 years, the Missouri DIFP ALC was closer to the target than the NCCI ALC. Over the last ten years, the Missouri DIFP ALC loss ratio has averaged 98%, while the NCCI ALC loss ratio has averaged 91%. Both

overestimated the actual losses (loss ratios under 100%) for policy years 2003 through 2009, and both underestimated the actual losses for policy years 2010 and 2011 (loss ratios over 100%).



Significant NCCI factors: NCCI's selections for key factors in the determination of the advisory loss costs are shown in the tables below. All of the changes from the 2013 to 2014 filings are minor:

NCCI Factors Applied to Most Recent Policy Year			
	2013 Filing	2014 Filing	% Change
Premium Development Factor	0.996	1.000	+0.4%
Paid Loss Development Factor – Indemnity	3.349	3.445	+2.9%
Incurred Loss Development Factor – Indemnity	1.229	1.263	+2.8%
Paid Loss Development Factor – Medical	1.630	1.613	-1.0%
Incurred Loss Development Factor – Medical	1.109	1.114	+0.5%
Indemnity Trend Factor	0.885	0.885	0.0%
Medical Trend Factor	1.015	1.015	0.0%
Loss Adjustment Expense Factor	1.206	1.196	-0.8%
Excess Loss Loading	1.025	1.026	+0.1%

NCCI Factors Applied to Penultimate Policy Year			
	2013 Filing	2014 Filing	% Change
Premium Development Factor	1.001	0.999	-0.2%
Paid Loss Development Factor – Indemnity	1.866	1.891	+1.3%
Incurred Loss Development Factor – Indemnity	1.110	1.133	+2.1%
Paid Loss Development Factor – Medical	1.334	1.311	-1.7%
Incurred Loss Development Factor – Medical	1.066	1.065	-0.1%
Indemnity Trend Factor	0.849	0.849	0.0%
Medical Trend Factor	1.020	1.020	0.0%
Loss Adjustment Expense Factor	1.206	1.196	-0.8%
Excess Loss Loading	1.025	1.026	+0.1%

Definitions

The following definitions may be of assistance to the reader:

Accident Year: All of the events with occurrence dates during a particular calendar year make up the corresponding accident year. The dollars associated with those events total the accident year's losses, even though they may be paid long after the end of the year. Losses are grouped by accident year for some of the NCCI's calculations.

Policy Year: All of the policies written during a particular calendar year and all of the events associated with those policies make up the corresponding policy year. Since a policy written on January 1 expires December 31 of the same year, but a policy written on December 31 does not expire until the end of the following year, accidents associated with a single policy year occur over the course of two calendar years. Experience from the two most recent complete policy years (2010 and 2011) makes up the bulk of the NCCI's calculation of the indicated loss cost change for this filing.

Ultimate Losses: The total amount that will eventually be paid on all losses for a particular accident year or policy year.

Paid Losses: Dollars paid as of the latest available evaluation on losses incurred through the latest available evaluation.

Case Reserves: Reserves established on individual claims by the claims adjusters, as of the latest available evaluation. The case reserve plus the amount paid to date represents the adjuster's best estimate of the ultimate value of a particular claim.

Incurred Losses: Paid losses plus case reserves as of the latest available evaluation, sometimes referred to by the NCCI as paid+case.

Loss Development: The change in the paid losses or the incurred losses over time. As more information is provided and claims settle, individual claim estimates get closer and closer to the ultimate value of the claims. The increase in the total incurred losses through time is the incurred loss development. Similarly, as losses are paid out over time, the increase in total paid losses is the paid loss development.

Actuarial Central Estimate: An estimate that represents an expected value over the range of reasonably possible outcomes. Such a range of reasonably possible outcomes may not include all conceivable outcomes,

as, for example, it would not include conceivable extreme events where the contribution of such events to an expected value estimate is not reliably measurable. The estimates of ultimate losses in the NCCI's filings are actuarial central estimates.

Exhibits

Exhibit A	Development of Recommended LAE Provision
Exhibit B	Inclusion of MEM and Overall Indications
Exhibit C	Calculation of Historical Loss Ratios

NCCI Missouri Filing: Development of Accident Year Ultimate LAE Ratio over time

**Exhibit A
Page 1**

Observed AY Countrywide Ultimate LAE Ratios from NCCI filings										
Maturity										
Year	12	24	36	48	60	72	84	96	108	120
1994										15.3
1995									16	15.8
1996								15.8	15.7	15.6
1997							16.2	16.1	16.2	16
1998						15.7	15.5	15.7	15.9	15.9
1999					15.4	14.9	15.2	15.4	15.3	15.4
2000				15.8	15.3	15.6	15.9	15.8	15.8	16
2001			16.3	16.1	16	16.4	16.5	16.4	16.6	
2002		16.6	16.2	16.6	17.1	17.1	17.1	17.2		16.9
2003	17.1	16.9	17.4	18.2	18.2	18.1	18.2		17.9	17.5
2004	15.9	16.7	17.6	17.7	17.7	17.8		17.4	17	
2005	17.5	19.3	18.8	18.7	18.7		18.3	17.8		
2006	19.8	19.4	19.2	19	18.6	18.7	18.5			
2007	20.4	19.9	19.5	19.1	19.2	18.6				
2008	20.1	19.5	19	18.9	18.4					
2009	21.3	19.6	19.6	19.4						
2010	19.7	19.6	19.3							
2011	19.9	19.5								
2012	20.3									

Age-to-Age Factors										
	12:24	24:36	36:48	48:60	60:72	72:84	84:96	96:108	108:120	120:Ult
1994										
1995									0.988	
1996								0.994	0.994	
1997							0.994	1.006	0.988	
1998						0.987	1.013	1.013	1.000	
1999					0.968	1.020	1.013	0.994	1.007	
2000				0.968	1.020	1.019	0.994	1.000	1.013	
2001			0.988	0.994	1.025	1.006	0.994	1.012		
2002		0.976	1.025	1.030	1.000	1.000	1.006			
2003	0.988	1.030	1.046	1.000	0.995	1.006			0.978	
2004	1.050	1.054	1.006	1.000	1.006			0.977		
2005	1.103	0.974	0.995	1.000			0.973			
2006	0.980	0.990	0.990	0.979	1.005	0.989				
2007	0.975	0.980	0.979	1.005	0.969					
2008	0.970	0.974	0.995	0.974						
2009	0.920	1.000	0.990							
2010	0.995	0.985								
2011	0.980									
Average	0.996	0.996	1.001	0.994	0.998	1.004	0.998	0.999	0.995	
Last 3	0.965	0.986	0.988	0.986	0.993	1.000	0.992	0.996	0.999	
Cum L3	0.912	0.942	0.955	0.966	0.980	0.987	0.986	0.995	0.999	1.000

Estimated Ultimate Countrywide LAE Ratios

Exhibit A
Page 2

Accident

Year	Current	Factor	Ultimate
1994	15.3	1.000	15.3
1995	15.8	1.000	15.8
1996	15.6	1.000	15.6
1997	16.0	1.000	16.0
1998	15.9	1.000	15.9
1999	15.4	1.000	15.4
2000	16.0	1.000	16.0
2001	16.6	1.000	16.6
2002	16.9	1.000	16.9
2003	17.5	1.000	17.5
2004	17.0	0.999	17.0
2005	17.8	0.995	17.7
2006	18.5	0.986	18.2
2007	18.6	0.987	18.4
2008	18.4	0.980	18.0
2009	19.4	0.966	18.7
2010	19.3	0.955	18.4
2011	19.5	0.942	18.4
2012	20.3	0.912	18.5

		SAS Recommendations							Recommended Including MEM
		Excluding MEM	MEM	Including MEM	Low Estimate Excluding MEM	Low Estimate Including MEM	High Estimate Excluding MEM	High Estimate Including MEM	
1	3-Year Missouri Paid Losses	1,196,243	196,883	1,393,126					
2	3-Year Missouri Paid DCCE	145,253	12,833	158,086					
3	DCCE to Paid Ratio	12.1%	6.5%	11.3%					
4	3-Year Countrywide Paid Losses	68,276,797	196,883	68,473,680					
5	3-Year Countrywide Paid DCCE	7,882,729	12,833	7,895,562					
6	DCCE to Paid Ratio	11.5%	6.5%	11.5%					
7	Indicated Missouri Differential	1.052		0.984					
8	NCCI Selected Countrywide DCCE Provision	12.7%		12.7%					
9	NCCI Selected Missouri DCCE Provision	13.4%		12.5%					
10	NCCI Selected Countrywide AOE Provision	7.2%		7.2%					
11	NCCI Selected Countrywide LAE Provision	19.9%		19.9%	18.5%	18.5%	19.4%	19.4%	19.0%
12	Missouri LAE Provision before SB1	20.6%		19.7%	19.1%	18.3%	20.0%	19.2%	18.8%
13	Effect of SB1 on Losses	4.6%		4.6%	4.6%	4.6%	4.6%	4.6%	4.6%
14	Indicated Missouri LAE Provision after SB1	19.7%		18.8%	18.3%	17.5%	19.2%	18.4%	18.0%
15	Filed Missouri LAE Provision after SB1	19.6%							
16	Loss Cost Indication prior to change in LAE	12.5%							
17	LAE Provision effective 1/1/2013	20.6%							
18	Selected LAE Provision effective 1/1/2014	19.6%		18.8%	18.3%	17.5%	19.2%	18.4%	18.0%
19	Indicated Loss Cost Change effective 1/1/2014	11.6%		10.9%	10.4%	9.7%	11.2%	10.4%	10.1%

Rows 1, 2, 4, 5 - Excluding MEM from NCCI filing; MEM provided by Missouri DOI

Row 3 = Row 2 / Row 1

Row 6 = Row 5 / Row 4

Row 7 = Row 3 / Row 6

Rows 8, 10, 13, 15 - from NCCI filing

Row 9 = Row 7 * Row 8

Row 11 = Row 8 + Row 10; SAS from Exhibit A

Row 12 = Row 9 + Row 10; SAS = NCCI Row 12 / NCCI Row 11 * SAS Row 11

Row 14 = Row 12 / (1 + Row 13)

Rows 15, 16, 17 - from NCCI filing

Row 18 = Row 14 except NCCI filing = Row 15

Row 19 = (1 + Row 16) * (1 + Row 18) / (1 + Row 17) - 1

(A) Policy Year	(B) Voluntary Premium (ALC)	(C) Premium Development Factor	(D) Estimated Ultimate Premium	(E) Voluntary Paid + Case Losses Indemnity	(F) Medical	(G) Loss Development Factors Paid + Case Losses Indemnity	(H) Medical	(I) LAE Factor	(J) Excess Provision	(K) Estimated Ultimate Losses and LAE Indemnity	(L) Medical
1996	399,512	1.000	399,512	135,617	113,766	1.001	1.009	1.171	1.026	163,147	137,954
1997	408,635	1.000	408,635	154,010	147,410	1.000	1.009	1.195	1.026	188,893	182,426
1998	440,658	1.000	440,658	192,024	164,030	0.999	1.008	1.182	1.026	232,562	200,448
1999	420,729	1.000	420,729	197,319	176,744	0.999	1.007	1.177	1.026	237,961	214,855
2000	433,041	1.000	433,041	206,817	192,205	1.003	1.010	1.161	1.026	247,192	231,331
2001	467,683	1.000	467,683	218,745	199,472	1.002	1.012	1.141	1.026	256,658	236,380
2002	466,191	1.000	466,191	200,272	193,709	1.001	1.013	1.143	1.026	235,030	230,053
2003	525,996	1.000	525,996	208,016	209,582	1.001	1.014	1.151	1.026	245,888	250,957
2004	571,706	1.000	571,706	195,773	215,606	1.003	1.017	1.165	1.026	234,698	262,082
2005	604,157	1.000	604,157	173,669	219,628	1.003	1.020	1.184	1.026	211,670	272,222
2006	644,341	1.000	644,341	177,197	235,875	1.004	1.024	1.201	1.026	219,263	297,686
2007	705,731	1.000	705,731	194,861	254,444	1.010	1.034	1.201	1.026	242,592	324,297
2008	614,426	1.000	614,426	173,583	255,287	1.014	1.048	1.180	1.026	213,179	324,035
2009	548,472	1.000	548,472	159,152	219,378	1.034	1.084	1.191	1.026	201,088	290,586
2010	561,694	0.999	561,132	162,698	262,970	1.045	1.133	1.185	1.026	206,782	362,367
2011	541,480	1.000	541,480	147,448	257,396	1.115	1.263	1.180	1.026	199,072	393,644

(A) Policy Year	(M) Missouri DIFP Reviewer Relativity to NCCI ALC	(N) NCCI ALC	(O) Missouri Statewide Loss & LAE Ratio Missouri DIFP ALC
1996	0.870	75%	87%
1997	0.899	91%	101%
1998	0.870	98%	113%
1999	0.911	108%	118%
2000	0.929	111%	119%
2001	0.910	105%	116%
2002	0.928	100%	108%
2003	0.946	94%	100%
2004	0.902	87%	96%
2005	0.967	80%	83%
2006	0.948	80%	85%
2007	0.946	80%	85%
2008	0.900	87%	97%
2009	0.909	90%	99%
2010	0.937	101%	108%
2011	0.930	109%	118%
2012	0.961		
2013	0.979		
2014	0.987		

2002-2011 Average Loss & LAE Ratio to Advisory Loss Costs:

Average Weighted Average

NCCI ALC	91%	90%
Missouri DIFP ALC	98%	97%

(B) = Page 2, Column (D)

(C),(G),(H),(J) - from NCCI filing

(D) = (B) * (C)

(E) = Page 2, Column (I)

(F) = Page 2, Column (J)

(I) = Page 2, Column (V)

(K) = (E) * (G) * (I) * (J)

(L) = (F) * (H) * (I) * (J)

(M) from prior actuarial report for 2013 and prior; calculated for 2014 at 1.101 / 1.116

(N) = [(K) + (L)] / (D)

(O) = (N) / (M)

(A) Policy Year	(B) Statewide Premium (ALC)	(C) Assigned Risk Premium	(D) Voluntary Premium	(E) Statewide Paid + Case Losses		(F) Assigned Risk Paid + Case Losses		(G) Statewide Paid + Case Losses		(H) Assigned Risk Paid + Case Losses		(I) Voluntary Paid + Case Losses		(J) Statewide Paid + Case Losses	
				Indemnity	Medical	Indemnity	Medical	Indemnity	Medical	Indemnity	Medical	Indemnity	Medical	Indemnity	Medical
1996	425,050	25,538	399,512	150,681	130,311	15,064	16,545	135,617	113,766						
1997	423,987	15,352	408,635	160,353	152,697	6,343	5,286	154,010	147,410						
1998	448,356	7,698	440,658	197,671	169,407	5,648	5,377	192,024	164,030						
1999	426,151	5,422	420,729	200,825	179,351	3,505	2,607	197,319	176,744						
2000	439,469	6,428	433,041	212,847	198,967	6,029	6,762	206,817	192,205						
2001	481,042	13,359	467,683	227,676	206,979	8,930	7,507	218,745	199,472						
2002	491,219	25,028	466,191	213,914	205,684	13,642	11,976	200,272	193,709						
2003	563,905	37,909	525,996	229,234	233,291	21,219	23,709	208,016	209,582						
2004	608,942	37,236	571,706	211,314	230,481	15,541	14,875	195,773	215,606						
2005	632,735	28,578	604,157	185,098	238,170	11,429	18,543	173,669	219,628						
2006	662,153	17,812	644,341	183,572	244,986	6,374	9,111	177,197	235,875						
2007	719,063	13,332	705,731	200,626	264,139	5,765	9,695	194,861	254,444						
2008	624,016	9,590	614,426	177,999	267,903	4,416	12,615	173,583	255,287						
2009	555,999	7,527	548,472	161,297	223,432	2,145	4,054	159,152	219,378						
2010	568,152	6,458	561,694	164,253	265,686	1,555	2,716	162,698	262,970						
2011	552,398	10,918	541,480	149,433	264,397	1,985	7,001	147,448	257,396						

(K) Calendar Year	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(T)	(U)	(V)
	Missouri State Page Direct Incurred Loss			Missouri State Page Direct DCC Incurred			Voluntary Ratio DCC to Loss	Policy Year	Estimated Voluntary DCC Ratio	Countrywide A&O Ratio	Voluntary LAE Factor
	Assigned Statewide	Assigned Risk	Assigned Voluntary	Assigned Statewide	Assigned Risk	Assigned Voluntary					
1995	373,004	5,269	367,735	30,590	324	30,266	8.2%				
1996	284,523	30,921	253,602	32,817	2,660	30,157	11.9%	1996	9.7%	7.4%	1.171
1997	315,499	21,340	294,159	36,971	674	36,297	12.3%	1997	12.1%	7.4%	1.195
1998	334,418	11,546	322,872	31,105	1,069	30,036	9.3%	1998	10.8%	7.4%	1.182
1999	398,635	8,471	390,164	43,561	522	43,039	11.0%	1999	10.2%	7.4%	1.177
2000	491,332	9,372	481,960	34,649	1,509	33,140	6.9%	2000	8.7%	7.4%	1.161
2001	522,946	15,673	507,273	34,796	1,457	33,339	6.6%	2001	6.7%	7.4%	1.141
2002	565,430	40,229	525,201	41,628	4,169	37,459	7.1%	2002	6.9%	7.4%	1.143
2003	592,204	45,832	546,372	49,526	5,592	43,934	8.0%	2003	7.6%	7.5%	1.151
2004	589,472	43,565	545,907	63,307	3,524	59,783	11.0%	2004	9.5%	7.0%	1.165
2005	592,988	47,047	545,941	64,242	4,606	59,636	10.9%	2005	10.9%	7.5%	1.184
2006	542,562	28,909	513,653	74,582	3,638	70,944	13.8%	2006	12.3%	7.8%	1.201
2007	535,272	20,520	514,752	58,685	2,736	55,949	10.9%	2007	12.3%	7.8%	1.201
2008	556,888	16,281	540,607	61,091	1,514	59,577	11.0%	2008	10.9%	7.1%	1.180
2009	411,268	-4,135	415,403	49,379	-12	49,391	11.9%	2009	11.4%	7.7%	1.191
2010	462,853	1,515	461,338	49,638	482	49,156	10.7%	2010	11.2%	7.3%	1.185
2011	445,367	5,901	439,466	50,685	583	50,102	11.4%	2011	11.0%	7.0%	1.180
2012	460,211	14,267	445,944	54,497	1,578	52,919	11.9%	2012	11.6%	7.4%	1.190

(B),(C) - from prior actuarial report for 2009 and prior; 2010 and 2011 from NCCI filing

(D) = (B) - (C)

(E),(F),(G),(H) - calculated from prior actuarial report + latest observed age-to-age development for 2009 and prior; 2010 and 2011 from NCCI filing

(I) = (E) - (G)

(J) = (F) - (H)

(L),(M),(O),(P) - from prior actuarial report for 2011 and prior; 2012 provided by NCCI

(N) = (L) - (M)

(Q) = (O) - (P)

(R) = (Q) / (N)

(T) = 2-year weighted average of (R)

(U) - current NCCI calculations for 2003-2012; 2002 and prior = average of 2003 through 2012

(V) = (T) + (U)

Appendix

Appendix A

Additional Information Provided by NCCI



National Council on Compensation Insurance (NCCI)
Missouri WC Loss Cost Filing
Effective 1/1/2014

Select Actuarial Services

Q1. Would you please update the table on Page 35 of the attached (last year's actuarial review)? And also the triangles on pages 39-42?

Response: Please see the following exhibits.



Missouri - Assigned Risk Data

Data Valued as of 12/31/2012

Policy Year	Premium at NCCI DSR Level	Limited Indemnity Paid + Case Losses	Limited Medical Paid + Case Losses
1996	25,538,126	15,063,976	16,545,412
1997	15,352,242	6,343,446	5,286,400
1998	7,697,608	5,647,862	5,377,118
1999	5,422,324	3,505,437	2,606,812
2000	6,427,926	6,029,391	6,761,670
2001	13,358,851	8,930,435	7,507,185
2002	25,028,068	13,641,754	11,975,729
2003	37,908,835	21,218,526	23,709,300
2004	37,236,138	15,540,757	14,875,377
2005	28,577,696	11,428,734	18,542,531
2006	17,811,751	6,374,460	9,110,883
2007	13,332,123	5,764,952	9,695,205
2008	9,590,381	4,416,041	12,615,076
2009	7,526,524	2,144,899	4,054,337
2010	6,457,864	1,554,504	2,716,120
2011	10,918,446	1,985,472	7,000,832



MISSOURI
Policy Year - Private Carrier + State Fund - Limited Statewide
Indemnity Paid Development Factors

PY	Half/1	1/2	2/3	3/4	4/5	5/6	6/7	7/8	8/9	9/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19
1984															1.004	1.006	1.002	1.001	1.003
1985														1.004	1.004	1.001	1.003	1.003	1.004
1986													1.003	1.011	1.005	1.004	1.003	1.002	1.002
1987												1.007	1.005	1.006	1.002	1.002	1.002	1.000	1.002
1988											1.006	1.003	1.005	1.002	1.002	1.007	1.002	1.002	1.002
1989										1.011	1.006	1.007	1.005	1.003	1.005	1.004	1.004	1.002	1.001
1990								1.010	1.009	1.004	1.003	1.003	1.003	1.002	1.002	1.003	1.002	1.001	
1991							1.012	1.010	1.007	1.007	1.004	1.004	1.005	1.002	1.003	1.003	1.002	1.003	
1992						1.015	1.013	1.015	1.009	1.004	1.004	1.002	1.003	1.003	1.003	1.003	1.003	1.004	1.004
1993					1.034	1.030	1.014	1.013	1.009	1.006	1.006	1.004	1.003	1.003	1.003	1.005	1.005	1.002	1.004
1994				1.055	1.040	1.030	1.014	1.012	1.006	1.008	1.007	1.003	1.006	1.004	1.005	1.004	1.004		
1995			1.107	1.059	1.035	1.020	1.014	1.010	1.008	1.008	1.006	1.006	1.005	1.008	1.004	1.007			
1996		1.269	1.135	1.075	1.039	1.020	1.016	1.012	1.011	1.007	1.006	1.008	1.005	1.004	1.005				
1997	1.732	1.285	1.117	1.066	1.040	1.023	1.017	1.009	1.008	1.006	1.005	1.006	1.004	1.004					
1998	4.217	1.765	1.309	1.126	1.076	1.047	1.031	1.022	1.013	1.011	1.007	1.007	1.007	1.005					
1999	4.383	1.830	1.283	1.124	1.063	1.055	1.028	1.028	1.019	1.013	1.015	1.006	1.006						
2000	4.521	1.830	1.287	1.118	1.072	1.047	1.039	1.020	1.011	1.008	1.008	1.003							
2001	4.700	1.882	1.286	1.123	1.061	1.052	1.034	1.024	1.010	1.010	1.011								
2002	4.796	1.838	1.260	1.104	1.073	1.044	1.027	1.028	1.018	1.008									
2003	5.627	1.848	1.263	1.120	1.069	1.057	1.034	1.024	1.016										
2004	5.157	1.769	1.254	1.132	1.071	1.050	1.032	1.021											
2005	4.768	1.757	1.287	1.142	1.081	1.045	1.036												
2006	4.976	1.792	1.268	1.117	1.068	1.040													
2007	5.429	1.825	1.271	1.125	1.078														
2008	5.036	1.793	1.247	1.159															
2009	4.818	1.799	1.293																
2010	4.996	1.873																	
2011	5.163																		



MISSOURI
Policy Year - Private Carrier + State Fund - Limited Statewide
Medical Paid Development Factors

PY	Half/1	1/2	2/3	3/4	4/5	5/6	6/7	7/8	8/9	9/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19
1984															1.002	1.001	1.001	1.002	1.002
1985														1.001	1.005	1.002	1.001	1.003	1.004
1986													1.002	1.001	1.001	1.001	1.002	1.002	1.003
1987												1.010	1.008	1.005	1.003	1.004	1.010	1.007	1.006
1988											1.002	1.002	1.002	1.003	1.003	1.002	1.002	1.002	1.004
1989										1.003	1.001	1.006	1.001	1.002	1.005	1.003	1.003	1.002	1.002
1990								1.002	1.003	1.003	1.002	1.001	1.001	1.001	1.002	1.003	0.999	1.001	1.002
1991							1.003	1.002	1.001	1.002	1.001	1.002	1.001	1.001	1.001	1.001	1.002	1.002	1.002
1992							1.005	1.001	1.002	1.002	1.001	1.001	1.001	1.001	1.001	1.004	1.001	1.002	1.001
1993						1.011	1.014	1.006	1.006	1.004	1.003	1.003	1.003	1.003	1.006	1.004	1.003	1.003	1.003
1994					1.011	1.010	1.006	1.003	1.004	1.005	1.007	1.005	1.004	1.004	1.004	1.004	1.008	1.004	
1995				1.020	1.006	1.008	1.008	1.021	1.003	1.007	1.003	1.003	1.002	1.003	1.005	1.005	1.003		
1996			1.053	1.021	1.009	1.001	1.003	1.002	1.003	1.007	1.001	1.003	1.002	1.006	1.004	1.000			
1997		1.211	1.057	1.026	1.015	1.014	1.009	1.008	1.008	1.013	1.007	1.004	1.007	1.005	1.006				
1998	3.410	1.238	1.076	1.035	1.021	1.014	1.011	1.011	1.007	1.008	1.005	1.011	1.012	1.008					
1999	4.117	1.265	1.057	1.038	1.022	1.023	1.011	1.009	1.008	1.012	1.007	1.008	1.007						
2000	4.297	1.258	1.071	1.045	1.025	1.016	1.011	1.007	1.008	1.012	1.006	1.007							
2001	4.055	1.249	1.067	1.035	1.011	1.011	1.012	1.007	1.004	1.007	1.009								
2002	3.633	1.241	1.066	1.025	1.018	1.014	1.009	1.012	1.010	1.006									
2003	3.952	1.244	1.062	1.027	1.023	1.014	1.015	1.014	1.009										
2004	3.934	1.226	1.066	1.033	1.023	1.010	1.014	1.012											
2005	3.500	1.222	1.068	1.041	1.028	1.025	1.022												
2006	3.777	1.235	1.055	1.032	1.017	1.014													
2007	3.757	1.233	1.062	1.036	1.010														
2008	3.426	1.221	1.064	1.033															
2009	3.707	1.226	1.059																
2010	4.030	1.243																	
2011	3.584																		



MISSOURI
Policy Year - Private Carrier + State Fund - Limited Statewide
Indemnity Paid+Case Development Factors

PY	Half/1	1/2	2/3	3/4	4/5	5/6	6/7	7/8	8/9	9/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19
1984															0.998	1.000	1.001	0.999	1.000
1985														1.002	1.004	1.001	1.006	0.998	1.002
1986													1.003	1.005	1.000	1.002	1.002	1.000	1.000
1987												1.001	1.001	1.001	1.000	1.002	1.002	0.999	0.999
1988											1.000	0.997	1.005	1.003	1.000	1.004	1.000	1.001	0.999
1989										1.004	0.999	1.003	0.999	1.000	1.004	1.001	1.001	0.999	1.000
1990								1.007	1.002	1.002	1.000	1.001	0.998	1.001	1.001	1.002	1.001	1.000	1.000
1991							1.003	1.006	0.996	0.999	1.002	1.002	1.002	0.999	1.000	1.001	1.001	1.001	1.002
1992						1.004	1.002	1.007	0.998	1.005	0.995	1.000	0.999	1.002	1.001	1.002	1.002	1.001	1.001
1993					1.005	1.003	1.001	1.016	1.006	1.001	0.999	1.003	1.001	0.999	0.999	1.001	1.003	1.002	1.002
1994				1.016	1.004	1.011	1.006	1.010	1.002	1.001	0.998	1.002	0.999	1.000	1.001	1.000	1.000	1.000	1.000
1995			1.011	1.009	1.010	1.018	1.001	1.001	1.000	1.002	0.999	1.000	1.001	0.998	1.000	1.000	1.000	1.000	1.000
1996		1.036	1.019	1.008	1.018	1.001	1.005	1.004	1.001	1.000	1.001	1.005	0.996	1.000	1.001				
1997	1.117	1.062	1.025	1.014	1.006	1.002	1.004	0.998	1.001	1.002	1.005	1.001	0.999	0.999					
1998	2.235	1.139	1.091	1.037	1.018	1.015	1.008	0.995	1.000	1.001	1.000	1.002	1.005	1.001					
1999	2.278	1.175	1.068	1.010	1.015	1.017	1.015	0.993	0.998	0.995	1.001	0.999	1.002						
2000	2.423	1.175	1.067	1.024	1.011	1.005	1.004	0.995	1.004	0.998	1.003	1.003							
2001	2.118	1.131	1.050	1.016	1.004	1.010	1.006	1.008	1.002	1.007	0.997								
2002	2.401	1.105	1.041	1.026	0.997	1.002	0.997	1.004	1.006	1.005									
2003	2.358	1.115	1.026	1.034	1.013	1.001	1.016	1.006	1.005										
2004	2.308	1.084	1.035	1.026	1.019	1.014	0.997	1.002											
2005	2.291	1.087	1.049	1.038	1.016	1.016	1.006												
2006	2.509	1.098	1.022	1.027	1.013	1.017													
2007	2.472	1.117	1.045	1.024	1.009														
2008	2.600	1.115	1.041	1.055															
2009	2.274	1.121	1.069																
2010	2.452	1.125																	
2011	2.389																		



MISSOURI
Policy Year - Private Carrier + State Fund - Limited Statewide
Medical Paid+Case Development Factors

PY	Half/1	1/2	2/3	3/4	4/5	5/6	6/7	7/8	8/9	9/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19
1984															1.002	1.000	0.992	1.003	1.000
1985														1.001	1.005	1.003	1.001	1.002	1.007
1986													1.001	1.004	1.000	1.001	1.000	1.005	1.003
1987												1.007	1.001	0.994	1.008	1.003	1.001	1.001	1.009
1988											1.009	0.998	1.004	1.002	1.004	0.999	0.999	1.006	1.012
1989										1.003	0.999	1.011	1.017	1.001	1.002	1.005	1.006	0.998	1.003
1990								0.999	0.995	1.005	1.006	1.012	0.996	1.001	1.000	1.002	1.002	1.001	
1991							0.989	0.999	1.000	0.999	1.000	1.002	1.010	0.999	1.000	1.000	1.000	1.000	0.997
1992							1.000	0.996	1.003	1.002	1.001	1.000	1.001	1.000	0.998	1.003	1.002	1.003	1.002
1993						1.002	1.006	0.997	1.023	1.004	0.999	1.001	1.003	1.006	1.004	1.003	1.000	1.002	1.002
1994					1.015	0.997	1.017	0.996	1.015	0.991	1.002	1.007	1.000	1.001	0.997	0.996	1.001	0.996	
1995				1.010	1.006	1.004	0.989	0.994	1.001	0.999	1.004	0.998	1.003	1.001	1.001	1.004	1.003		
1996		0.996	0.994	0.985	1.017	0.992	1.007	1.000	1.002	1.002	1.005	1.001	0.999	0.991	1.004				
1997	1.069	0.973	1.004	0.990	1.002	1.001	1.010	0.998	1.014	1.002	1.000	1.002	0.994	1.002					
1998	2.076	1.050	1.009	1.008	0.986	1.021	1.006	0.993	1.001	1.008	0.988	1.014	1.008	1.005					
1999	2.294	1.088	1.014	1.003	0.991	1.005	1.003	1.003	1.001	1.002	1.000	1.002	1.000						
2000	2.459	1.060	1.045	1.030	1.004	1.011	1.005	0.997	1.006	1.011	1.002	1.009							
2001	2.310	1.074	1.009	1.001	0.992	1.009	0.989	1.001	1.009	1.001	1.017								
2002	2.276	1.050	1.013	0.997	1.012	1.013	0.997	1.002	1.001	1.008									
2003	2.193	1.047	1.008	0.990	1.017	1.005	1.009	1.001	0.999										
2004	2.342	1.032	1.007	1.010	0.996	0.995	1.005	1.001											
2005	2.318	1.023	1.019	1.011	1.008	0.988	1.002												
2006	2.351	1.029	0.972	0.996	0.997	1.002													
2007	2.344	1.039	1.010	1.001	1.000														
2008	2.085	1.070	1.024	1.010															
2009	2.325	1.044	1.013																
2010	2.607	1.049																	
2011	2.365																		



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Missouri WC Loss Cost Filing
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Q2. What is the indication if you exclude the assigned risk data?

Response: The development factors, trend analysis, excess factor calculations and all other NCCI analysis to produce the aggregate indication in Missouri are based on the statewide data. If we remove the assigned risk data from the experience period year loss ratios and develop, trend and on-level the data as is done in the filing, the produced indication remains +11.6%.



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Q3. Could you please provide me with some background on why you are using paid development in the indications for Missouri? Especially, why use the latest 3 observations when you are using 5 for paid+case (which I would expect to be more stable)

Response: NCCI analyzes the aggregate financial data of all companies writing workers compensation insurance in Missouri in order to select the most actuarially sound loss development projection methodology for use in an individual loss cost filing. The two loss development projection methodologies analyzed in connection with this year's filing were based on paid and paid+case losses. Consistent with past Missouri filings, each of these loss development approaches was utilized in this year's filing.

The analysis and selection of the appropriate number of years of link ratios to use in each of the paid and paid+case ultimate loss projections involves actuarial judgment. Using a relatively shorter term average for paid link ratios is responsive to recent changes in the observed Missouri payment patterns. In previous Missouri filings, a two-year average link ratios for paid were selected for loss development. In this year's filing, we selected a three-year average to decrease the impact of the observed increase in paid loss development factors in the latest diagonal. A longer five-year average for paid+case link ratios was utilized to stabilize the relatively higher degree of volatility that may be present in those factors due to case reserve adjustments over time.



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Q4. Did you consider whether it would be appropriate to make any adjustments for the exceptionally large number of large claims in the latest two policy years? Is two years sufficiently credible for that part of the loss cost?

Response: As part of the ratemaking analysis, NCCI evaluated the impact of the reported large losses in the experience period. Because we recognized the increase in the number and amount of large losses in the experience period, an analysis was performed that removed the development on those reported large losses. After removing the undeveloped large losses from the total losses, the non-large losses were developed separately. We then added back the undeveloped reported large losses to the developed non-large losses to derive an indication. When the exercise is performed on a paid+case basis, the indication decreases. If we apply the same analysis to paid losses, the paid indication increases significantly due to the lack of payments made on the large losses compared to the reported paid+case losses.

The overall large loss adjusted indication was an increase over the filed indication of +11.6%. Based on this additional large loss analysis, NCCI concluded an adjustment to the current large loss methodology was not necessary. Therefore, the previously filed large loss methodology was deemed reasonable and consequently used.