

Underwriting Cycles and Reserve Adequacy

Selection of A Priori Loss Ratios

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Introduction

- Most commonly used methods for reserving –
 - Paid and incurred loss development methods and
 - Paid and incurred Bornhuetter-Ferguson methods
- Loss development methods rely on the selection of development factors
 - Based on own data
 - Supplemented with industry information
- Bornhuetter Ferguson (B-F) method –
 - Also relies on loss development factor selection; but also
 - Selection of A Priori ultimate losses or ultimate loss ratios
- The discussion will involve **CONSIDERATIONS** for selecting A Priori ultimate loss ratios

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Loss Development Methods

- Concerns with development factors
 - Variable and Volatile
 - Uncertainty in future loss development factors
 - Do development factors vary based on where you are in underwriting cycle?
- Loss development methods produce AN indication of ultimate losses
- Uncertainty of estimates often requires use of supplementary methods
 - Often greater uncertainty in more recent years
 - Bornhuetter Ferguson method –
 - Selection of A Priori ultimate losses or ultimate loss ratios

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Traditional Approaches to Selecting A Priori Ultimate Loss Ratios

- Common methods:
 - Pricing loss ratio
 - Historical loss ratios adjusted for rate change and trend
- Reliability / Predictability of the above two methods
 - Are we missing important information?
 - Is there a trend / pattern or just normal variability

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Illustrative Example

- For Discussion Purposes Only
 - Results by company and line of business would vary
 - Alternative assumptions could be made
- Workers Compensation Premium and Losses
 - Based on Schedule P
 - Aggregate Industry Information

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Combined Property Casualty Insurance Industry
Workers' Compensation
Data as of December 31, 2011
Derivation of Net Paid Loss & DCCCE Development Factors

Accident Year	Years of Development									
	1	2	3	4	5	6	7	8	9	10
2002	4,934	11,410	15,332	17,545	19,040	19,934	20,813	21,379	21,844	22,264
2003	4,916	11,173	14,862	17,091	18,602	19,735	20,442	21,086	21,609	
2004	5,199	11,128	14,384	16,321	17,760	18,654	19,389	20,009		
2005	5,300	10,943	14,170	16,260	17,607	18,577	19,320			
2006	5,494	11,088	15,375	17,242	18,062					
2007	5,573	12,217	15,952	16,314	16,939					
2008	5,672	12,272	16,161	16,663						
2009	5,163	11,056	14,748							
2010	5,308	11,572								
2011	5,006									

Accident Year	Years of Development									
	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-ult
2002	2,312	1,344	1,144	1,086	1,047	1,044	1,027	1,022	1,019	
2003	2,272	1,350	1,150	1,098	1,061	1,036	1,032	1,025		
2004	2,141	1,281	1,143	1,088	1,050	1,039	1,032			
2005	2,051	1,291	1,147	1,083	1,051	1,040				
2006	2,105	1,327	1,141	1,083	1,058					
2007	2,192	1,306	1,148	1,089						
2008	2,164	1,317	1,155							
2009	2,170	1,316								
2010	2,181									

Average:	2,178	1,315	1,147	1,086	1,054	1,040	1,030	1,023	1,019	
Ag X-FIL:	2,178	1,315	1,147	1,086	1,054	1,040	1,032			
Wtd Avg:	2,175	1,315	1,147	1,086	1,054	1,040	1,030	1,023	1,019	
Selected:	2,176	1,315	1,147	1,086	1,054	1,040	1,030	1,023	1,019	1,237
Cumulative:	5,193	2,387	1,915	1,563	1,457	1,382	1,329	1,290	1,261	1,237
Logic:	Wtd Avg	Wtd Avg	Wtd Avg	Wtd Avg	Wtd Avg	Wtd Avg	Wtd Avg	Wtd Avg	Wtd Avg	Implicit Tail

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**Combined Property Casualty Insurance Industry
Workers' Compensation
Data as of December 31, 2011
Derivation of Net Incurred Loss & DCCE Development Factors**

Cumulative Net Incurred Loss & DCCE

Accident Year	Years of Development									
	1	2	3	4	5	6	7	8	9	10
2002	12,345	18,372	20,350	21,933	22,539	23,300	23,752	24,138	24,416	24,572
2003	12,877	18,357	20,430	21,490	22,312	23,093	23,527	24,048	24,414	
2004	12,867	17,561	19,621	20,486	21,269	21,991	22,462	22,870		
2005	13,147	17,274	19,171	20,378	21,079	21,792	22,308			
2006	13,415	18,243	20,744	22,064	22,654	23,054	23,686			
2007	13,810	18,243	21,692	23,245	24,151					
2008	13,878	19,418	22,065	23,613						
2009	12,454	17,616	19,931							
2010	12,722	18,059								
2011	13,142									

Net Incurred Loss & DCCE Development Factors

Accident Year	Years of Development									
	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10 - ult
2002	1,488	1,141	1,046	1,032	1,025	1,023	1,017	1,014	1,016	
2003	1,426	1,123	1,052	1,038	1,025	1,016	1,022	1,015		
2004	1,365	1,106	1,055	1,040	1,028	1,026	1,018			
2005	1,214	1,113	1,063	1,024	1,034	1,024				
2006	1,362	1,137	1,063	1,045	1,027					
2007	1,393	1,127	1,072	1,039						
2008	1,399	1,126	1,070							
2009	1,406	1,138								
2010	1,420									
Average:	1,307	1,126	1,060	1,038	1,030	1,023	1,019	1,015	1,016	
Adj.X.N.L.	1,396	1,127	1,061	1,038	1,030	1,023	1,018			
Wtd Avg	1,396	1,126	1,060	1,038	1,030	1,023	1,019	1,015	1,016	
Subtotal:	1,396	1,126	1,060	1,038	1,030	1,023	1,019	1,015	1,016	1,107
Cumulative:	21,121	1,619	1,349	1,272	1,225	1,190	1,164	1,142	1,125	1,107
Logic:	Wtd Avg	Wtd Avg	Wtd Avg	Wtd Avg	Wtd Avg	Wtd Avg	Wtd Avg	Wtd Avg	Wtd Avg	Implicit Tail

Note: Source data provided by SNL Financial.
Implicit Tail based on industry booked losses for 2002.

**Combined Property Casualty Insurance Industry
Workers' Compensation
Data as of December 31, 2011
Loss Development Methods**

Net Paid Loss & DCCE Development Method

Accident Year	Net Earned Premium	Net Paid Loss & DCCE at 12/31/11	Cumulative Paid LDF	Indicated Net Ultimate Loss & DCCE	Indicated Net Ultimate Loss & DCCE Ratio
2003	40,654	21,609	1,261	27,247	67.0%
2004	45,170	20,009	1,290	25,817	57.2%
2005	46,012	19,320	1,329	25,680	55.8%
2006	46,383	20,099	1,382	27,779	59.9%
2007	43,371	19,939	1,457	29,052	67.0%
2008	40,335	18,663	1,583	29,535	73.2%
2009	35,580	14,748	1,815	26,770	75.2%
2010	33,493		11,572	27,621	82.5%
2011	35,438	5,505	5,193	28,583	80.7%
Total	401,604	173,728		275,628	68.6%

Note: Source data provided by SNL Financial.

**Combined Property Casualty Insurance Industry
Workers' Compensation
Data as of December 31, 2011
Loss Development Methods**

Net Incurred Loss & DCCE Development Method

Accident Year	Net Earned Premium	Net Incurred Loss & DCCE at 12/31/11	Cumulative Incurred LDF	Indicated Net Ultimate Loss & DCCE	Indicated Net Ultimate Loss & DCCE Ratio
2003	40,654	24,414	1,125	27,472	67.6%
2004	45,170	22,870	1,142	26,112	57.8%
2005	46,012	22,306	1,164	25,955	56.4%
2006	46,383	23,686	1,190	28,185	60.8%
2007	43,371	24,151	1,225	29,593	68.2%
2008	40,335	23,613	1,272	30,041	74.5%
2009	35,580	19,931	1,349	28,886	75.6%
2010	33,493	18,059	1,519	27,437	81.9%
2011	35,438	13,142	2,121	27,872	78.6%
Total	401,604	217,046		277,095	69.0%

Note: Source data provided by SNL Financial.

Analysis of Loss Development Methods

- Indicating increasing loss ratios in recent accident years
 - Are results really deteriorating?
 - Is something else causing this increase, making the loss development method not as predictive?
- Common next steps
 - Select base period of ultimate losses
 - Ultimate losses selected for accident year 2007 and prior based on development methods
 - Additional Methods utilized for more recent accident years
 - 2008 and subsequent

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Combined Property Casualty Insurance Industry
Workers' Compensation
Data as of December 31, 2011
Summary of Indicated Ultimate Losses

Accident Year	Net Earned Premium	Net Loss & DCCE		Indications of Net Ultimate Loss & DCCE		Selected Net Ultimate Loss & DCCE		Selected Net Ultimate Loss & DCCE Ratio
		Loss Paid to Date	DCCE Incurred to Date	Paid Loss Development	Incurred Loss Development	Loss & DCCE	Logic	
2002	25,188	22,284	24,872	27,543	27,543	27,543	Avg LDFs	78.3%
2003	40,654	21,609	24,414	27,247	27,472	27,359	Avg LDFs	67.3%
2004	45,170	20,009	22,870	25,817	26,112	25,964	Avg LDFs	57.5%
2005	46,012	19,320	22,306	25,690	25,955	25,817	Avg LDFs	56.1%
2006	46,383	20,099	23,696	27,779	28,185	27,982	Avg LDFs	60.3%
2007	43,371	19,939	24,151	29,052	29,593	29,323	Avg LDFs	67.6%
Total	256,757	123,240	142,300	163,119	164,859	163,989		63.9%

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Additional Methods

- Bornhuetter – Ferguson for Accident Years 2008 and subsequent
- Assumptions
 - Loss Development Factors –
 - Same as loss development method
 - A Priori Loss Ratios
 - Scenario 1: Pricing loss ratio
 - Scenario 2: Adjust historical loss ratios for rate change and trend
 - Scenario 3: Adjusted loss ratios reflecting more recent years

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Scenario 1: Pricing Loss Ratio

- Assumptions:
 - The company targets a 65% Loss and DCCE ratio
 - The company believes rate changes and trend will result in overall 65% loss ratio
- Select 65% ultimate loss for more recent accident years for the BF method

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Combined Property Casualty Insurance Industry Workers' Compensation Data as of December 31, 2011 Bornuetter-Ferguson Methods

Net Paid Loss & DCCE Bornuetter-Ferguson Method

Accident Year	A Priori Loss Ratio ¹	Net Earned Premium	A Priori Net Ultimate Loss & DCCE	Unpaid Factor	Indicated Net Ultimate Loss & DCCE	Indicated Net Ultimate Loss & DCCE Ratio
2008	65.0%	40,335	26,218	36.8%	28,314	70.2%
2009	65.0%	35,580	23,127	44.9%	25,134	70.6%
2010	65.0%	33,493	21,771	58.1%	24,222	72.3%
2011	65.0%	35,438	23,035	80.7%	24,103	68.0%
Total		144,847	94,150		101,773	70.3%

Net Incurred Loss & DCCE Bornuetter-Ferguson Method

Accident Year	A Priori Loss Ratio ¹	Net Earned Premium	A Priori Net Ultimate Loss & DCCE	Unreported Factor	Indicated Net Ultimate Loss & DCCE	Indicated Net Ultimate Loss & DCCE Ratio
2008	65.0%	40,335	26,218	21.4%	29,223	72.5%
2009	65.0%	35,580	23,127	25.9%	25,913	72.8%
2010	65.0%	33,493	21,771	34.2%	25,500	76.1%
2011	65.0%	35,438	23,035	52.8%	25,316	71.4%
Total		144,847	94,150		105,953	73.1%

¹ A Priori Loss Ratios calculated based on target pricing loss ratio

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Scenario 1: Pricing Loss Ratio

- Indicated B-F loss ratios higher than A Priori loss ratio for each year: Is this random or a trend?
- Questions:
 - Are the historical ultimate loss ratios consistent with pricing goals?
 - Does it depend on where you are in the underwriting cycle?
 - Is there a trend in loss ratio triangle?

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Loss Ratio Triangles

Net Paid Loss & DCCE Ratio Triangle

	12	24	36	48	60	72	84	96	108	120
2002	14.0%	32.4%	43.6%	49.9%	54.1%	56.7%	59.2%	60.8%	62.1%	63.3%
2003	12.1%	27.5%	36.6%	42.0%	45.8%	48.5%	50.3%	51.9%	53.2%	
2004	11.5%	24.6%	31.6%	36.1%	39.3%	41.3%	42.9%	44.3%		
2005	11.6%	23.8%	30.8%	35.3%	38.3%	40.4%	42.0%			
2006	11.8%	25.0%	33.1%	37.8%	41.0%	43.3%				
2007	12.8%	28.2%	36.8%	42.2%	46.0%					
2008	14.1%	30.4%	40.1%	46.3%						
2009	14.5%	31.5%	41.9%							
2010	15.8%	34.6%								
2011	15.5%									

Net Incurred Loss & DCCE Ratio Triangle

	12	24	36	48	60	72	84	96	108	120
2002	35.1%	52.2%	59.6%	62.4%	64.4%	66.0%	67.5%	68.6%	69.6%	70.7%
2003	31.7%	45.2%	50.3%	52.9%	54.9%	56.3%	57.9%	59.2%	60.1%	
2004	28.5%	38.9%	43.0%	45.4%	47.2%	48.5%	49.7%	50.6%		
2005	28.6%	37.5%	41.7%	44.3%	45.8%	47.4%	48.5%			
2006	28.9%	39.3%	44.7%	47.5%	49.7%	51.1%				
2007	31.8%	44.4%	50.0%	53.0%	55.7%					
2008	34.4%	48.1%	54.7%	58.5%						
2009	35.0%	49.2%	56.0%							
2010	38.0%	53.9%								
2011	37.1%									

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Scenario 2: Adjusted Historical Loss Ratio

- Assumptions:
 - Historical Loss Ratios are predictive of future
 - Requires adjustment for:
 - Rate Changes
 - Trend

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**Combined Property Casualty Insurance Industry
Workers' Compensation
Data as of December 31, 2011
Selection of A Priori Ultimate Loss and DCCE Ratios**

Accident Year	Selected Net Ultimate Loss & DCCE Ratio	Estimated Incremental Rate Change	Estimated Cumulative Change to 2008	On-Level Factor To 2008	On-Level Loss Ratio
2002	78.3%	8.3%	4.8%	1.048	74.7%
2003	67.3%	8.9%	-3.2%	0.968	69.5%
2004	57.5%	1.7%	-1.1%	0.889	64.7%
2005	66.1%	-3.9%	-12.6%	0.874	64.2%
2006	60.3%	-5.2%	-9.0%	0.910	66.3%
2007	67.6%	-4.0%	-4.0%	0.960	70.4%
Avg:	64.5%				68.2%
Avg LS:	61.8%				67.0%
Avg LS x H/L:	61.7%				66.8%
Selection:	65.0%				67.0%
		Estimated Incremental Rate Change			
		2008			67.0%
		2009	-1.2%		68.0%
		2010	-3.6%		71.0%
		2011	1.9%		70.0%

Estimated changes reflect loss ratio trend and rate changes

Rate changes are for illustrative purposes only

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**Combined Property Casualty Insurance Industry
Workers' Compensation
Data as of December 31, 2011
Bornhuetter-Ferguson Methods**

Net Paid Loss & DCCF Bornhuetter-Ferguson Method

Accident Year	A Priori Loss Ratio ²	Net Earned Premium	A Priori Net Ultimate Loss & DCCF	Unpaid Factor	Indicated Net Ultimate Loss & DCCF	Indicated Net Ultimate Loss & DCCF Ratio
2008	67.0%	40,335	27,025	36.8%	29,611	70.9%
2009	68.0%	35,580	24,195	44.9%	25,614	72.0%
2010	71.0%	33,493	23,780	58.1%	25,389	75.8%
2011	70.0%	35,438	24,807	60.7%	26,534	72.1%
Total		144,847	99,806		105,148	72.6%

Net Incurred Loss & DCCF Bornhuetter-Ferguson Method

Accident Year	A Priori Loss Ratio ²	Net Earned Premium	A Priori Net Ultimate Loss & DCCF	Unreported Factor	Indicated Net Ultimate Loss & DCCF	Indicated Net Ultimate Loss & DCCF Ratio
2008	67.0%	40,335	27,025	21.4%	29,396	72.9%
2009	68.0%	35,580	24,195	25.9%	26,190	73.8%
2010	71.0%	33,493	23,780	34.2%	26,187	78.2%
2011	70.0%	35,438	24,807	52.8%	26,252	74.1%
Total		144,847	99,806		108,025	74.6%

² A Priori Loss Ratios based on historical loss ratios reflecting estimated rate changes

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Scenario 2: Adjusted Historical Loss Ratio

- BF loss ratios higher than A Priori loss ratio for each year
 - Is this random or a trend?
- Questions regarding rate change and trend assumptions:
 - How accurate are the rate changes?
 - How accurate are the trend assumptions?
 - Do the trend and rate changes reflect:
 - Changes in retentions / deductibles, limits, terms and conditions
 - Changes in exposure, mix of business, mix of states, new and renewal business
 - Changes in the economy
- Answers vary by :
 - Company and line of business in a company
 - Stability of patterns
 - Underwriting cycle

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Scenario 2: Adjusted Historical Loss Ratio

- Questions regarding loss development assumptions:
- Is this something we haven't reflected?
 - Changes to data that would change development
 - Increased number of small dollar claims due to a poor economy will temper development factors
 - Change in case reserve practices
 - However, paid losses show a similar pattern
 - Company change in payment pattern
 - Due to claims settlement initiatives?
 - Due to changes in the mix of business?
 - Are these changes noticeable in development factors?
 - Known prior to the analysis or explanation of results?

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Loss Ratio Triangles At Current Rate Level

Net Paid Loss & DCCE Ratio Triangle at current rate levels										
Year	12	24	36	48	60	72	84	96	108	120
2002	14.3%	33.0%	44.6%	50.8%	55.1%	57.7%	60.2%	61.9%	63.2%	64.4%
2003	11.4%	25.8%	34.4%	39.5%	43.0%	45.6%	47.3%	48.7%	49.9%	
2004	9.9%	21.3%	27.3%	31.2%	33.9%	35.6%	37.0%	38.2%		
2005	9.8%	20.2%	26.1%	30.0%	32.5%	34.3%	35.6%			
2006	10.6%	22.1%	29.3%	33.4%	36.2%	38.3%				
2007	12.0%	26.3%	34.3%	39.4%	42.8%					
2008	13.7%	29.5%	38.9%	44.9%						
2009	14.3%	30.9%	40.7%							
2010	16.1%	35.2%								
2011	15.5%									

Net Incurred Loss & DCCE Ratio Triangle at current rate levels										
Year	12	24	36	48	60	72	84	96	108	120
2002	35.7%	53.2%	60.6%	63.5%	65.5%	67.1%	68.7%	69.8%	70.8%	72.0%
2003	29.8%	42.4%	47.2%	49.7%	51.8%	53.4%	54.4%	55.0%	56.4%	
2004	24.6%	33.5%	37.1%	39.1%	40.7%	41.8%	42.9%	43.7%		
2005	24.2%	31.9%	35.4%	37.6%	38.9%	40.2%	41.1%			
2006	25.8%	34.7%	39.3%	42.0%	43.9%	45.1%				
2007	29.7%	41.3%	46.6%	49.9%	51.5%					
2008	33.4%	46.7%	53.1%	56.8%						
2009	34.4%	48.4%	55.0%							
2010	38.7%	54.9%								
2011	37.1%									

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Scenario 3: Adjusted Loss Ratio Reflecting More Recent Years

- Historical Loss Ratios adjusting for:
 - Rate changes
 - Trend
 - More recent accident year selections
- Iterative Approach
 - Select A Priori loss ratio for one year
 - Perform B-F calculation
 - Select the accident year ultimate losses
 - Select A Priori loss ratio for next year based on all prior years' selections
 - Perform B-F calculation

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Combined Property Casualty Insurance Industry Worknet Compensation Data as of December 31, 2011 Bornhaetter-Ferguson Methods

Net Paid Loss & DCCE Bornhaetter-Ferguson Method										
Accident Year	A Priori Loss Ratio	Net Earned Payment	Net Ultimate Loss & DCCE	A Priori Net Ultimate	Unpaid Factor	Indicated Net Ultimate Loss & DCCE	Selected Net Ultimate Loss & DCCE Ratio			
2008	67.0%	26,336	27,065	36.8%	29.811	70.9%				

Net Incurred Loss & DCCE Bornhaetter-Ferguson Method										
Accident Year	A Priori Loss Ratio	Net Earned Payment	Net Ultimate Loss & DCCE	A Priori Net Ultimate	Unreported Factor	Indicated Net Ultimate Loss & DCCE	Selected Net Ultimate Loss & DCCE Ratio			
2008	67.0%	26,336	27,065	21.8%	20.398	72.9%				

Accident Year	Paid Loss Development	Incurred Loss Development	Paid Born/Fer	Incurred Born/Fer	Selected Net Ultimate Loss & DCCE Ratio
2005	55.1%	56.4%			56.1%
2006	59.9%	60.8%			60.3%
2007	67.0%	68.2%			67.8%
2008	73.2%	74.9%	70.9%	72.9%	71.9%

Accident Year	Average Incremental Loss Ratio Change	Selected Net Ultimate Loss & DCCE Ratio	Indicated Net UL Loss & DCCE Ratio Based on Prior Selected	Average A Priori Loss & DCCE Ratio
2005	1.66%	56.1%		
2006	-3.8%	60.3%		
2007	-5.24%	67.8%		
2008	-4.53%	71.9%	65.0%	67.1%
2009	-1.20%		67.1%	71.3%
			72.8%	72.8%
			69.0%	69.2%
			70.4%	70.0%

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Scenario 2 utilized 67% A Priori for AY 2008 and 68% for AY 2009



Combined Property Casualty Insurance Industry
Workers' Compensation
Data as of December 31, 2011
Bornhaetter-Ferguson Methods

Net Paid Loss & DCCCE Bornhaetter Ferguson Method

Accident Year	A Prior Loss Ratio ^a	Net Earned Premium	A Prior Net Ultimate Loss & DCCCE	Unpaid Factor	Indicated Net Ultimate Loss & DCCCE	Indicated Net Ultimate Loss & DCCCE Ratio
2009	70.7%	35,580	25,306	44.2%	25,931	72.9%

Net Incurred Loss & DCCCE Bornhaetter Ferguson Method

Accident Year	A Prior Loss Ratio ^a	Net Earned Premium	A Prior Net Ultimate Loss & DCCCE	Unreported Factor	Indicated Net Ultimate Loss & DCCCE	Indicated Net Ultimate Loss & DCCCE Ratio
2009	70.7%	35,580	25,306	25.9%	25,374	74.1%

Accident Year	Paid Loss Development	Incurred Loss Development	Paid Born-Ferg ^b	Incurred Born-Ferg ^b	Selected Net Ultimate Loss & DCCCE
2005	55.8%	56.4%			56.1%
2006	59.9%	60.8%			60.3%
2007	67.0%	68.2%			67.6%
2008	73.2%	74.5%	70.9%	72.9%	71.9%
2009	75.2%	75.6%	72.9%	74.1%	73.5%

Accident Year	Average Incremental Loss Ratio Change	Selected Net Ultimate Loss & DCCCE Rate	Indicated Net UL Loss & DCCCE Ratio Based on Prior Selected					Average + HL	Average L3	A Prior Loss & DCCCE Ratio
2005	1.68%	56.1%	2005	2006	2007	2008	2009	Average		
2006	-0.90%	60.3%								
2007	-0.24%	67.6%								
2008	-4.00%	71.9%								
2009	-1.20%	73.5%	67.4%	69.6%	73.9%	75.5%	76.2%	72.5%	73.0%	75.2%
2010	-3.57%									75.0%

Scenario 2 utilized 68% A Prior for AY 2009 and 71% for AY 2010

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Combined Property Casualty Insurance Industry
Workers' Compensation
Data as of December 31, 2011
Bornhaetter-Ferguson Methods

Net Paid Loss & DCCCE Bornhaetter Ferguson Method

Accident Year	A Prior Loss Ratio ^a	Net Earned Premium	A Prior Net Ultimate Loss & DCCCE	Unpaid Factor	Indicated Net Ultimate Loss & DCCCE	Indicated Net Ultimate Loss & DCCCE Ratio
2010	75.0%	33,493	25,120	58.1%	26,168	78.1%

Net Incurred Loss & DCCCE Bornhaetter Ferguson Method

Accident Year	A Prior Loss Ratio ^a	Net Earned Premium	A Prior Net Ultimate Loss & DCCCE	Unreported Factor	Indicated Net Ultimate Loss & DCCCE	Indicated Net Ultimate Loss & DCCCE Ratio
2010	75.0%	33,493	25,120	34.2%	26,989	79.8%

Accident Year	Paid Loss Development	Incurred Loss Development	Paid Born-Ferg ^b	Incurred Born-Ferg ^b	Selected Net Ultimate Loss & DCCCE
2005	55.8%	56.4%			56.1%
2006	59.9%	60.8%			60.3%
2007	67.0%	68.2%			67.6%
2008	73.2%	74.5%	70.9%	72.9%	71.9%
2009	75.2%	75.6%	72.9%	74.1%	73.5%
2010	82.5%	81.9%	78.1%	79.6%	78.8%

Accident Year	Average Incremental Loss Ratio Change	Selected Net Ultimate Loss & DCCCE Rate	Indicated Net UL Loss & DCCCE Ratio Based on Prior Selected					Average + HL	Average L3	A Prior Loss & DCCCE Ratio
2005	1.68%	56.1%	2005	2006	2007	2008	2009	2010	Average	
2006	-0.90%	60.3%								
2007	-0.24%	67.6%								
2008	-4.00%	71.9%								
2009	-1.20%	73.5%	66.1%	68.3%	72.5%	74.1%	74.8%	77.4%	72.2%	72.4%
2010	-3.57%	78.8%								75.0%
2011	1.89%									

Scenario 2 utilized 71% A Prior for AY 2010 and 70% for AY 2011

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Combined Property Casualty Insurance Industry
Workers' Compensation
Data as of December 31, 2011
Bornhaetter-Ferguson Methods

Net Paid Loss & DCCCE Bornhaetter Ferguson Method

Accident Year	A Prior Loss Ratio ^a	Net Earned Premium	A Prior Net Ultimate Loss & DCCCE	Unpaid Factor	Indicated Net Ultimate Loss & DCCCE	Indicated Net Ultimate Loss & DCCCE Ratio
2011	75.0%	35,438	26,579	60.7%	26,965	76.1%

Net Incurred Loss & DCCCE Bornhaetter Ferguson Method

Accident Year	A Prior Loss Ratio ^a	Net Earned Premium	A Prior Net Ultimate Loss & DCCCE	Unreported Factor	Indicated Net Ultimate Loss & DCCCE	Indicated Net Ultimate Loss & DCCCE Ratio
2011	75.0%	35,438	26,579	52.8%	27,188	76.7%

Accident Year	Paid Loss Development	Incurred Loss Development	Paid Born-Ferg ^b	Incurred Born-Ferg ^b	Selected Net Ultimate Loss & DCCCE
2005	55.8%	56.4%			56.1%
2006	59.9%	60.8%			60.3%
2007	67.0%	68.2%			67.6%
2008	73.2%	74.5%	70.9%	72.9%	71.9%
2009	75.2%	75.6%	72.9%	74.1%	73.5%
2010	82.5%	81.9%	78.1%	79.6%	78.8%
2011	80.7%	78.6%	76.1%	76.7%	76.4%

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Combined Exhibits

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Combined Property Casualty Insurance Industry Workers' Compensation Data as of December 31, 2011 Expected Loss & DCCE Ratio Method

Accident Year	Average Incremental Loss Ratio Change	Selected Net Ultimate Loss & DCCE Ratio	Indicated Net LTI Loss & DCCE Ratio Based on Prior Selected					Average	Average + HL	Average L3	Selected A Prior Loss & DCCE Ratio	
			2005	2006	2007	2008	2009					2010
2005	1.65%	56.1%										
2006	-3.90%	60.3%	58.4%				58.4%					
2007	-5.24%	67.6%	61.6%	63.7%			62.6%					
2008	-4.00%	71.9%	64.2%	66.3%	70.4%		67.0%	66.3%	67.0%	67.0%		
2009	-1.20%	73.5%	65.0%	67.1%	71.3%	72.8%	69.0%	69.2%	70.4%	70.0%		
2010	-3.57%	78.8%	67.4%	69.6%	73.9%	75.5%	76.2%	72.5%	73.0%	75.0%		
2011	1.89%		66.1%	68.3%	72.5%	74.1%	74.8%	77.4%	72.2%	72.4%	75.4%	75.0%

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Combined Property Casualty Insurance Industry Workers' Compensation Data as of December 31, 2011 Bornuetter-Ferguson Methods

Net Paid Loss & DCCE Bornuetter-Ferguson Method

Accident Year	A Prior Loss Ratio ²	Net Earned Premium	A Prior Net Ultimate Loss & DCCE	Unpaid Factor	Indicated Net Ultimate Loss & DCCE	Indicated Net Ultimate Loss & DCCE Ratio
2009	70.0%	35,580	24,906	44.9%	25,933	72.9%
2010	75.0%	33,493	25,120	58.1%	26,168	78.1%
2011	75.0%	35,438	26,579	60.7%	26,965	76.1%
Total		144,847	103,629		107,676	74.3%

Net Incurred Loss & DCCE Bornuetter-Ferguson Method

Accident Year	A Prior Loss Ratio ²	Net Earned Premium	A Prior Net Ultimate Loss & DCCE	Unreported Factor	Indicated Net Ultimate Loss & DCCE	Indicated Net Ultimate Loss & DCCE Ratio
2009	70.0%	35,580	24,906	25.9%	26,574	74.1%
2010	75.0%	33,493	25,120	34.2%	26,940	79.6%
2011	75.0%	35,438	26,579	52.8%	27,188	76.7%
Total		144,847	103,629		109,603	75.7%

² As selected based on all prior loss ratios adjusted for rate change and trend

Note: Source data provided by SNL Financial.

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Comparison Exhibits

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Combined Property Casualty Insurance Industry Worked Compensation

Comparison of A Priori Loss Ratios

Accident Year	Scenario 1		Scenario 2		Scenario 3	
	Loss	Incurred	Loss	Incurred	Loss	Incurred
2008	65.0%	72.5%	67.0%	72.9%	67.0%	72.9%
2009	65.0%	72.5%	68.0%	73.6%	70.0%	76.0%
2010	65.0%	72.5%	71.0%	76.2%	75.0%	79.6%
2011	65.0%	72.5%	70.0%	75.4%	75.0%	79.6%

Comparison of B/F Loss Ratios

Accident Year	Scenario 1		Scenario 2		Scenario 3	
	Loss	Incurred	Loss	Incurred	Loss	Incurred
2008	70.2%	72.5%	70.9%	72.9%	70.9%	72.9%
2009	70.8%	72.8%	72.0%	73.6%	72.9%	74.1%
2010	72.2%	76.1%	75.8%	78.2%	76.1%	79.6%
2011	68.0%	71.4%	72.1%	74.1%	76.1%	76.7%

Indicated Ultimate Losses

Accident Year	Scenario 1		Scenario 2		Scenario 3	
	Paid	Incurred	Paid	Incurred	Paid	Incurred
2008	28,314	29,223	28,611	29,396	28,611	29,396
2009	28,134	28,913	28,614	28,190	28,933	28,374
2010	24,222	25,500	25,389	24,187	26,188	26,646
2011	24,103	25,316	25,534	24,252	26,965	27,188
Total	101,773	108,953	108,148	108,025	107,676	109,603

Paid for 2008-2011:	50,488	50,488	50,488	50,488	50,488	50,488
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Indicated Unpaid:	51,285	58,464	54,660	57,536	57,188	59,115
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Range	Lowest	51,285
	Highest	59,115
	Spread	15.3%

Scenario 1: Pricing Loss Ratio
Scenario 2: Adjusted Historical Loss Ratio
Scenario 3: Loss Ratio Selection Reflecting More Recent Years

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Summary

- Presentation provides considerations when selecting an A Priori
- No single method is appropriate for all situations
- Selection of A Priori depends on
 - Company Specific Information/Situation
 - Line of Business
 - Length of Tail
 - Effect of Economic Environment
 - Differentiating Between
 - a trend in loss ratios
 - variability of results

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Other Considerations

- The opposite situation would have indicated *improving* loss ratios
 - Are loss ratios really improving or has there been a change to the reporting or payment patterns?
 - Case reserve weakening
 - Lack of large claims initially reported / reserves
 - Delay in reporting or paying losses
 - Change in claims system
 - Change in TPA
 - Change in underlying accounts

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