

Facility Association - Trend Analysis - Industry - OW Approach

NL - CV

BI

as at: Dec 31, 2012

actual observations:	40
excluded observations:	24
# observations used:	16

Level Options:	Freq	Sev	LC
At Selected Ultimate Levels	1	R	S T
At Favourable Levels	2	V	W X
At Unfavourable Levels	3	Z	AA AB

MODEL DESCRIPTION Regulator LC avg 1: latest 10 yrs only, excluding 2 highest and 2 lowest by % change

Loss Costs Ir Loss Costs in: \$1s

Level Selected: 1

At Selected Ultimate Levels

Chart Periods	Exclude Data Point (y)?	Trend Periods based on average accident date where scalar present										Loss Cost Values				% chg	
		Season	All Years	Scalar 1	Trend 1	Scalar 2	Trend 2	Scalar 3	Trend 3	Scalar 4	Trend 4	From Valuation	Fitted Model	Fitted Model Residual	Selected Model		Selected Model Residual
		0	1	0	0	0	0	0	0	0	0						
'93H1	y	1	1993.25	-	-	-	-	-	-	-	-	-	367.28	(187.28)	398.17	(398.17)	
'93H2	y	2	1993.75	-	-	-	-	-	-	-	-	-	383.90	(383.90)	395.17	(395.17)	
'94H1	y	1	1994.25	-	-	-	-	-	-	-	-	-	380.55	(380.55)	392.20	(392.20)	
'94H2	y	2	1994.75	-	-	-	-	-	-	-	-	-	377.23	(377.23)	389.25	(389.25)	
'95H1	y	1	1995.25	-	-	-	-	-	-	-	-	-	373.94	(373.94)	386.32	(386.32)	
'95H2	y	2	1995.75	-	-	-	-	-	-	-	-	-	370.68	(370.68)	383.41	(383.41)	
'96H1	y	1	1996.25	-	-	-	-	-	-	-	-	-	367.45	(367.45)	380.52	(380.52)	
'96H2	y	2	1996.75	-	-	-	-	-	-	-	-	-	364.25	(364.25)	377.66	(377.66)	
'97H1	y	1	1997.25	-	-	-	-	-	-	-	-	-	361.07	(361.07)	374.82	(374.82)	
'97H2	y	2	1997.75	-	-	-	-	-	-	-	-	-	357.93	(357.93)	372.00	(372.00)	
'98H1	y	1	1998.25	-	-	-	-	-	-	-	-	180.58	354.80	(174.22)	369.20	(188.62)	
'98H2	y	2	1998.75	-	-	-	-	-	-	-	-	303.54	351.71	(48.17)	366.42	(62.68)	
'99H1	y	1	1999.25	-	-	-	-	-	-	-	-	329.87	348.64	(18.77)	363.66	(33.79)	83%
'99H2	y	2	1999.75	-	-	-	-	-	-	-	-	363.05	345.60	17.45	360.92	2.13	20%
'00H1	y	1	2000.25	-	-	-	-	-	-	-	-	302.89	342.59	(39.70)	358.21	(55.32)	-8%
'00H2	y	2	2000.75	-	-	-	-	-	-	-	-	453.77	339.60	114.17	355.51	98.26	25%
'01H1	y	1	2001.25	-	-	-	-	-	-	-	-	428.08	336.64	91.44	352.83	75.25	41%
'01H2	y	2	2001.75	-	-	-	-	-	-	-	-	629.01	333.71	295.30	350.18	278.83	39%
'02H1	y	1	2002.25	-	-	-	-	-	-	-	-	713.39	330.80	382.59	347.54	365.85	67%
'02H2	y	2	2002.75	-	-	-	-	-	-	-	-	315.24	327.92	(12.68)	344.93	(28.69)	-50%
'03H1	y	1	2003.25	-	-	-	-	-	-	-	-	430.12	325.06	105.06	342.33	87.79	-60%
'03H2	y	2	2003.75	-	-	-	-	-	-	-	-	390.31	322.22	68.09	339.75	50.56	24%
'04H1	y	1	2004.25	-	-	-	-	-	-	-	-	387.68	319.41	68.27	337.20	50.48	-10%
'04H2	y	2	2004.75	-	-	-	-	-	-	-	-	262.67	316.63	(53.96)	334.66	(71.99)	-33%
'05H1	y	1	2005.25	-	-	-	-	-	-	-	-	211.21	313.87	(102.66)	332.14	(120.93)	-65%
'05H2	y	2	2005.75	-	-	-	-	-	-	-	-	305.53	311.13	(5.60)	329.64	(24.11)	16%
'06H1	y	1	2006.25	-	-	-	-	-	-	-	-	285.03	308.42	(23.39)	327.16	(42.13)	35%
'06H2	y	2	2006.75	-	-	-	-	-	-	-	-	272.56	305.73	(33.17)	324.70	(52.14)	-11%
'07H1	y	1	2007.25	-	-	-	-	-	-	-	-	267.68	303.06	(35.38)	322.25	(54.57)	-6%
'07H2	y	2	2007.75	-	-	-	-	-	-	-	-	448.75	300.42	148.33	319.83	128.92	65%
'08H1	y	1	2008.25	-	-	-	-	-	-	-	-	340.14	297.80	42.34	317.42	22.72	27%
'08H2	y	2	2008.75	-	-	-	-	-	-	-	-	302.26	295.21	7.05	315.03	(12.77)	-33%
'09H1	y	1	2009.25	-	-	-	-	-	-	-	-	251.11	292.63	(41.52)	312.66	(61.55)	-26%
'09H2	y	2	2009.75	-	-	-	-	-	-	-	-	329.62	290.08	39.54	310.31	19.31	9%
'10H1	y	1	2010.25	-	-	-	-	-	-	-	-	245.94	287.55	(41.61)	307.97	(67.03)	-2%
'10H2	y	2	2010.75	-	-	-	-	-	-	-	-	303.59	285.04	18.55	305.65	(2.06)	-8%
'11H1	y	1	2011.25	-	-	-	-	-	-	-	-	257.85	282.56	(24.71)	303.35	(45.50)	5%
'11H2	y	2	2011.75	-	-	-	-	-	-	-	-	475.19	280.10	195.09	301.07	174.12	57%
'12H1	y	1	2012.25	-	-	-	-	-	-	-	-	275.50	277.65	(2.15)	298.80	(23.30)	7%
'12H2	y	2	2012.75	-	-	-	-	-	-	-	-	335.74	275.23	60.51	296.55	39.19	-29%
'13H1	y	1	2013.25	-	-	-	-	-	-	-	-	272.83			294.32		
'13H2	y	2	2013.75	-	-	-	-	-	-	-	-	270.45			292.11		
'14H1	y	1	2014.25	-	-	-	-	-	-	-	-	268.10			289.91		
'14H2	y	2	2014.75	-	-	-	-	-	-	-	-	265.76			287.73		
'15H1	y	1	2015.25	-	-	-	-	-	-	-	-	263.44			285.56		
'15H2	y	2	2015.75	-	-	-	-	-	-	-	-	261.14			283.41		
'16H1	y	1	2016.25	-	-	-	-	-	-	-	-	258.87			281.28		
'16H2	y	2	2016.75	-	-	-	-	-	-	-	-	256.61			279.16		
'17H1	y	1	2017.25	-	-	-	-	-	-	-	-	254.37			277.06		
'17H2	y	2	2017.75	-	-	-	-	-	-	-	-	252.16			274.98		
'18H1	y	1	2018.25	-	-	-	-	-	-	-	-	249.96			272.91		

Facility Association - Trend Analysis - Industry - DW Approach

ML - CV

BI

as at: Dec 31, 2012

actual observations:	40
excluded observations:	24
# observations used:	16

Level Options:	Freq	Sev	LC
At Selected Ultimate Levels	1	R	S T
At Favourable Levels	2	V	W X
At Unfavourable Levels	3	Z	AA AB

MODEL DESCRIPTION Regulator LC avg 1: latest 10 yrs only, excluding 2 highest and 2 lowest by % change

FITTED TREND-STRUCTURE ANOVA					
				Significance	
	df	SS	MS	F	F
Regression	1	0.0371	0.0371	1.8649	0.1936
Residual	14	0.2786	0.0199		
Total	15	0.3157			

FITTED TREND-STRUCTURE REGRESSION STATISTICS						
Multiple R	R2	Adjusted R2	S.E. of Estimate	# of Obs. n	# of Obs. Excluded	k
0.3429	0.1175	0.0545	0.1411	16	24	2

Runs-Test Result: 3.6078 RESIDUALS RUNS NOT RANDOM

parameters with p-value >5%: 2

	Coefficients	S.E.	t-Stat	p-value	C.I.		0.99 Upper	Selected Coeff.	
					Lower	Upper			
Intercept	40.869	23.984	1.704	11.0%	(30.528)	112.266	36.105	11	
Season	-	-	-	n/a	-	-	-	-	10
All Years	(0.018)	0.012	(1.466)	16.5%	(0.053)	0.018	(0.015)	9	
Scalar 1	-	-	-	n/a	-	-	-	8	
Trend 1	-	-	-	n/a	-	-	-	7	
Scalar 2	-	-	-	n/a	-	-	-	6	
Trend 2	-	-	-	n/a	-	-	-	5	
Scalar 3	-	-	-	n/a	-	-	-	4	
Trend 3	-	-	-	n/a	-	-	-	3	
Scalar 4	-	-	-	n/a	-	-	-	2	
Trend 4	-	-	-	n/a	-	-	-	1	

Trends are Annual use "All Years" to match trend; use "Intercept" to match average values

SELECTED TREND-STRUCTURE ANOVA					
				Significance	
	df	SS	MS	F	F
Regression	1	(0.0287)	(0.0287)	(1.1608)	#NUM!
Residual	14	0.3444	0.0246		
Total	15	0.3157			

SELECTED TREND-STRUCTURE REGRESSION STATISTICS						
Multiple R	R2	Adjusted R2	S.E. of Estimate	# of Obs. n	# of Obs. Excluded	k
#NUM!	(0.0908)	(0.1688)	0.1569	16	24	2

Runs-Test Result: 4.1715 RESIDUALS RUNS NOT RANDOM

	Fitted Annual	Previous Selected	Selected Annual	selected does NOT equal fitted!
past	(1.7%)	(2.5%)	(1.5%)	'12H2 => last period in "past"
future	(1.7%)	(2.5%)	(1.5%)	

WHERE SELECTED MODEL COEFFICIENTS ARE TO BE FITTED MANUALLY:

Option 1: set so that averages for selected model = actuals over the period	avg	NOT USED
From Valuation - '03H1 to '12H2	318.92	actual values
Selected Model - '03H1 to '12H2	318.92	selected model values
diff:	-	if used, adjust scalar to make diff zero
Option 2: set to minimize mean square error (MSE)	MSE:	0.0246 NOT USED

