

1 **Consumer Advocate RfI CA-FA-03:** *The trend analyses are based on separate regressions for*
 2 *frequency and severity and the selected trend rates are combined into a single loss cost trend rate. Can*
 3 *FA provide a set of trend calculations that are based on loss cost data?*

4 **FA Response to RfI CA-FA-03:**

5 **Bodily Injury**

6 For bodily injury, the period structure selected for frequency and severity were the same, and in both
 7 cases, seasonality was not included as a parameter – the only difference in the data selection for
 8 frequency and severity was that a data point was excluded in the severity model fit (period 2011-H2)
 9 whereas there were no data exclusions for frequency. As a result, the fitted loss cost trend for the “past”
 10 and future periods differs, depending on whether 2011-H2 is included (as per based on Frequency) or
 11 excluded (as per based on Severity). Our selected trends from our frequency and severity models
 12 produce a 4.4% loss cost trend, whereas a loss cost model on the frequency data periods fits a 5.6%
 13 trend but a 4.2% trend where the severity data periods are used.

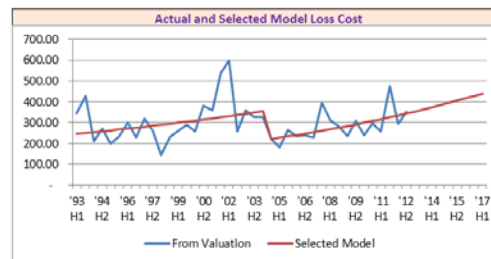
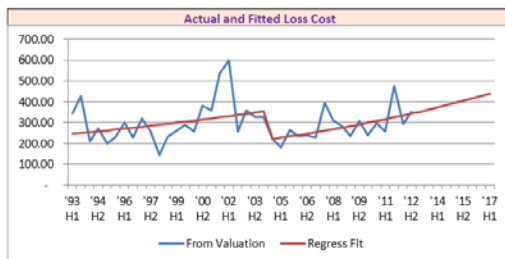
14 **Bodily Injury Loss Cost Model – Based on Frequency Structure and Data Periods**

| REGRESSION STATISTICS | | | | | | |
|-----------------------|----------|-------------|-----------------------|-------------|--------------------|---------------------|
| Multiple R | R2 | Adjusted R2 | S.E. of Estimate | # of Obs. n | # of Obs. Excluded | k |
| 0.7006 | 0.4908 | 0.3152 | 0.2345 | 40 | - | 11 |
| Runs-Test Result: | | 0.8972 | RESIDUALS RUNS RANDOM | | | |
| Coefficients | S.E. | t-Stat | p-value | C.I. Lower | 0.99 Upper | Selected Coeff. |
| 1 | 2 | | | | | |
| Intercept | (61.098) | 29.4687 | (2.073) | 0.0471 | (142.325) | 20.1295 (61.098) 11 |
| Season | - | - | - | 1.0000 | - | - 10 |
| All Years | 0.0334 | 0.0147 | 2.2662 | 0.0311 | (0.007) | 0.0741 0.0334 9 |
| Scalar 1 | (43.438) | 55.1724 | (0.787) | 0.4375 | (195.514) | 108.6388 (43.438) 8 |
| Trend 1 | 0.0214 | 0.0275 | 0.7789 | 0.4423 | (0.054) | 0.0972 0.0214 7 |
| Scalar 2 | - | - | - | 1.0000 | - | - 6 |
| Trend 2 | - | - | - | 1.0000 | - | - 5 |
| Scalar 3 | - | - | - | 1.0000 | - | - 4 |
| Trend 3 | - | - | - | 1.0000 | - | - 3 |
| Scalar 4 | - | - | - | 1.0000 | - | - 2 |
| Trend 4 | - | - | - | 1.0000 | - | - 1 |

Trends are Annual

| ANOVA | | | | | |
|------------|----|--------|--------|--------|----------------|
| | df | SS | MS | F | Significance F |
| Regression | 10 | 1.5374 | 0.1537 | 2.7954 | 0.0149 |
| Residual | 29 | 1.5949 | 0.0550 | | |
| Total | 39 | 3.1322 | | | |

| | Fitted Annual | Previous Selected | Selected Annual | |
|--------|---------------|-------------------|-----------------|--------------------------------|
| past | 5.6% | 2.4% | 5.6% | *12H2 => last period in "past" |
| future | 5.6% | 2.4% | 5.6% | |



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16 *Bodily Injury Loss Cost Model – Based on Severity Structure and Data Periods*

| REGRESSION STATISTICS | | | | | | |
|-----------------------|---------------|---------------|------------------|-------------|--------------------|----|
| Multiple R | R2 | Adjusted R2 | S.E. of Estimate | # of Obs. n | # of Obs. Excluded | k |
| 0.7094 | 0.5092 | 0.3258 | 0.2255 | 39 | 1 | 11 |

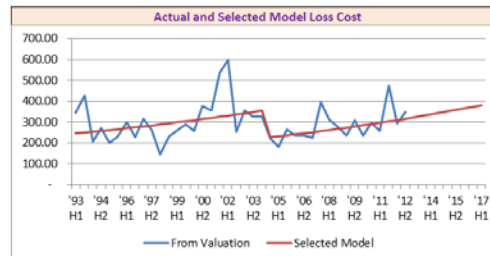
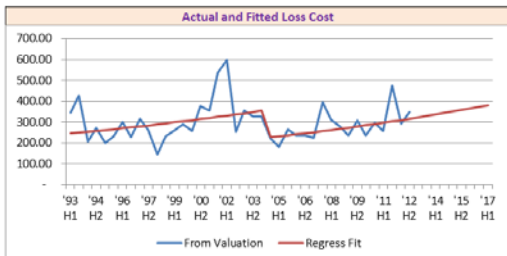
Runs-Test Result: 0.8972 **RESIDUALS RUNS RANDOM**

| | Coefficients | | t-Stat | p-value | C.I. | | 0.99 Upper | Selected Coeff. | |
|-----------|--------------|---------|---------|---------|-----------|----------|------------|-----------------|--|
| | 1 | 2 | | | Lower | Upper | | | |
| Intercept | (61.098) | 28.3331 | (2.156) | 0.0398 | (139.389) | 17.1941 | (61.098) | 11 | |
| Season | - | - | - | 1.0000 | - | - | - | 10 | |
| All Years | 0.0334 | 0.0142 | 2.3571 | 0.0256 | (0.006) | 0.0726 | 0.0334 | 9 | |
| Scalar 1 | (16.849) | 54.9685 | (0.307) | 0.7615 | (168.742) | 135.0431 | (16.849) | 8 | |
| Trend 1 | 0.0082 | 0.0274 | 0.2983 | 0.7677 | (0.068) | 0.0839 | 0.0082 | 7 | |
| Scalar 2 | - | - | - | 1.0000 | - | - | - | 6 | |
| Trend 2 | - | - | - | 1.0000 | - | - | - | 5 | |
| Scalar 3 | - | - | - | 1.0000 | - | - | - | 4 | |
| Trend 3 | - | - | - | 1.0000 | - | - | - | 3 | |
| Scalar 4 | - | - | - | 1.0000 | - | - | - | 2 | |
| Trend 4 | - | - | - | 1.0000 | - | - | - | 1 | |

Trends are Annual

| ANOVA | | | | | |
|------------|----|--------|--------|--------|----------------|
| | df | SS | MS | F | Significance F |
| Regression | 10 | 1.4419 | 0.1442 | 2.8362 | 0.0144 |
| Residual | 28 | 1.4235 | 0.0508 | | |
| Total | 38 | 2.8654 | | | |

| | Fitted Annual | Previous Selected | Selected Annual | |
|--------|---------------|-------------------|-----------------|--------------------------------|
| | | | | selected = fitted |
| past | 4.2% | 2.4% | 4.2% | '12H2 => last period in "past" |
| future | 4.2% | 2.4% | 4.2% | |



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18 Based on the statistics generated, the p-values suggest that the “trend” over the second period (i.e. 2004-
19 H2 to 2012-H2) is not statistically different from the “all years” trend. The results of removing this
20 parameter for each of the “data period” types is shown below, resulting in trends of 4.0% and 3.6%
21 respectively.

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*Bodily Injury Loss Cost Model – Based on **Frequency Structure and Data Periods**, with parameters adjusted based on p-values*

| REGRESSION STATISTICS | | | | | | |
|-----------------------|---------------|---------------|------------------|-------------|--------------------|----|
| Multiple R | R2 | Adjusted R2 | S.E. of Estimate | # of Obs. n | # of Obs. Excluded | k |
| 0.7027 | 0.4937 | 0.3191 | 0.2338 | 40 | - | 11 |

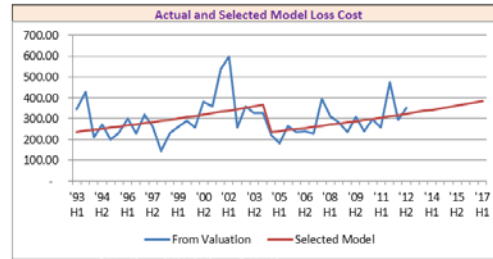
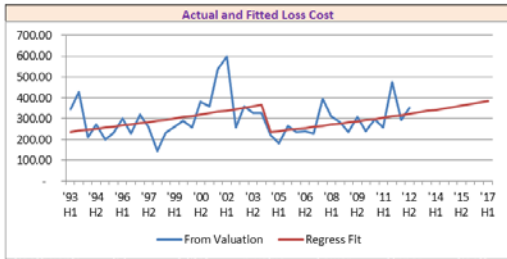
Runs-Test Result: 0.3199 **RESIDUALS RUNS RANDOM**

| ANOVA | | | | | |
|------------|----|--------|--------|--------|----------------|
| | df | SS | MS | F | Significance F |
| Regression | 10 | 1.5464 | 0.1546 | 2.8281 | 0.0140 |
| Residual | 29 | 1.5858 | 0.0547 | | |
| Total | 39 | 3.1322 | | | |

| | Coefficients | S.E. | t-Stat | p-value | C.I. Lower | 0.99 Upper | Selected Coeff. |
|-----------|--------------|---------|---------|---------|------------|------------|-----------------|
| Intercept | (73.401) | 24.8066 | (2.959) | 0.0061 | (141.778) | (5.025) | (73.401) 11 |
| Season | - | - | - | 1.0000 | - | - | - 10 |
| All Years | 0.0396 | 0.0124 | 3.1881 | 0.0034 | 0.0054 | 0.0738 | 0.0396 9 |
| Scalar 1 | (0.463) | 0.1449 | (3.195) | 0.0034 | (0.862) | (0.064) | (0.463) 8 |
| Trend 1 | - | - | - | 1.0000 | - | - | - 7 |
| Scalar 2 | - | - | - | 1.0000 | - | - | - 6 |
| Trend 2 | - | - | - | 1.0000 | - | - | - 5 |
| Scalar 3 | - | - | - | 1.0000 | - | - | - 4 |
| Trend 3 | - | - | - | 1.0000 | - | - | - 3 |
| Scalar 4 | - | - | - | 1.0000 | - | - | - 2 |
| Trend 4 | - | - | - | 1.0000 | - | - | - 1 |

Trends are Annual

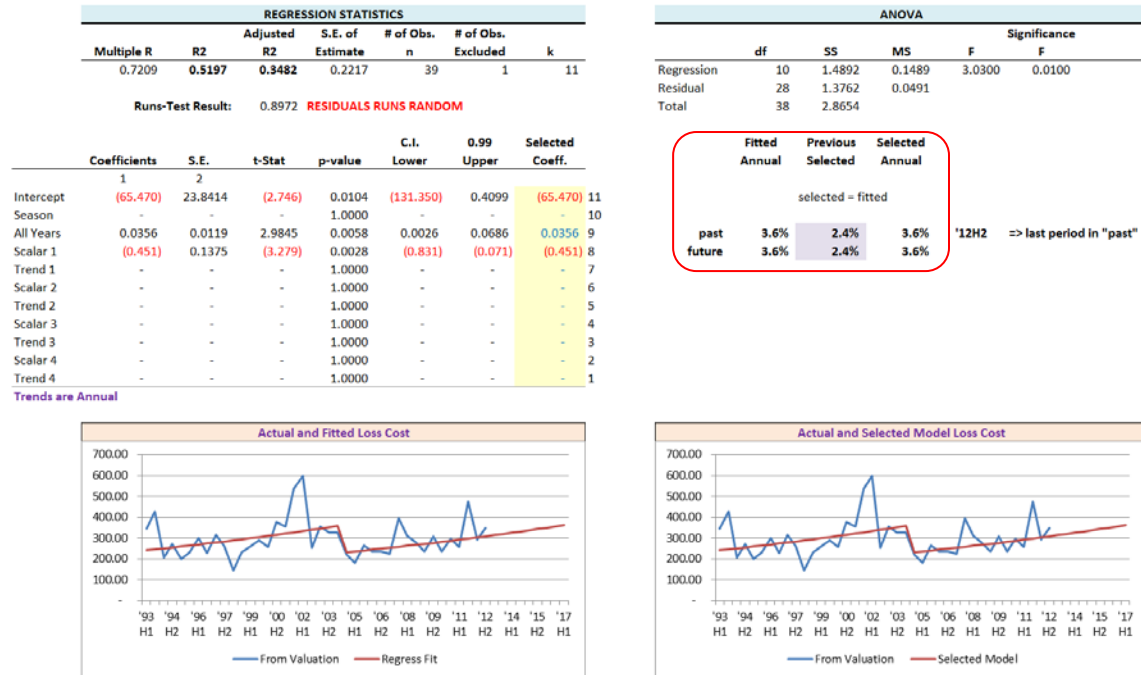
| | Fitted Annual | Previous Selected | Selected Annual | |
|--------|---------------|-------------------|-----------------|--------------------------------|
| | | | | selected = fitted |
| past | 4.0% | 2.4% | 4.0% | '12H2 => last period in "past" |
| future | 4.0% | 2.4% | 4.0% | |



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Bodily Injury Loss Cost Model – Based on Severity Structure and Data Periods, with parameters adjusted based on p-values


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Property Damage

29 For property damage, the period structure selected for frequency and severity were the same, and in both
 30 cases, seasonality was included as a parameter – the only difference in the data selection for frequency
 31 and severity was that a data point was excluded in the frequency model fit (period 2004-H2) whereas
 32 there were no data exclusions for severity. As a result, the fitted loss cost trend for the “past” and future
 33 periods differs, depending on whether 20-H2 is included (as per based on Frequency) or excluded (as
 34 per based on Severity), prior to adjusting to remove parameters based on their p-values. Our selected
 35 trends from our frequency and severity models produce a 2.4% loss cost trend, whereas a loss cost
 36 model on the frequency data periods fits a 2.8% trend but a 3.2% trend where the severity data periods
 37 are used. However, the p-values with these periods using loss cost data indicate that seasonality is not
 38 significant, that the trend 1, scalar 1, and all years trend are not significant, resulting in a 0.0% indicated
 39 trend over the entire period. All four associated views are presented on the pages that follow.

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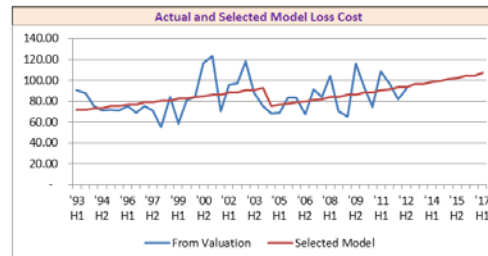
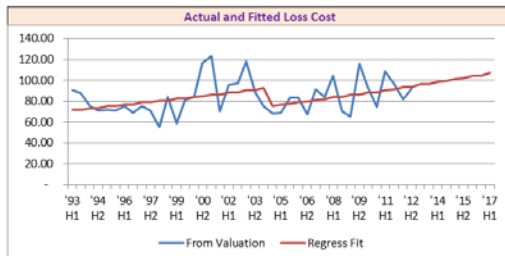
Property Damage Loss Cost Model – Based on Frequency Structure and Data Periods

| REGRESSION STATISTICS | | | | | | |
|---|----------|-------------|------------------|-------------|--------------------|---------------------|
| Multiple R | R2 | Adjusted R2 | S.E. of Estimate | # of Obs. n | # of Obs. Excluded | k |
| 0.5852 | 0.3424 | 0.1076 | 0.1826 | 39 | 1 | 11 |
| Runs-Test Result: 1.4289 RESIDUALS RUNS RANDOM | | | | | | |
| Coefficients | S.E. | t-Stat | p-value | C.I. Lower | 0.99 Upper | Selected Coeff. |
| 1 | 2 | | | | | |
| Intercept | (41.692) | 22.9438 | (1.817) | 0.0799 | (105.092) | 21.7079 (41.692) 11 |
| Season | (0.010) | 0.0586 | (0.176) | 0.8615 | (0.172) | 0.1517 (0.010) 10 |
| All Years | 0.0231 | 0.0115 | 2.0094 | 0.0542 | (0.009) | 0.0548 0.0231 9 |
| Scalar 1 | (8.961) | 46.0114 | (0.195) | 0.8470 | (136.102) | 118.1812 (8.961) 8 |
| Trend 1 | 0.0044 | 0.0229 | 0.1904 | 0.8504 | (0.059) | 0.0677 0.0044 7 |
| Scalar 2 | - | - | - | 1.0000 | - | - 6 |
| Trend 2 | - | - | - | 1.0000 | - | - 5 |
| Scalar 3 | - | - | - | 1.0000 | - | - 4 |
| Trend 3 | - | - | - | 1.0000 | - | - 3 |
| Scalar 4 | - | - | - | 1.0000 | - | - 2 |
| Trend 4 | - | - | - | 1.0000 | - | - 1 |

Trends are Annual

| ANOVA | | | | | |
|------------|----|--------|--------|--------|----------------|
| | df | SS | MS | F | Significance F |
| Regression | 10 | 0.4861 | 0.0486 | 1.4580 | 0.2072 |
| Residual | 28 | 0.9334 | 0.0333 | | |
| Total | 38 | 1.4195 | | | |

| | Fitted Annual | Previous Selected | Selected Annual | |
|--------|---------------|-------------------|-----------------|--------------------------------|
| | | | | selected = fitted |
| past | 2.8% | 3.8% | 2.8% | '12H2 => last period in "past" |
| future | 2.8% | 1.9% | 2.8% | |



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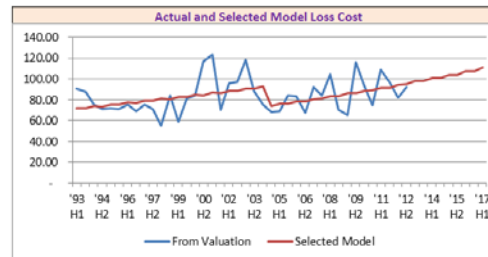
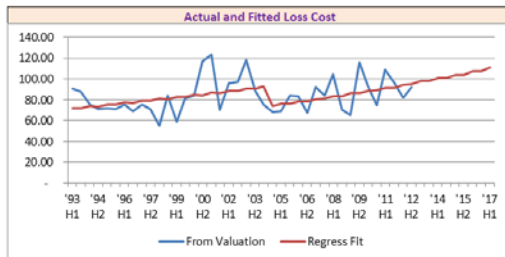
Property Damage Loss Cost Model – Based on Severity Structure and Data Periods

| REGRESSION STATISTICS | | | | | | |
|---|----------|-------------|------------------|-------------|--------------------|---------------------|
| Multiple R | R2 | Adjusted R2 | S.E. of Estimate | # of Obs. n | # of Obs. Excluded | k |
| 0.5955 | 0.3546 | 0.1321 | 0.1801 | 40 | - | 11 |
| Runs-Test Result: 1.4289 RESIDUALS RUNS RANDOM | | | | | | |
| Coefficients | S.E. | t-Stat | p-value | C.I. Lower | 0.99 Upper | Selected Coeff. |
| 1 | 2 | | | | | |
| Intercept | (41.685) | 22.6305 | (1.842) | 0.0757 | (104.063) | 20.6935 (41.685) 11 |
| Season | (0.015) | 0.0570 | (0.267) | 0.7916 | (0.172) | 0.1420 (0.015) 10 |
| All Years | 0.0231 | 0.0113 | 2.0373 | 0.0508 | (0.008) | 0.0543 0.0231 9 |
| Scalar 1 | (17.122) | 42.3693 | (0.404) | 0.6891 | (133.908) | 99.6646 (17.122) 8 |
| Trend 1 | 0.0084 | 0.0211 | 0.3989 | 0.6929 | (0.050) | 0.0666 0.0084 7 |
| Scalar 2 | - | - | - | 1.0000 | - | - 6 |
| Trend 2 | - | - | - | 1.0000 | - | - 5 |
| Scalar 3 | - | - | - | 1.0000 | - | - 4 |
| Trend 3 | - | - | - | 1.0000 | - | - 3 |
| Scalar 4 | - | - | - | 1.0000 | - | - 2 |
| Trend 4 | - | - | - | 1.0000 | - | - 1 |

Trends are Annual

| ANOVA | | | | | |
|------------|----|--------|--------|--------|----------------|
| | df | SS | MS | F | Significance F |
| Regression | 10 | 0.5168 | 0.0517 | 1.5936 | 0.1583 |
| Residual | 29 | 0.9405 | 0.0324 | | |
| Total | 39 | 1.4574 | | | |

| | Fitted Annual | Previous Selected | Selected Annual | |
|--------|---------------|-------------------|-----------------|--------------------------------|
| | | | | selected = fitted |
| past | 3.2% | 3.8% | 3.2% | '11H2 => last period in "past" |
| future | 3.2% | 1.9% | 3.2% | |



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*Property Damage Loss Cost Model – Based on **Frequency** Structure and Data Periods, with parameters adjusted based on p-values*

| REGRESSION STATISTICS | | | | | | |
|-----------------------|--------|-------------|------------------|-------------|--------------------|----|
| Multiple R | R2 | Adjusted R2 | S.E. of Estimate | # of Obs. n | # of Obs. Excluded | k |
| 0.5047 | 0.2547 | (0.011) | 0.1944 | 39 | 1 | 11 |

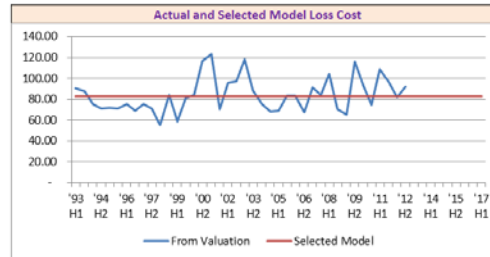
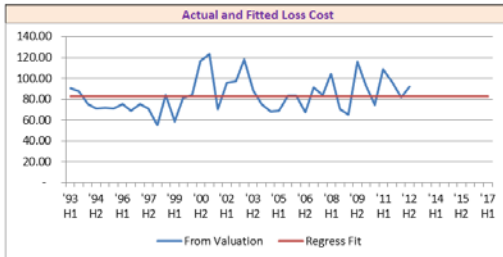
Runs-Test Result: 1.1508 **RESIDUALS RUNS RANDOM**

| | Coefficients | | t-Stat | p-value | C.I. | | Selected Coeff. |
|-----------|--------------|--------|----------|---------|--------|--------|-----------------|
| | 1 | 2 | | | Lower | Upper | |
| Intercept | 4.4162 | 0.0311 | 141.8848 | 0.0000 | 4.3302 | 4.5022 | 4.4162 11 |
| Season | - | - | - | 1.0000 | - | - | - 10 |
| All Years | - | - | - | 1.0000 | - | - | - 9 |
| Scalar 1 | - | - | - | 1.0000 | - | - | - 8 |
| Trend 1 | - | - | - | 1.0000 | - | - | - 7 |
| Scalar 2 | - | - | - | 1.0000 | - | - | - 6 |
| Trend 2 | - | - | - | 1.0000 | - | - | - 5 |
| Scalar 3 | - | - | - | 1.0000 | - | - | - 4 |
| Trend 3 | - | - | - | 1.0000 | - | - | - 3 |
| Scalar 4 | - | - | - | 1.0000 | - | - | - 2 |
| Trend 4 | - | - | - | 1.0000 | - | - | - 1 |

Trends are Annual

| ANOVA | | | | | |
|------------|----|--------|--------|--------|----------------|
| | df | SS | MS | F | Significance F |
| Regression | 10 | 0.3616 | 0.0362 | 0.9570 | 0.5000 |
| Residual | 28 | 1.0579 | 0.0378 | | |
| Total | 38 | 1.4195 | | | |

| | Fitted Annual | Previous Selected | Selected Annual | |
|--------|---------------|-------------------|-----------------|--------------------------------|
| | | | | selected = fitted |
| past | 0.0% | 3.8% | 0.0% | '12H2 => last period in "past" |
| future | 0.0% | 1.9% | 0.0% | |



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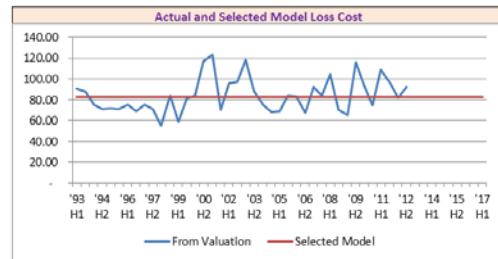
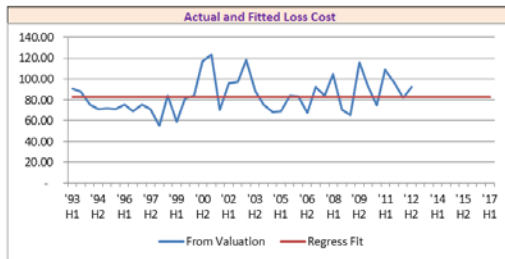
Property Damage Loss Cost Model – Based on Severity Structure and Data Periods, with parameters adjusted based on p-values

| REGRESSION STATISTICS | | | | | | | | |
|---|---------------|----------------|------------------|-------------|--------------------|-----------------|---------------|----|
| Multiple R | R2 | Adjusted R2 | S.E. of Estimate | # of Obs. n | # of Obs. Excluded | k | | |
| 0.4888 | 0.2389 | (0.024) | 0.1956 | 40 | - | 11 | | |
| Runs-Test Result: 1.1508 RESIDUALS RUNS RANDOM | | | | | | | | |
| Coefficients | S.E. | t-Stat | p-value | C.I. Lower | 0.99 Upper | Selected Coeff. | | |
| 1 | 2 | | | | | | | |
| Intercept | 4.4113 | 0.0309 | 142.6546 | 0.0000 | 4.3261 | 4.4965 | 4.4113 | 11 |
| Season | - | - | - | 1.0000 | - | - | - | 10 |
| All Years | - | - | - | 1.0000 | - | - | - | 9 |
| Scalar 1 | - | - | - | 1.0000 | - | - | - | 8 |
| Trend 1 | - | - | - | 1.0000 | - | - | - | 7 |
| Scalar 2 | - | - | - | 1.0000 | - | - | - | 6 |
| Trend 2 | - | - | - | 1.0000 | - | - | - | 5 |
| Scalar 3 | - | - | - | 1.0000 | - | - | - | 4 |
| Trend 3 | - | - | - | 1.0000 | - | - | - | 3 |
| Scalar 4 | - | - | - | 1.0000 | - | - | - | 2 |
| Trend 4 | - | - | - | 1.0000 | - | - | - | 1 |

Trends are Annual

| ANOVA | | | | | |
|------------|----|--------|--------|--------|----------------|
| | df | SS | MS | F | Significance F |
| Regression | 10 | 0.3482 | 0.0348 | 0.9103 | 0.5368 |
| Residual | 29 | 1.1092 | 0.0382 | | |
| Total | 39 | 1.4574 | | | |

| | Fitted Annual | Previous Selected | Selected Annual | |
|--------|---------------|-------------------|-----------------|--------------------------------|
| | | | | selected = fitted |
| past | 0.0% | 3.8% | 0.0% | '11H2 => last period in "past" |
| future | 0.0% | 1.9% | 0.0% | |



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Accident Benefits

51 For accident benefits, the period structure selected for frequency and severity were the same, and in both
 52 cases, seasonality was not as a parameter. There were no data exclusions. The fitted loss cost trend
 53 using these periods is the same 7.6% as determined via fitting frequency and severity separately. The
 54 loss cost fit results are shown on the next page.

55 *Accident Benefits Loss Cost Model – Based on Original Selected Structure and Data Periods*

| REGRESSION STATISTICS | | | | | | |
|-----------------------|---------------|---------------|------------------|-------------|--------------------|----|
| Multiple R | R2 | Adjusted R2 | S.E. of Estimate | # of Obs. n | # of Obs. Excluded | k |
| 0.8754 | 0.7664 | 0.6858 | 0.4847 | 40 | - | 11 |

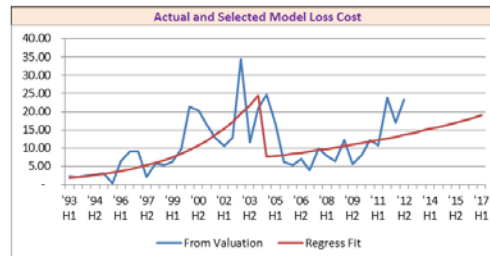
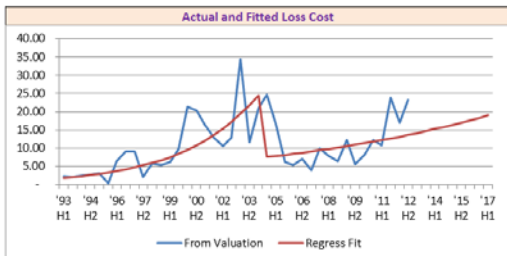
Runs-Test Result: 1.1373 **RESIDUALS RUNS RANDOM**

| | Coefficients | | t-Stat | p-value | C.I. | | Selected Coeff. |
|-----------|--------------|----------|---------|---------|-----------|-----------|-----------------|
| | 1 | 2 | | | Lower | Upper | |
| Intercept | (468.716) | 60.9108 | (7.695) | 0.0000 | (636.610) | (300.823) | (468.716) |
| Season | - | - | - | 1.0000 | - | - | - |
| All Years | 0.2355 | 0.0305 | 7.7264 | 0.0000 | 0.1515 | 0.3195 | 0.2355 |
| Scalar 1 | 323.2468 | 114.0394 | 2.8345 | 0.0083 | 8.9102 | 637.5833 | 323.2468 |
| Trend 1 | (0.162) | 0.0569 | (2.847) | 0.0080 | (0.319) | (0.005) | (0.162) |
| Scalar 2 | - | - | - | 1.0000 | - | - | - |
| Trend 2 | - | - | - | 1.0000 | - | - | - |
| Scalar 3 | - | - | - | 1.0000 | - | - | - |
| Trend 3 | - | - | - | 1.0000 | - | - | - |
| Scalar 4 | - | - | - | 1.0000 | - | - | - |
| Trend 4 | - | - | - | 1.0000 | - | - | - |

Trends are Annual

| ANOVA | | | | | |
|------------|----|---------|--------|--------|----------------|
| | df | SS | MS | F | Significance F |
| Regression | 10 | 22.3486 | 2.2349 | 9.5118 | 0.0000 |
| Residual | 29 | 6.8138 | 0.2350 | | |
| Total | 39 | 29.1624 | | | |

| | Fitted Annual | Previous Selected | Selected Annual | |
|--------|---------------|-------------------|-----------------|--------------------------------|
| | | | | selected = fitted |
| past | 7.6% | 1.6% | 7.6% | '12H2 => last period in "past" |
| future | 7.6% | 4.2% | 7.6% | |



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57 **Uninsured Automobile**

58 For uninsured automobile, the frequency and severity model structure was taken from the Accident
59 Benefits structure. We have assumed that the loss cost fit is not necessary.

60 **Collision**

61 For collision, the period structure selected for frequency and severity were the same, and in both cases,
62 seasonality was not as a parameter. There were no data exclusions. The fitted loss cost trend using the
63 “past” and “future” periods are the same 0.1% as determined via fitting frequency and severity
64 separately. The loss cost fit results are shown on the next page. However, the p-values fall out of our
65 general range and adjusting parameter selections based on this result in a trend of 2.4%. The results are
66 shown on the pages that follow.

67

Collision Loss Cost Model – Based on Original Selected Structure and Data Periods

| REGRESSION STATISTICS | | | | | | |
|-----------------------|---------------|---------------|------------------|-------------|--------------------|----|
| Multiple R | R2 | Adjusted R2 | S.E. of Estimate | # of Obs. n | # of Obs. Excluded | k |
| 0.6431 | 0.4136 | 0.2041 | 0.2316 | 39 | 1 | 11 |

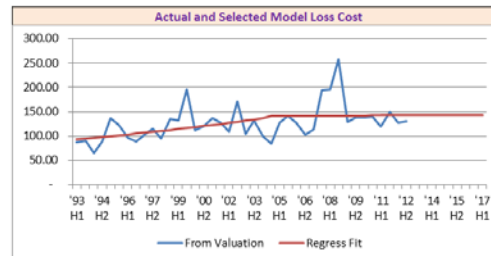
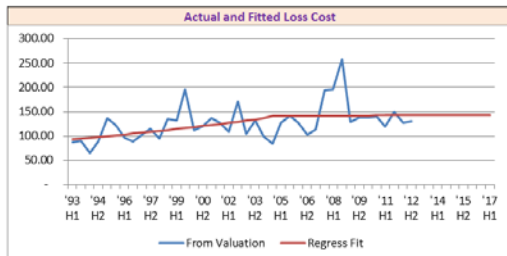
Runs-Test Result: 1.1514 **RESIDUALS RUNS RANDOM**

| | Coefficients | | t-Stat | p-value | C.I. | | 0.99 Upper | Selected Coeff. | |
|-----------|--------------|---------|---------|---------|-----------|----------|------------|-----------------|----|
| | 1 | 2 | | | Lower | Upper | | | |
| Intercept | (65.238) | 29.1043 | (2.242) | 0.0331 | (145.661) | 15.1853 | (65.238) | 11 | |
| Season | - | - | - | 1.0000 | - | - | - | - | 10 |
| All Years | 0.0350 | 0.0146 | 2.4038 | 0.0231 | (0.005) | 0.0752 | 0.0350 | 9 | |
| Scalar 1 | 67.6614 | 58.2601 | 1.1614 | 0.2553 | (93.327) | 228.6493 | 67.6614 | 8 | |
| Trend 1 | (0.034) | 0.0290 | (1.162) | 0.2550 | (0.114) | 0.0465 | (0.034) | 7 | |
| Scalar 2 | - | - | - | 1.0000 | - | - | - | 6 | |
| Trend 2 | - | - | - | 1.0000 | - | - | - | 5 | |
| Scalar 3 | - | - | - | 1.0000 | - | - | - | 4 | |
| Trend 3 | - | - | - | 1.0000 | - | - | - | 3 | |
| Scalar 4 | - | - | - | 1.0000 | - | - | - | 2 | |
| Trend 4 | - | - | - | 1.0000 | - | - | - | 1 | |

Trends are Annual

| ANOVA | | | | | |
|------------|----|--------|--------|--------|----------------|
| | df | SS | MS | F | Significance F |
| Regression | 10 | 1.0592 | 0.1059 | 1.9746 | 0.0762 |
| Residual | 28 | 1.5020 | 0.0536 | | |
| Total | 38 | 2.5612 | | | |

| | Fitted Annual | Previous Selected | Selected Annual | |
|--------|---------------|-------------------|-----------------|--------------------------------|
| | | | | selected = fitted |
| past | 0.1% | 0.0% | 0.1% | '12H2 => last period in "past" |
| future | 0.1% | 0.0% | 0.1% | |



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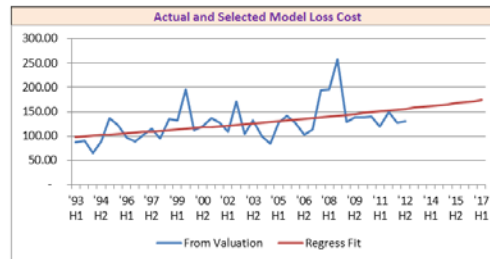
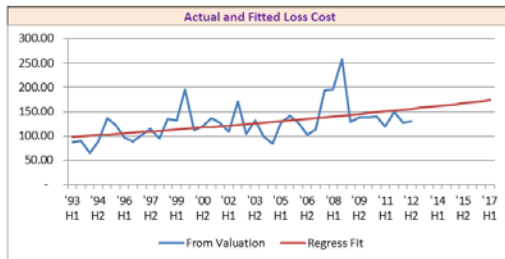
*Collision Loss Cost Model – Based on **Original Selected Structure and Data Periods**, with parameters adjusted based on p-values*

| REGRESSION STATISTICS | | | | | | | |
|---|---------------|---------------|------------------|-------------|--------------------|-----------------|-------------|
| Multiple R | R2 | Adjusted R2 | S.E. of Estimate | # of Obs. n | # of Obs. Excluded | k | |
| 0.6527 | 0.4260 | 0.2210 | 0.2291 | 39 | 1 | 11 | |
| Runs-Test Result: 0.7919 RESIDUALS RUNS RANDOM | | | | | | | |
| Coefficients | S.E. | t-Stat | p-value | C.I. Lower | 0.99 Upper | Selected Coeff. | |
| 1 | 2 | | | | | | |
| Intercept | (42.467) | 12.5880 | (3.374) | 0.0022 | (77.251) | (7.683) | (42.467) 11 |
| Season | - | - | - | 1.0000 | - | - | - 10 |
| All Years | 0.0236 | 0.0063 | 3.7565 | 0.0008 | 0.0062 | 0.0410 | 0.0236 9 |
| Scalar 1 | - | - | - | 1.0000 | - | - | - 8 |
| Trend 1 | - | - | - | 1.0000 | - | - | - 7 |
| Scalar 2 | - | - | - | 1.0000 | - | - | - 6 |
| Trend 2 | - | - | - | 1.0000 | - | - | - 5 |
| Scalar 3 | - | - | - | 1.0000 | - | - | - 4 |
| Trend 3 | - | - | - | 1.0000 | - | - | - 3 |
| Scalar 4 | - | - | - | 1.0000 | - | - | - 2 |
| Trend 4 | - | - | - | 1.0000 | - | - | - 1 |

Trends are Annual

| ANOVA | | | | | |
|------------|----|--------|--------|--------|----------------|
| | df | SS | MS | F | Significance F |
| Regression | 10 | 1.0911 | 0.1091 | 2.0780 | 0.0623 |
| Residual | 28 | 1.4702 | 0.0525 | | |
| Total | 38 | 2.5612 | | | |

| | Fitted Annual | Previous Selected | Selected Annual | |
|--------|---------------|-------------------|-----------------|--------------------------------|
| | | | | selected = fitted |
| past | 2.4% | 0.0% | 2.4% | '12H2 => last period in "past" |
| future | 2.4% | 0.0% | 2.4% | |



71

72 **Comprehensive**

73 For comprehensive, the period structure selected for frequency and severity were the same, and in both
 74 cases, seasonality was not as a parameter. In both cases, 1993-H1 to 1994-H1 inclusive were excluded.
 75 The fitted loss cost trend using the “past” and “future” periods are the same 5.1% as determined via
 76 fitting frequency and severity separately. The loss cost fit results are shown on the next page. However,
 77 the p-values fall out of our general range and adjusting parameter selections based on this result in a
 78 trend of 2.4%. The results are shown on the pages that follow.

79

Comprehensive Loss Cost Model – Based on Original Selected Structure and Data Periods

| REGRESSION STATISTICS | | | | | | |
|-----------------------|---------------|---------------|------------------|-------------|--------------------|----|
| Multiple R | R2 | Adjusted R2 | S.E. of Estimate | # of Obs. n | # of Obs. Excluded | k |
| 0.6725 | 0.4522 | 0.2416 | 0.3038 | 37 | 3 | 11 |

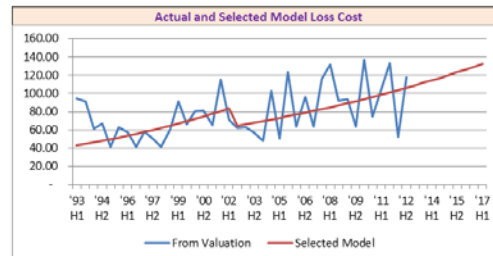
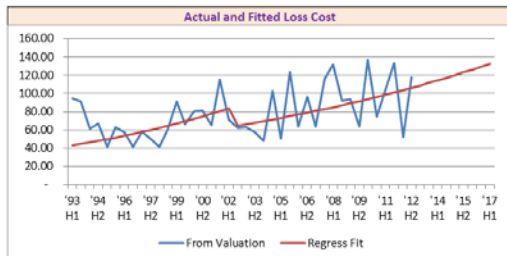
Runs-Test Result: 1.5618 **RESIDUALS RUNS RANDOM**

| | Coefficients | | t-Stat | p-value | C.I. | | Selected Coeff. |
|-----------|--------------|---------|---------|---------|-----------|----------|-----------------|
| | 1 | 2 | | | Lower | Upper | |
| Intercept | (142.821) | 65.8478 | (2.169) | 0.0394 | (325.794) | 40.1510 | (142.821) 11 |
| Season | - | - | - | 1.0000 | - | - | - 10 |
| All Years | 0.0735 | 0.0329 | 2.2320 | 0.0344 | (0.018) | 0.1651 | 0.0735 9 |
| Scalar 1 | 47.8442 | 79.1724 | 0.6043 | 0.5509 | (172.153) | 267.8418 | 47.8442 8 |
| Trend 1 | (0.024) | 0.0396 | (0.608) | 0.5488 | (0.134) | 0.0859 | (0.024) 7 |
| Scalar 2 | - | - | - | 1.0000 | - | - | - 6 |
| Trend 2 | - | - | - | 1.0000 | - | - | - 5 |
| Scalar 3 | - | - | - | 1.0000 | - | - | - 4 |
| Trend 3 | - | - | - | 1.0000 | - | - | - 3 |
| Scalar 4 | - | - | - | 1.0000 | - | - | - 2 |
| Trend 4 | - | - | - | 1.0000 | - | - | - 1 |

Trends are Annual

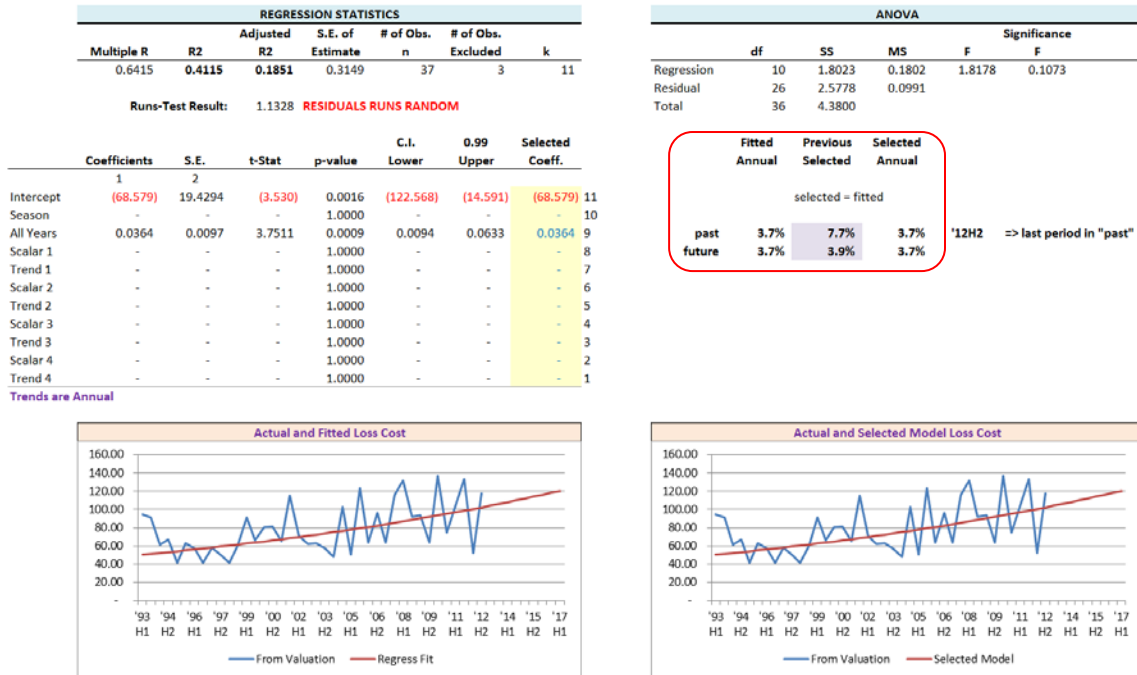
| ANOVA | | | | | |
|------------|----|--------|--------|--------|----------------|
| | df | SS | MS | F | Significance F |
| Regression | 10 | 1.9808 | 0.1981 | 2.1466 | 0.0574 |
| Residual | 26 | 2.3992 | 0.0923 | | |
| Total | 36 | 4.3800 | | | |

| | Fitted Annual | Previous Selected | Selected Annual | |
|--------|---------------|-------------------|-----------------|--------------------------------|
| | | | | selected = fitted |
| past | 5.1% | 7.7% | 5.1% | '12H2 => last period in "past" |
| future | 5.1% | 3.9% | 5.1% | |



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81 *Comprehensive Loss Cost Model – Based on **Original Selected** Structure and Data Periods, with*
 82 *parameters adjusted based on p-values*



83
 84 **Specified Perils**

85 For specified perils, the frequency and severity model structure was taken from the Comprehensive
 86 structure. We have assumed that the loss cost fit is not necessary.

87 **All Perils**

88 For all perils, the period structure selected for frequency and severity were the same, and in both cases,
 89 seasonality was not as a parameter. There were no data exclusions. The fitted loss cost trend using the
 90 “past” and “future” periods are the same 1.8% as determined via fitting frequency and severity
 91 separately. The loss cost fit results are shown on the next page. However, the p-values fall out of our
 92 general range and adjusting parameter selections based on this result in a trend of 0.0%, and seasonality
 93 became significant. The results are shown on the pages that follow.

94

All Perils Loss Cost Model – Based on Original Selected Structure and Data Periods

| REGRESSION STATISTICS | | | | | | |
|-----------------------|---------------|---------------|------------------|-------------|--------------------|----|
| Multiple R | R2 | Adjusted R2 | S.E. of Estimate | # of Obs. n | # of Obs. Excluded | k |
| 0.6055 | 0.3666 | 0.1482 | 0.2714 | 40 | - | 11 |

Runs-Test Result: 1.8084 **RESIDUALS RUNS RANDOM**

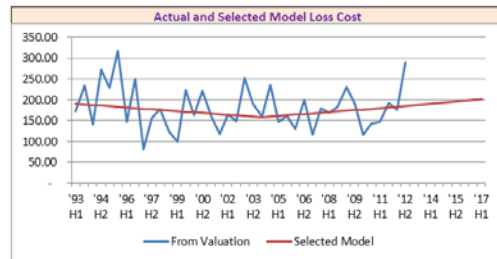
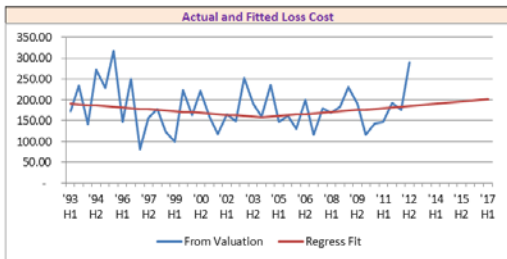
| ANOVA | | | | | |
|------------|----|--------|--------|--------|----------------|
| | df | SS | MS | F | Significance F |
| Regression | 10 | 1.2367 | 0.1237 | 1.6788 | 0.1340 |
| Residual | 29 | 2.1364 | 0.0737 | | |
| Total | 39 | 3.3731 | | | |

| | Coefficients | S.E. | t-Stat | p-value | C.I. Lower | 0.99 Upper | Selected Coeff. | |
|-----------|--------------|---------|---------|---------|------------|------------|-----------------|----|
| | 1 | 2 | | | | | | |
| Intercept | 38.6542 | 34.1068 | 1.1333 | 0.2664 | (55.357) | 132.6657 | 38.6542 | 11 |
| Season | - | - | - | 1.0000 | - | - | - | 10 |
| All Years | (0.017) | 0.0171 | (0.982) | 0.3342 | (0.064) | 0.0303 | (0.017) | 9 |
| Scalar 1 | (70.238) | 63.8560 | (1.100) | 0.2804 | (246.249) | 105.7741 | (70.238) | 8 |
| Trend 1 | 0.0350 | 0.0318 | 1.1008 | 0.2800 | (0.053) | 0.1228 | 0.0350 | 7 |
| Scalar 2 | - | - | - | 1.0000 | - | - | - | 6 |
| Trend 2 | - | - | - | 1.0000 | - | - | - | 5 |
| Scalar 3 | - | - | - | 1.0000 | - | - | - | 4 |
| Trend 3 | - | - | - | 1.0000 | - | - | - | 3 |
| Scalar 4 | - | - | - | 1.0000 | - | - | - | 2 |
| Trend 4 | - | - | - | 1.0000 | - | - | - | 1 |

Trends are Annual

| | Fitted Annual | Previous Selected | Selected Annual | |
|--------|---------------|-------------------|-----------------|--------------------------------|
| | | | | selected = fitted |
| past | 1.8% | 0.0% | 1.8% | '11H2 => last period in "past" |
| future | 1.8% | 0.0% | 1.8% | |

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*All Perils Loss Cost Model – Based on **Original Selected** Structure and Data Periods, with parameters adjusted based on p-values*

| REGRESSION STATISTICS | | | | | | |
|-----------------------|---------------|---------------|------------------|-------------|--------------------|----|
| Multiple R | R2 | Adjusted R2 | S.E. of Estimate | # of Obs. n | # of Obs. Excluded | k |
| 0.6764 | 0.4575 | 0.2704 | 0.2512 | 40 | - | 11 |

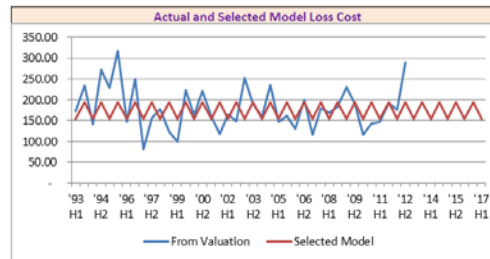
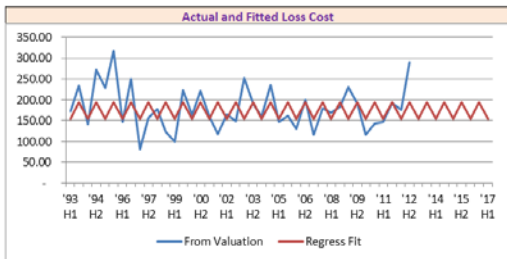
Runs-Test Result: 0.8220 **RESIDUALS RUNS RANDOM**

| ANOVA | | | | | |
|------------|----|--------|--------|--------|----------------|
| | df | SS | MS | F | Significance F |
| Regression | 10 | 1.5431 | 0.1543 | 2.4452 | 0.0294 |
| Residual | 29 | 1.8301 | 0.0631 | | |
| Total | 39 | 3.3731 | | | |

| | Coefficients | S.E. | t-Stat | p-value | C.I. Lower | 0.99 Upper | Selected Coeff. |
|-----------|--------------|--------|---------|---------|------------|------------|-----------------|
| | 1 | 2 | | | | | |
| Intercept | 4.7979 | 0.1256 | 38.1989 | 0.0000 | 4.4517 | 5.1442 | 4.7979 11 |
| Season | 0.2363 | 0.0794 | 2.9742 | 0.0059 | 0.0173 | 0.4552 | 0.2363 10 |
| All Years | - | - | - | 1.0000 | - | - | - 9 |
| Scalar 1 | - | - | - | 1.0000 | - | - | - 8 |
| Trend 1 | - | - | - | 1.0000 | - | - | - 7 |
| Scalar 2 | - | - | - | 1.0000 | - | - | - 6 |
| Trend 2 | - | - | - | 1.0000 | - | - | - 5 |
| Scalar 3 | - | - | - | 1.0000 | - | - | - 4 |
| Trend 3 | - | - | - | 1.0000 | - | - | - 3 |
| Scalar 4 | - | - | - | 1.0000 | - | - | - 2 |
| Trend 4 | - | - | - | 1.0000 | - | - | - 1 |

Trends are Annual

| | Fitted Annual | Previous Selected | Selected Annual | |
|--------|---------------|-------------------|-----------------|--------------------------------|
| | | | | selected = fitted |
| past | 0.0% | 0.0% | 0.0% | '11H2 => last period in "past" |
| future | 0.0% | 0.0% | 0.0% | |



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