

**For Facilitators.**

Students should see and recognize an unusually high development factor (link ratio) for the 2011 year at the 48-60 development age. Their age-to-age selection should probably ignore this one historical factor due to its unusual nature. Selections for other development ages can rely on the entire history of claims. Students should also see a marked drop-off in indicated loss ratio for 2016 due to an artificially depressed paid-to-date because of the earthquake. Student final reserve selection for that year can be based on the expected LR of 80% or longer term experience loss ratios.

Accident Year Paid Losses (in \$000s)								
Accident Year	Cumulative Totals as of 12/31/16							
	2009	2010	2011	2012	2013	2014	2015	2016
2009	696	2,785	5,262	8,178	9,522	10,604	10,803	10,852
2010		776	3,907	8,383	12,748	14,161	14,805	15,045
2011			1,058	4,344	8,501	11,912	17,898	18,760
2012				1,106	4,589	7,929	12,618	14,967
2013					1,230	4,829	10,355	15,425
2014						1,281	5,696	11,836
2015							1,217	5,609
2016								1,057

Accident Year Paid Losses (in \$000s)								
Accident Year	Cumulative Totals by Development Age in Months							
	12	24	36	48	60	72	84	96
2009	696	2,785	5,262	8,178	9,522	10,604	10,803	10,852
2010	776	3,907	8,383	12,748	14,161	14,805	15,045	
2011	1,058	4,344	8,501	11,912	17,898	18,760		
2012	1,106	4,589	7,929	12,618	14,967			
2013	1,230	4,829	10,355	15,425				
2014	1,281	5,696	11,836					
2015	1,217	5,609						
2016	1,057							

Accident Year Paid Losses (in \$000s)								
Accident Year	Development Age in Months							
	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-Ult
2009	4.001	1.889	1.554	1.164	1.114	1.019	1.005	
2010	5.035	2.146	1.521	1.111	1.045	1.016		
2011	4.106	1.957	1.401	1.503	1.048			
2012	4.149	1.728	1.591	1.186				
2013	3.926	2.144	1.490					
2014	4.447	2.078						
2015	4.609							
2016								
<b>Wtd Avg</b>	<b>4.313</b>	<b>1.999</b>	<b>1.506</b>	<b>1.244</b>	<b>1.062</b>	<b>1.017</b>	<b>1.005</b>	

Selecton 4.247 2.011 1.506 1.154 1.062 1.017 1.005 1.000

Accident Year	Accident Year Age	Age to Age Factor	Age to Ultimate Factor	Paid to Date	Calculated Ultimate	Selected Ultimate	Indicated Unpaid	Earned Premium	Indicated Loss Ratio
2009	96	xx	1.000	10,852	10,852	10,852	-	14,784	73%
2010	84	1.005	1.005	15,045	15,113	15,113	68	17,468	87%
2011	72	1.017	1.022	18,760	19,171	19,171	411	19,550	98%
2012	60	1.062	1.085	14,967	16,247	16,247	1,280	21,243	76%
2013	48	1.154	1.252	15,425	19,319	19,319	3,894	24,003	80%
2014	36	1.506	1.886	11,836	22,322	22,322	10,486	24,866	90%
2015	24	2.011	3.792	5,609	21,268	21,268	15,659	25,843	82%
2016	12	4.247	16.105	1,057	17,023	22,520	21,463	27,487	82%

Total 93,551 141,314 146,811 53,260

**For Facilitators.**

Students should be on the look-out for changes in development that make accident years 2012 through 2015 different than prior years. Selections probably should give more weight to experience after accident year 2012 than that before. It is not clear how development after 72 months will play out since 2012 is only 72 months old with this data set. Students should also see a marked drop-off in indicated loss ratio for 2016 due to an artificially depressed paid-to-date because of the earthquake. Student final reserve selection for that year can be based on the expected LR of 80% or longer term experience loss ratios.

Accident Year Paid Losses (in \$000s)								
Accident Year	Cumulative Totals as of 12/31/16							
	2009	2010	2011	2012	2013	2014	2015	2016
2009	696	2,785	5,262	8,178	9,522	10,604	10,803	10,852
2010		776	3,907	8,383	12,748	14,161	14,805	15,045
2011			1,058	4,344	8,501	11,912	15,148	15,878
2012				1,106	4,941	10,169	15,683	18,824
2013					1,230	5,564	11,711	18,334
2014						1,281	5,797	12,348
2015							1,217	5,552
2016								1,057

Accident Year Paid Losses (in \$000s)								
Accident Year	Cumulative Totals by Development Age in Months							
	12	24	36	48	60	72	84	96
2009	696	2,785	5,262	8,178	9,522	10,604	10,803	10,852
2010	776	3,907	8,383	12,748	14,161	14,805	15,045	
2011	1,058	4,344	8,501	11,912	15,148	15,878		
2012	1,106	4,941	10,169	15,683	18,824			
2013	1,230	5,564	11,711	18,334				
2014	1,281	5,797	12,348					
2015	1,217	5,552						
2016	1,057							

Accident Year Paid Losses (in \$000s)								
Accident Year	Development Age in Months							
	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-Ult
2009	4.001	1.889	1.554	1.164	1.114	1.019	1.005	
2010	5.035	2.146	1.521	1.111	1.045	1.016		
2011	4.106	1.957	1.401	1.272	1.048			
2012	4.467	2.058	1.542	1.200				
2013	4.524	2.105	1.566					
2014	4.525	2.130						
2015	4.562							
2016								
<b>Wtd Avg</b>	<b>4.466</b>	<b>2.062</b>	<b>1.519</b>	<b>1.188</b>	<b>1.063</b>	<b>1.017</b>	<b>1.005</b>	

**Selecton** 4.520 2.098 1.554 1.194 1.063 1.017 1.005 1.000

Accident Year	Accident Year Age	Age to Age Factor	Age to Ultimate Factor	Paid to Date	Calculated Ultimate	Selected Ultimate	Indicated Unpaid	Earned Premium	Indicated Loss Ratio
2009	96	xx	1.000	10,852	10,852	10,852	-	14,784	73%
2010	84	1.005	1.005	15,045	15,113	15,113	68	17,468	87%
2011	72	1.017	1.022	15,878	16,226	16,226	348	19,550	83%
2012	60	1.063	1.087	18,824	20,453	20,453	1,629	25,546	80%
2013	48	1.194	1.298	18,334	23,790	23,790	5,456	28,670	83%
2014	36	1.554	2.016	12,348	24,898	24,898	12,550	29,949	83%
2015	24	2.098	4.230	5,552	23,482	23,482	17,930	28,631	82%
2016	12	4.520	19.116	1,057	20,205	22,977	21,920	28,439	81%

Total 97,890 155,019 157,790 59,900

**For Facilitators.**

Students should be on the look-out for changes in development that make accident years 20012 through 2015 different than prior years. Selections probably should give more weight to experience after accident year 2012 than that before. It is not clear how development after 72 months will play out since 2012 is only 72 months old with this data set. Students should also see a marked drop-off in indicated loss ratio for 2016 due to an artificially depressed paid-to-date because of the earthquake. Student final reserve selection for that year can be based on the expected LR of 80% or longer term experience loss ratios.

Accident Year Paid Losses (in \$000s)								
Accident Year	Cumulative Totals as of 12/31/16							
	2009	2010	2011	2012	2013	2014	2015	2016
2009	696	2,785	5,262	8,178	9,522	10,604	10,803	10,852
2010		776	3,907	8,383	12,748	14,161	14,805	15,045
2011			1,058	4,344	8,501	11,912	15,148	15,878
2012				1,106	4,751	9,023	12,899	14,912
2013					1,230	5,261	10,070	14,330
2014						1,281	5,439	10,237
2015							1,217	5,113
2016								1,057

Accident Year Paid Losses (in \$000s)								
Accident Year	Cumulative Totals by Development Age in Months							
	12	24	36	48	60	72	84	96
2009	696	2,785	5,262	8,178	9,522	10,604	10,803	10,852
2010	776	3,907	8,383	12,748	14,161	14,805	15,045	
2011	1,058	4,344	8,501	11,912	15,148	15,878		
2012	1,106	4,751	9,023	12,899	14,912			
2013	1,230	5,261	10,070	14,330				
2014	1,281	5,439	10,237					
2015	1,217	5,113						
2016	1,057							

Accident Year Paid Losses (in \$000s)								
Accident Year	Development Age in Months							
	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-Ult
2009	4.001	1.889	1.554	1.164	1.114	1.019	1.005	
2010	5.035	2.146	1.521	1.111	1.045	1.016		
2011	4.106	1.957	1.401	1.272	1.048			
2012	4.296	1.899	1.430	1.156				
2013	4.277	1.914	1.423					
2014	4.246	1.882						
2015	4.201							
2016								
<b>Wtd Avg</b>	<b>4.291</b>	<b>1.943</b>	<b>1.457</b>	<b>1.175</b>	<b>1.063</b>	<b>1.017</b>	<b>1.005</b>	

Selecton 4.255 1.898 1.426 1.166 1.063 1.017 1.005 1.000

Accident Year	Accident Year Age	Age to Age Factor	Age to Ultimate Factor	Paid to Date	Calculated Ultimate	Selected Ultimate	Indicated Unpaid	Earned Premium	Indicated Loss Ratio
2009	96	xx	1.000	10,852	10,852	10,852	-	14,784	73%
2010	84	1.005	1.005	15,045	15,113	15,113	68	17,468	87%
2011	72	1.017	1.022	15,878	16,226	16,226	348	19,550	83%
2012	60	1.063	1.087	14,912	16,202	16,202	1,290	16,491	98%
2013	48	1.166	1.266	14,330	18,148	18,148	3,818	24,823	73%
2014	36	1.426	1.806	10,237	18,491	18,491	8,254	21,080	88%
2015	24	1.898	3.429	5,113	17,533	17,533	12,420	23,017	76%
2016	12	4.255	14.591	1,057	15,423	22,835	21,778	28,088	81%

Total 87,424 127,988 135,400 47,976

**For Facilitators.**

Students should be on the look-out for changes in development that make development during the last three years different than what went before. Selections probably should give more weight to experience after calendar year 2013 (last 3 diagonals) than that before. Students should also see a marked drop-off in indicated loss ratio for 2016 due to an artificially depressed paid-to-date because of the earthquake. Student final reserve selection for that year can be based on the expected LR of 8% or longer term experience loss ratios.

Accident Year Paid Losses (in \$000s)								
Accident Year	Cumulative Totals as of 12/31/16							
	2009	2010	2011	2012	2013	2014	2015	2016
2009	696	2,785	5,262	8,178	9,522	11,156	11,465	11,541
2010		776	3,907	8,383	12,748	14,857	15,874	16,259
2011			1,058	4,344	8,501	13,642	19,182	20,574
2012				1,106	4,589	9,641	18,086	23,134
2013					1,230	6,718	18,339	31,634
2014						1,281	7,894	20,708
2015							1,217	7,766
2016								1,057

Accident Year Paid Losses (in \$000s)								
Accident Year	Cumulative Totals by Development Age in Months							
	12	24	36	48	60	72	84	96
2009	696	2,785	5,262	8,178	9,522	11,156	11,465	11,541
2010	776	3,907	8,383	12,748	14,857	15,874	16,259	
2011	1,058	4,344	8,501	13,642	19,182	20,574		
2012	1,106	4,589	9,641	18,086	23,134			
2013	1,230	6,718	18,339	31,634				
2014	1,281	7,894	20,708					
2015	1,217	7,766						
2016	1,057							

Accident Year Paid Losses (in \$000s)								
Accident Year	Development Age in Months							
	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-Ult
2009	4.001	1.889	1.554	1.164	1.172	1.028	1.007	
2010	5.035	2.146	1.521	1.165	1.068	1.024		
2011	4.106	1.957	1.605	1.406	1.073			
2012	4.149	2.101	1.876	1.279				
2013	5.462	2.730	1.725					
2014	6.162	2.623						
2015	6.381							
2016								
<b>Wtd Avg</b>	<b>5.161</b>	<b>2.343</b>	<b>1.682</b>	<b>1.267</b>	<b>1.093</b>	<b>1.026</b>	<b>1.007</b>	

Selecton 6.002 2.485 1.735 1.284 1.093 1.026 1.007 1.000

Accident Year	Accident Year Age	Age to Age Factor	Age to Ultimate Factor	Paid to Date	Calculated Ultimate	Selected Ultimate	Indicated Unpaid	Earned Premium	Indicated Loss Ratio
2009	96	xx	1.000	11,541	11,541	11,541	-	14,784	78%
2010	84	1.007	1.007	16,259	16,367	16,367	108	17,468	94%
2011	72	1.026	1.032	20,574	21,242	21,242	668	19,550	109%
2012	60	1.093	1.128	23,134	26,102	26,102	2,968	21,243	123%
2013	48	1.284	1.448	31,634	45,813	45,813	14,179	24,003	191%
2014	36	1.735	2.513	20,708	52,039	52,039	31,331	61,461	85%
2015	24	2.485	6.244	7,766	48,490	48,490	40,724	60,157	81%
2016	12	6.002	37.475	1,057	39,611	54,339	53,282	57,657	94%

Total 132,673 261,206 275,934 143,261