

Crystal Ball Report - Custom

Simulation started on 2012-01-12 at 18:30
Simulation stopped on 2012-01-12 at 18:34

Run preferences:

Number of trials run	10 000
Monte Carlo	
Random seed	

Run statistics:

Total running time (sec)	194,60
Trials/second (average)	51
Random numbers per sec	2 569

Crystal Ball data:

Assumptions	50
Correlations	0
Correlated groups	0
Decision variables	0
Forecasts	15

Forecasts

Worksheet: [S3_Model_Bergen-Stavanger_BS1P_120112.xls]Inputs and results

Forecast: Economic consequences DS, 1 Years

Cell: T117

Summary:

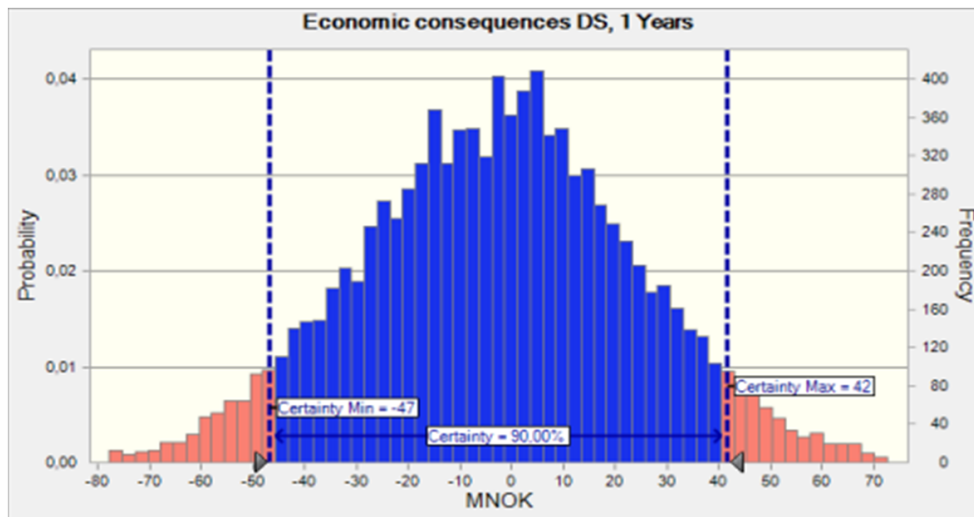
Certainty level is 90,00%

Certainty range is from -47 to 42

Entire range is from -107 to 111

Base case is -3

After 10 000 trials, the std. error of the mean is 0



Forecast: Economic consequences DS, 1 Years (cont'd)

Cell: T117

Statistics:	Forecast values
Trials	10 000
Base Case	-3
Mean	-3
Median	-2
Mode	---
Standard Deviation	27
Variance	720
Skewness	0,0251
Kurtosis	3,01
Coeff. of Variability	-10,43
Minimum	-107
Maximum	111
Range Width	218
Mean Std. Error	0

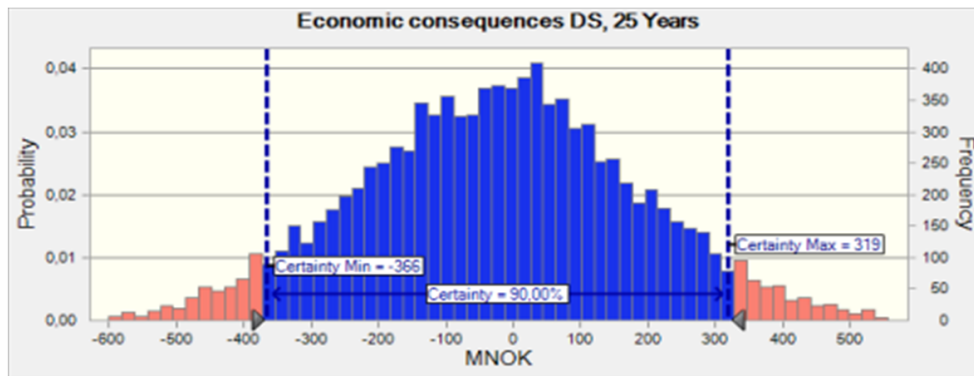
Percentiles:	Forecast values
0%	-107
10%	-37
20%	-25
30%	-17
40%	-9
50%	-2
60%	4
70%	11
80%	20
90%	32
100%	111

Forecast: Economic consequences DS, 25 Years

Cell: W117

Summary:

Certainty level is 90,00%
 Certainty range is from -366 to 319
 Entire range is from -787 to 893
 Base case is -27
 After 10 000 trials, the std. error of the mean is 2



Statistics:	Forecast values
Trials	10 000
Base Case	-27
Mean	-23
Median	-20
Mode	---
Standard Deviation	206
Variance	42 520
Skewness	0,0248
Kurtosis	3,02
Coeff. of Variability	-9,07
Minimum	-787
Maximum	893
Range Width	1 680
Mean Std. Error	2

Forecast: Economic consequences DS, 25 Years (cont'd)

Cell: W117

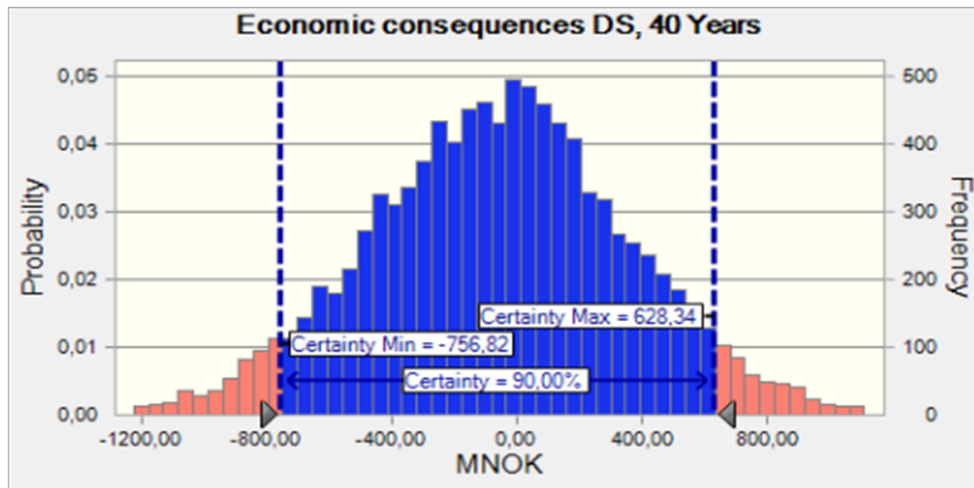
Percentiles:	Forecast values
0%	-787
10%	-290
20%	-197
30%	-130
40%	-74
50%	-20
60%	30
70%	81
80%	147
90%	242
100%	893

Forecast: Economic consequences DS, 40 Years

Cell: Z117

Summary:

Certainty level is 90,00%
 Certainty range is from -756,82 to 628,34
 Entire range is from -1571,47 to 1950,42
 Base case is -67,70
 After 10 000 trials, the std. error of the mean is 4,18



Statistics:	Forecast values
Trials	10 000
Base Case	-67,70
Mean	-58,67
Median	-53,97
Mode	---
Standard Deviation	418,07
Variance	174783,03
Skewness	0,0167
Kurtosis	3,14
Coeff. of Variability	-7,13
Minimum	-1571,47
Maximum	1950,42
Range Width	3521,90
Mean Std. Error	4,18

Forecast: Economic consequences DS, 40 Years (cont'd)

Cell: Z117

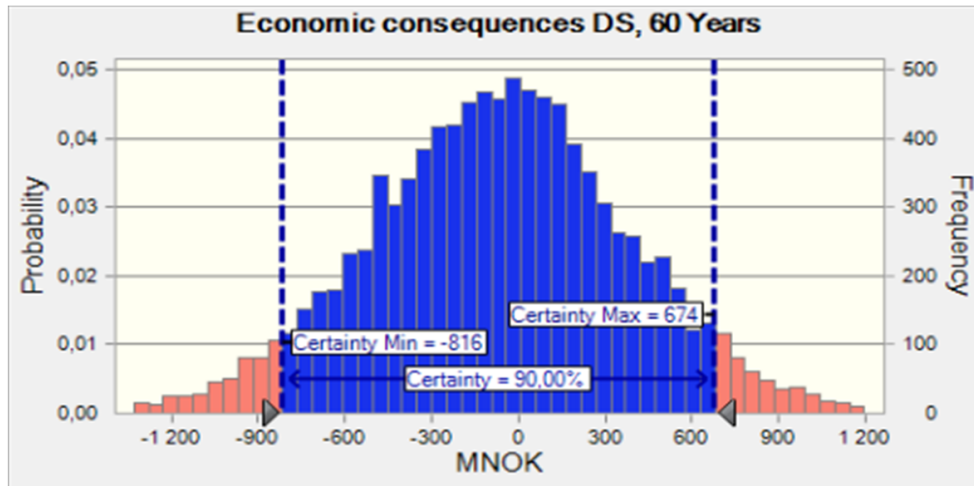
Percentiles:	Forecast values
0%	-1571,47
10%	-596,27
20%	-409,17
30%	-271,04
40%	-160,08
50%	-53,97
60%	45,33
70%	150,90
80%	282,03
90%	477,41
100%	1950,42

Forecast: Economic consequences DS, 60 Years

Cell: AD117

Summary:

Certainty level is 90,00%
 Certainty range is from -816 to 674
 Entire range is from -1 712 to 2 140
 Base case is -77
 After 10 000 trials, the std. error of the mean is 5



Statistics:	Forecast values
Trials	10 000
Base Case	-77
Mean	-68
Median	-62
Mode	---
Standard Deviation	451
Variance	203 434
Skewness	0,0106
Kurtosis	3,20
Coeff. of Variability	-6,68
Minimum	-1 712
Maximum	2 140
Range Width	3 853
Mean Std. Error	5

Forecast: Economic consequences DS, 60 Years (cont'd)

Cell: AD117

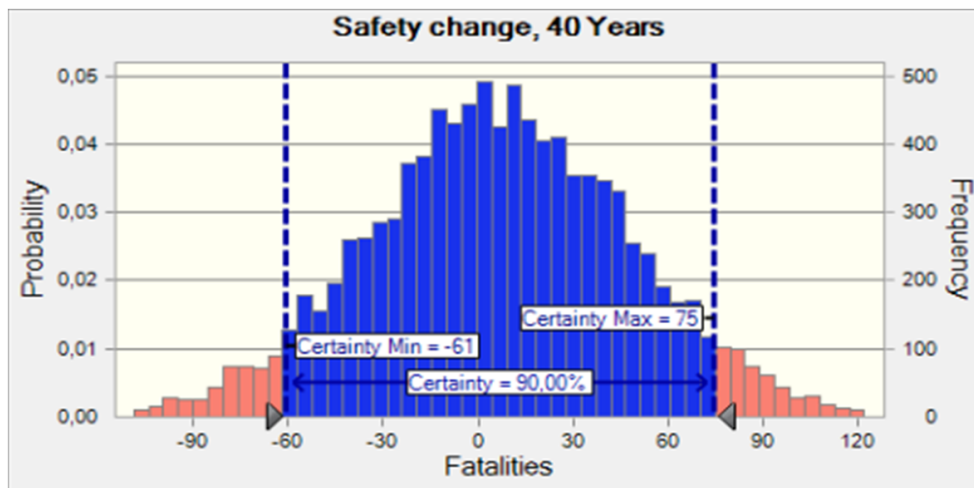
Percentiles:	Forecast values
0%	-1 712
10%	-647
20%	-444
30%	-296
40%	-174
50%	-62
60%	46
70%	157
80%	300
90%	507
100%	2 140

Forecast: Safety change, 40 Years

Cell: Z126

Summary:

Certainty level is 90,00%
 Certainty range is from -61 to 75
 Entire range is from -170 to 157
 Base case is 8
 After 10 000 trials, the std. error of the mean is 0



Statistics:	Forecast values
Trials	10 000
Base Case	8
Mean	7
Median	6
Mode	---
Standard Deviation	41
Variance	1 694
Skewness	-0,0205
Kurtosis	3,03
Coeff. of Variability	6,27
Minimum	-170
Maximum	157
Range Width	327
Mean Std. Error	0

Forecast: Safety change, 40 Years (cont'd)

Cell: Z126

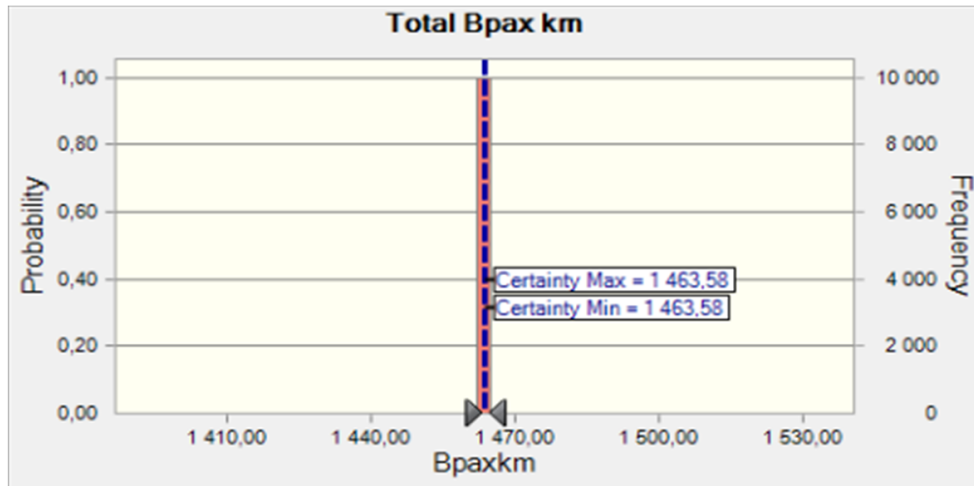
Percentiles:	Forecast values
0%	-170
10%	-46
20%	-28
30%	-14
40%	-4
50%	6
60%	17
70%	28
80%	41
90%	59
100%	157

Forecast: Total Bpax km

Cell: Y138

Summary:

Certainty level is 90,00%
 Certainty range is from 1 463,58 to 1 463,58
 Entire range is from 1 463,58 to 1 463,58
 Base case is 1 463,58
 After 10 000 trials, the std. error of the mean is 0,00



Statistics:	Forecast values
Trials	10 000
Base Case	1 463,58
Mean	1 463,58
Median	1 463,58
Mode	1 463,58
Standard Deviation	0,00
Variance	0,00
Skewness	---
Kurtosis	---
Coeff. of Variability	0,00
Minimum	1 463,58
Maximum	1 463,58
Range Width	0,00
Mean Std. Error	0,00

Forecast: Total Bpax km (cont'd)

Cell: Y138

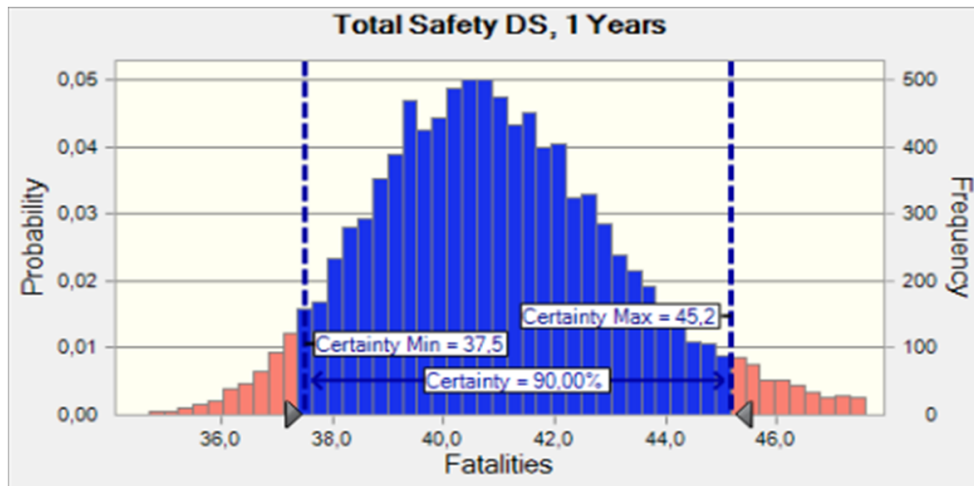
Percentiles:	Forecast values
0%	1 463,58
10%	1 463,58
20%	1 463,58
30%	1 463,58
40%	1 463,58
50%	1 463,58
60%	1 463,58
70%	1 463,58
80%	1 463,58
90%	1 463,58
100%	1 463,58

Forecast: Total Safety DS, 1 Years

Cell: T108

Summary:

Certainty level is 90,00%
 Certainty range is from 37,5 to 45,2
 Entire range is from 33,9 to 52,8
 Base case is 41,6
 After 10 000 trials, the std. error of the mean is 0,0



Statistics:	Forecast values
Trials	10 000
Base Case	41,6
Mean	41,0
Median	40,8
Mode	---
Standard Deviation	2,3
Variance	5,5
Skewness	0,6010
Kurtosis	3,90
Coeff. of Variability	0,0572
Minimum	33,9
Maximum	52,8
Range Width	18,9
Mean Std. Error	0,0

Forecast: Total Safety DS, 1 Years (cont'd)

Cell: T108

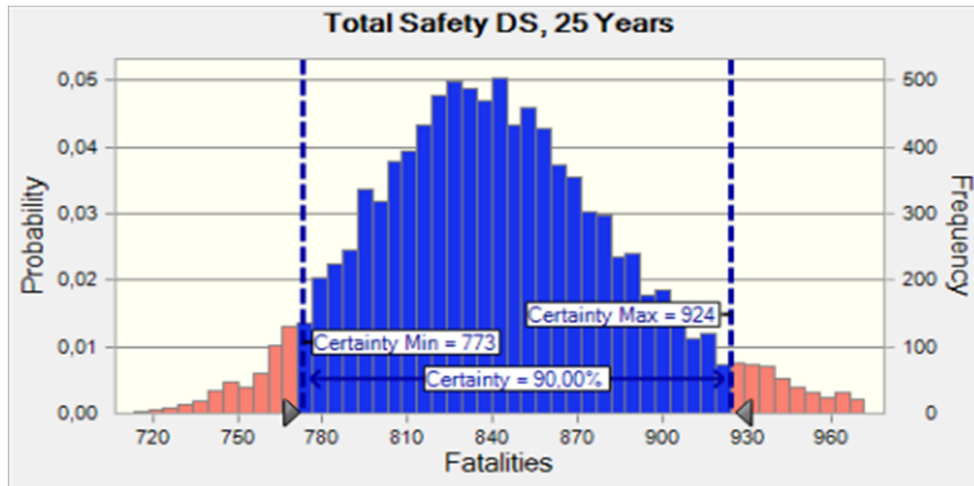
Percentiles:	Forecast values
0%	33,9
10%	38,2
20%	39,1
30%	39,7
40%	40,3
50%	40,8
60%	41,4
70%	42,0
80%	42,8
90%	44,0
100%	52,8

Forecast: Total Safety DS, 25 Years

Cell: W108

Summary:

Certainty level is 90,00%
 Certainty range is from 773 to 924
 Entire range is from 713 to 1 073
 Base case is 856
 After 10 000 trials, the std. error of the mean is 0



Statistics:	Forecast values
Trials	10 000
Base Case	856
Mean	842
Median	839
Mode	---
Standard Deviation	46
Variance	2 124
Skewness	0,5405
Kurtosis	3,79
Coeff. of Variability	0,0547
Minimum	713
Maximum	1 073
Range Width	360
Mean Std. Error	0

Forecast: Total Safety DS, 25 Years (cont'd)

Cell: W108

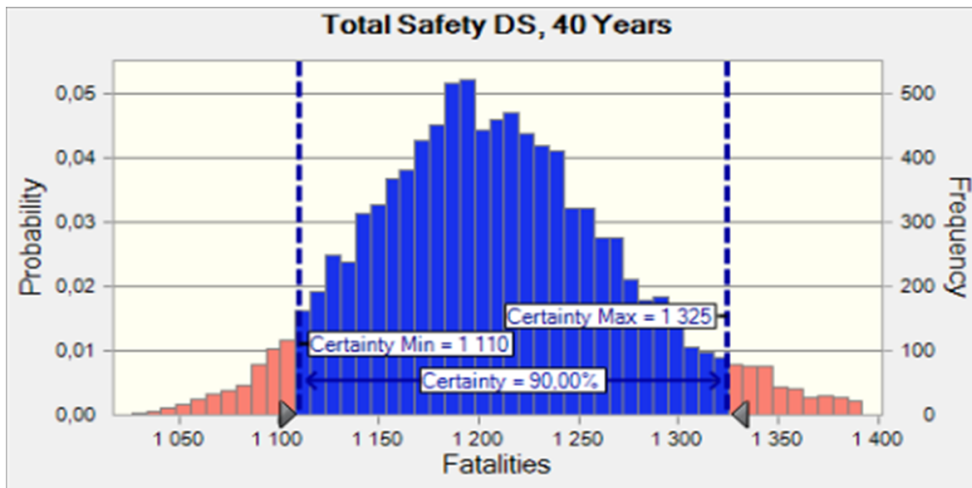
Percentiles:	Forecast values
0%	713
10%	787
20%	804
30%	817
40%	828
50%	839
60%	850
70%	862
80%	878
90%	901
100%	1 073

Forecast: Total Safety DS, 40 Years

Cell: Z108

Summary:

Certainty level is 90,00%
 Certainty range is from 1 110 to 1 325
 Entire range is from 1 026 to 1 540
 Base case is 1 230
 After 10 000 trials, the std. error of the mean is 1



Statistics:	Forecast values
Trials	10 000
Base Case	1 230
Mean	1 209
Median	1 204
Mode	---
Standard Deviation	65
Variance	4 275
Skewness	0,4875
Kurtosis	3,69
Coeff. of Variability	0,0541
Minimum	1 026
Maximum	1 540
Range Width	514
Mean Std. Error	1

Forecast: Total Safety DS, 40 Years (cont'd)

Cell: Z108

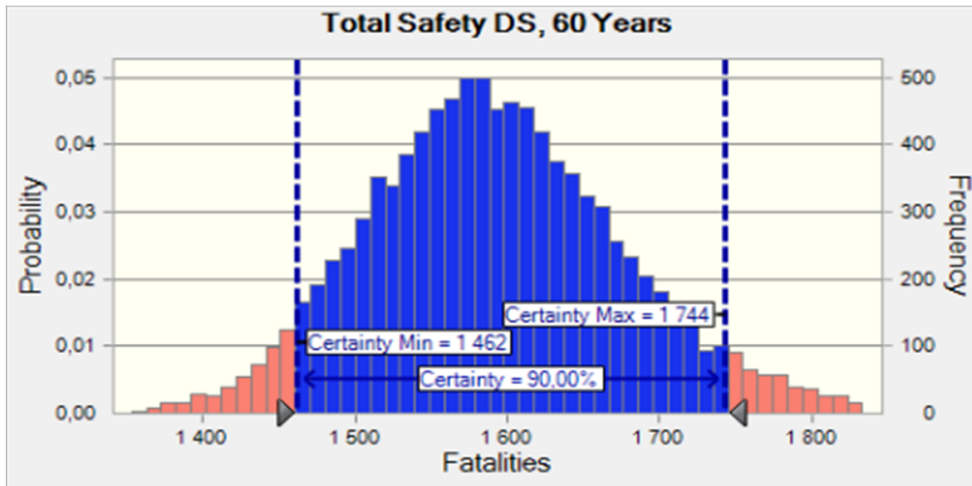
Percentiles:	Forecast values
0%	1 026
10%	1 129
20%	1 154
30%	1 173
40%	1 189
50%	1 204
60%	1 220
70%	1 238
80%	1 260
90%	1 293
100%	1 540

Forecast: Total Safety DS, 60 Years

Cell: AD108

Summary:

Certainty level is 90,00%
 Certainty range is from 1 462 to 1 744
 Entire range is from 1 349 to 2 027
 Base case is 1 624
 After 10 000 trials, the std. error of the mean is 1



Statistics:	Forecast values
Trials	10 000
Base Case	1 624
Mean	1 593
Median	1 588
Mode	---
Standard Deviation	86
Variance	7 344
Skewness	0,4177
Kurtosis	3,54
Coeff. of Variability	0,0538
Minimum	1 349
Maximum	2 027
Range Width	679
Mean Std. Error	1

Forecast: Total Safety DS, 60 Years (cont'd)

Cell: AD108

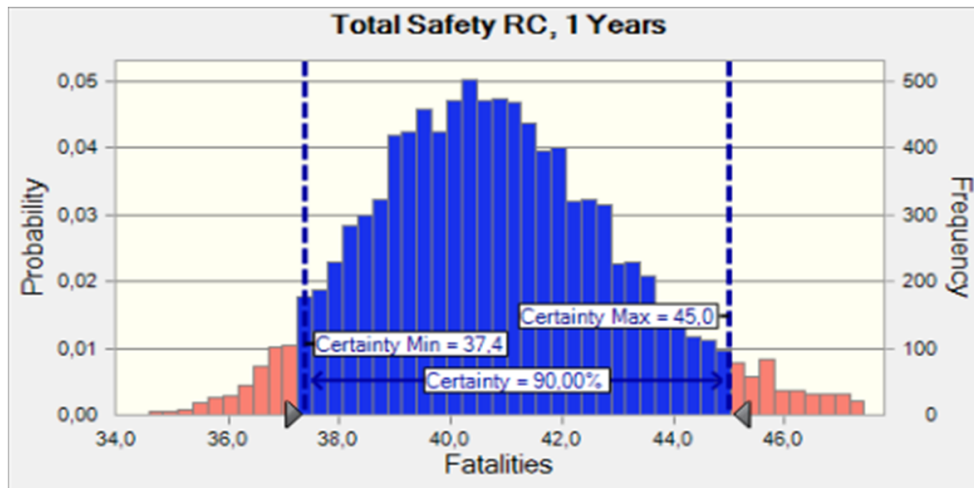
Percentiles:	Forecast values
0%	1 349
10%	1 487
20%	1 521
30%	1 547
40%	1 568
50%	1 588
60%	1 609
70%	1 632
80%	1 661
90%	1 703
100%	2 027

Forecast: Total Safety RC, 1 Years

Cell: S108

Summary:

Certainty level is 90,00%
 Certainty range is from 37,4 to 45,0
 Entire range is from 33,9 to 53,3
 Base case is 41,4
 After 10 000 trials, the std. error of the mean is 0,0



Statistics:	Forecast values
Trials	10 000
Base Case	41,4
Mean	40,9
Median	40,7
Mode	---
Standard Deviation	2,3
Variance	5,5
Skewness	0,5766
Kurtosis	3,81
Coeff. of Variability	0,0574
Minimum	33,9
Maximum	53,3
Range Width	19,3
Mean Std. Error	0,0

Forecast: Total Safety RC, 1 Years (cont'd)

Cell: S108

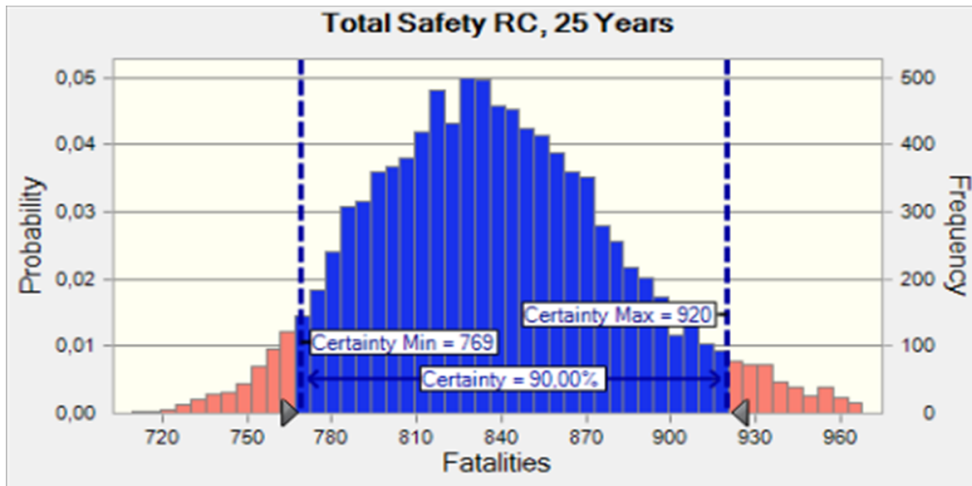
Percentiles:	Forecast values
0%	33,9
10%	38,0
20%	38,9
30%	39,5
40%	40,1
50%	40,7
60%	41,2
70%	41,9
80%	42,7
90%	43,9
100%	53,3

Forecast: Total Safety RC, 25 Years

Cell: V108

Summary:

- Certainty level is 90,00%
- Certainty range is from 769 to 920
- Entire range is from 701 to 1 079
- Base case is 852
- After 10 000 trials, the std. error of the mean is 0



Statistics:	Forecast values
Trials	10 000
Base Case	852
Mean	838
Median	835
Mode	---
Standard Deviation	46
Variance	2 132
Skewness	0,5193
Kurtosis	3,68
Coeff. of Variability	0,0551
Minimum	701
Maximum	1 079
Range Width	378
Mean Std. Error	0

Forecast: Total Safety RC, 25 Years (cont'd)

Cell: V108

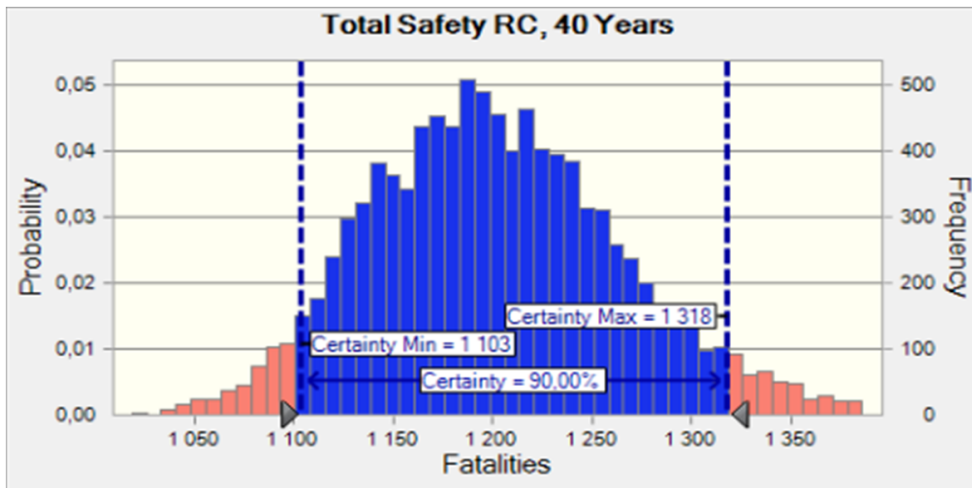
Percentiles:	Forecast values
0%	701
10%	783
20%	799
30%	813
40%	824
50%	835
60%	847
70%	859
80%	874
90%	898
100%	1 079

Forecast: Total Safety RC, 40 Years

Cell: Y108

Summary:

Certainty level is 90,00%
 Certainty range is from 1 103 to 1 318
 Entire range is from 996 to 1 537
 Base case is 1 222
 After 10 000 trials, the std. error of the mean is 1



Statistics:	Forecast values
Trials	10 000
Base Case	1 222
Mean	1 202
Median	1 198
Mode	---
Standard Deviation	66
Variance	4 306
Skewness	0,4725
Kurtosis	3,59
Coeff. of Variability	0,0546
Minimum	996
Maximum	1 537
Range Width	540
Mean Std. Error	1

Forecast: Total Safety RC, 40 Years (cont'd)

Cell: Y108

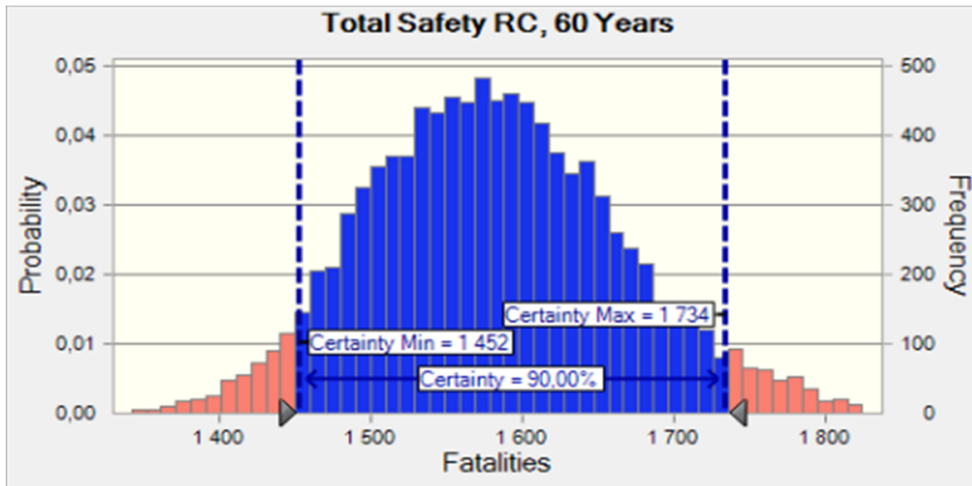
Percentiles:	Forecast values
0%	996
10%	1 123
20%	1 146
30%	1 165
40%	1 183
50%	1 198
60%	1 215
70%	1 232
80%	1 254
90%	1 286
100%	1 537

Forecast: Total Safety RC, 60 Years

Cell: AC108

Summary:

Certainty level is 90,00%
 Certainty range is from 1 452 to 1 734
 Entire range is from 1 297 to 2 014
 Base case is 1 612
 After 10 000 trials, the std. error of the mean is 1



Statistics:	Forecast values
Trials	10 000
Base Case	1 612
Mean	1 583
Median	1 578
Mode	---
Standard Deviation	86
Variance	7 425
Skewness	0,4133
Kurtosis	3,46
Coeff. of Variability	0,0544
Minimum	1 297
Maximum	2 014
Range Width	717
Mean Std. Error	1

Forecast: Total Safety RC, 60 Years (cont'd)

Cell: AC108

Percentiles:	Forecast values
0%	1 297
10%	1 478
20%	1 509
30%	1 535
40%	1 557
50%	1 578
60%	1 599
70%	1 623
80%	1 651
90%	1 694
100%	2 014

End of Forecasts

Assumptions

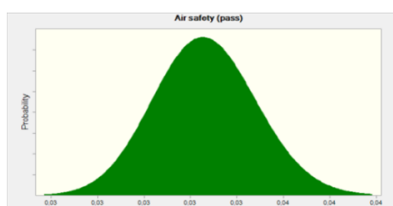
Worksheet: [S3_Model_Bergen-Stavanger_BS1P_120112.xls]Inputs and results

Assumption: Air safety (pass)

Cell: E15

Lognormal distribution with parameters:

Location	0,00	
Mean	0,03	(='Safety level & changes'!E14)
Std. Dev.	0,00	(=E15*0,03333)

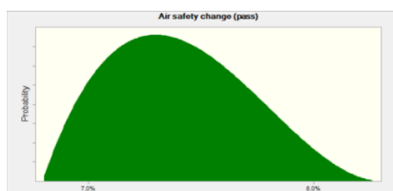


Assumption: Air safety change (pass)

Cell: H15

Beta distribution with parameters:

Minimum	6,8%	(='Safety level & changes'!H14*0,9)
Maximum	8,3%	(='Safety level & changes'!H14*1,1)
Alpha	2	
Beta	3	



Assumption: Bus safety (other)

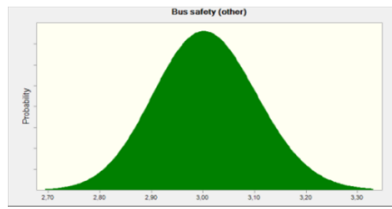
Cell: K15

Lognormal distribution with parameters:

Location	0,00	
Mean	3,01	(='Safety level & changes'!K14)
Std. Dev.	0,10	(=K15*0,0333)

Assumption: Bus safety (other) (cont'd)

Cell: K15

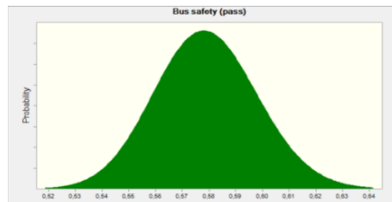


Assumption: Bus safety (pass)

Cell: E13

Lognormal distribution with parameters:

Location	0,00	
Mean	0,58	(='Safety level & changes'!E12)
Std. Dev.	0,02	(=E13*0,03333)

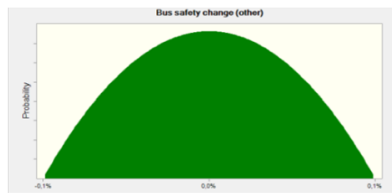


Assumption: Bus safety change (other)

Cell: N15

Beta distribution with parameters:

Minimum	-0,1%	(=-0,001+'Safety level & changes'!N14*0,9)
Maximum	0,1%	(=0,001+'Safety level & changes'!N14*1,1)
Alpha	2	
Beta	2	

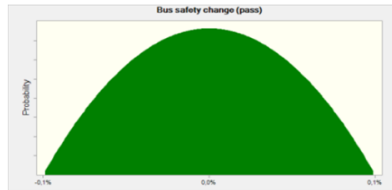


Assumption: Bus safety change (pass)

Cell: H13

Beta distribution with parameters:

Minimum	-0,1%	(=-0,001+'Safety level & changes'!H12*0,9)
Maximum	0,1%	(=0,001+'Safety level & changes'!H12*1,1)
Alpha	2	
Beta	2	

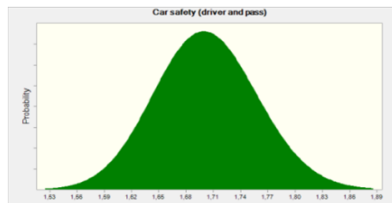


Assumption: Car safety (driver and pass)

Cell: E11

Lognormal distribution with parameters:

Location	0,00	
Mean	1,70	(='Safety level & changes'!E10)
Std. Dev.	0,06	(=E11*0,03333)

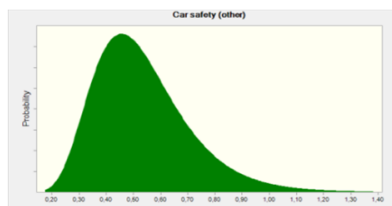


Assumption: Car safety (other)

Cell: K11

Lognormal distribution with parameters:

Location	0,00	
Mean	0,53	(='Safety level & changes'!K10)
Std. Dev.	0,18	(=K11*0,3333)

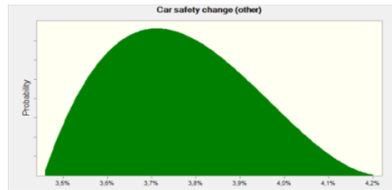


Assumption: Car safety change (other)

Cell: N11

Beta distribution with parameters:

Minimum	3,5%	(='Safety level & changes'!N10*0,9)
Maximum	4,2%	(='Safety level & changes'!N10*1,1)
Alpha	2	
Beta	3	

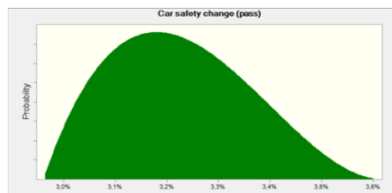


Assumption: Car safety change (pass)

Cell: H11

Beta distribution with parameters:

Minimum	3,0%	(='Safety level & changes'!H10*0,9)
Maximum	3,6%	(='Safety level & changes'!H10*1,1)
Alpha	2	
Beta	3	

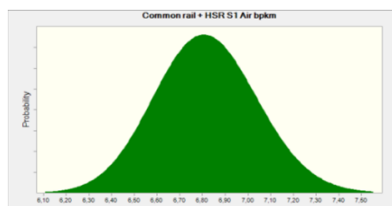


Assumption: Common rail + HSR S1 Air bpkm

Cell: K48

Lognormal distribution with parameters:

Location	0,00	
Mean	6,82	(='Pax&Vehicle km+change'!J12/10000000)
Std. Dev.	0,23	(=K48*0,0333)

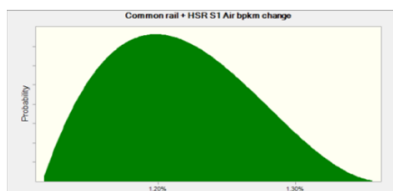


Assumption: Common rail + HSR S1 Air bpkm change

Cell: K61

Beta distribution with parameters:

Minimum	1,12%	(='Pax&Vehicle km+change'!AF7*0,9)
Maximum	1,36%	(='Pax&Vehicle km+change'!AF7*1,1)
Alpha	2	
Beta	3	

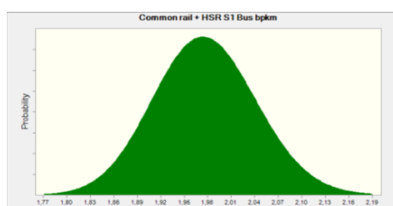


Assumption: Common rail + HSR S1 Bus bpkm

Cell: I48

Lognormal distribution with parameters:

Location	0,00	
Mean	1,98	(='Pax&Vehicle km+change'!J13/10000000)
Std. Dev.	0,07	(=I48*0,0333)

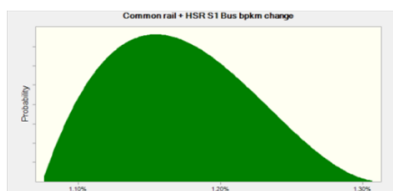


Assumption: Common rail + HSR S1 Bus bpkm change

Cell: I61

Beta distribution with parameters:

Minimum	1,07%	(='Pax&Vehicle km+change'!AK7*0,9)
Maximum	1,31%	(='Pax&Vehicle km+change'!AK7*1,1)
Alpha	2	
Beta	3	

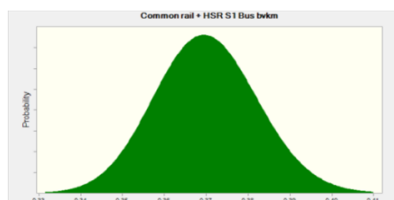


Assumption: Common rail + HSR S1 Bus bvk

Cell: J48

Lognormal distribution with parameters:

Location	0,00	
Mean	0,37	(='Pax&Vehicle km+change'!P13/10000000)
Std. Dev.	0,01	(=J48*0,0333)

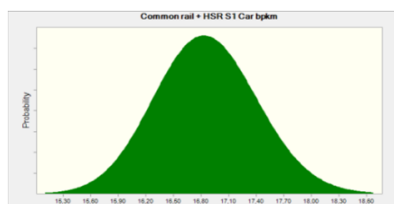


Assumption: Common rail + HSR S1 Car bpk

Cell: G48

Lognormal distribution with parameters:

Location	0,00	
Mean	16,86	(='Pax&Vehicle km+change'!J11/10000000)
Std. Dev.	0,56	(=G48*0,0333)

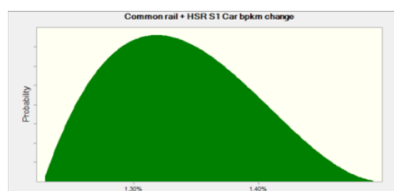


Assumption: Common rail + HSR S1 Car bpk change

Cell: G61

Beta distribution with parameters:

Minimum	1,23%	(='Pax&Vehicle km+change'!AA7*0,9)
Maximum	1,50%	(='Pax&Vehicle km+change'!AA7*1,1)
Alpha	2	
Beta	3	

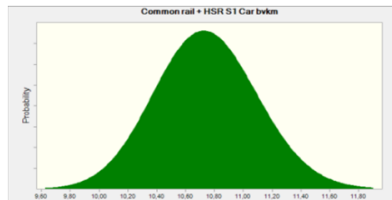


Assumption: Common rail + HSR S1 Car bvk

Cell: H48

Lognormal distribution with parameters:

Location	0,00	
Mean	10,74	(='Pax&Vehicle km+change'!P11/1000000)
Std. Dev.	0,36	(=H48*0,0333)

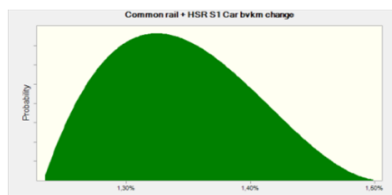


Assumption: Common rail + HSR S1 Car bvk change

Cell: H61

Beta distribution with parameters:

Minimum	1,23%	(='Pax&Vehicle km+change'!AW7*0,9)
Maximum	1,51%	(='Pax&Vehicle km+change'!AW7*1,1)
Alpha	2	
Beta	3	

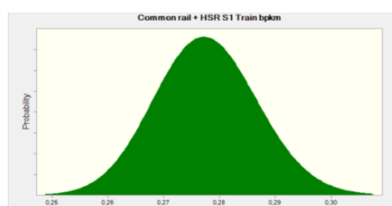


Assumption: Common rail + HSR S1 Train bpk

Cell: E48

Lognormal distribution with parameters:

Location	0,00	
Mean	0,28	(='Pax&Vehicle km+change'!J15/1000000)
Std. Dev.	0,01	(=E48*0,0333)

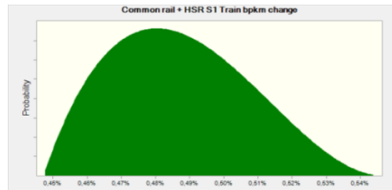


Assumption: Common rail + HSR S1 Train bpkm change

Cell: E61

Beta distribution with parameters:

Minimum	0,45%	(='Pax&Vehicle km+change'!AR7*0,9)
Maximum	0,55%	(='Pax&Vehicle km+change'!AR7*1,1)
Alpha	2	
Beta	3	

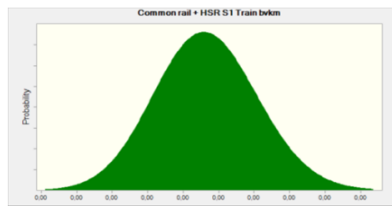


Assumption: Common rail + HSR S1 Train bvkm

Cell: F48

Lognormal distribution with parameters:

Location	0,00	
Mean	0,00	(='Pax&Vehicle km+change'!P15/10000000)
Std. Dev.	0,00	(=F48*0,0333)

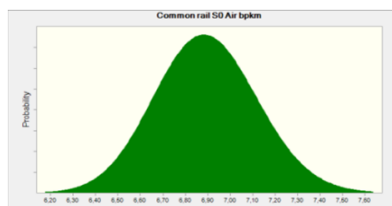


Assumption: Common rail S0 Air bpkm

Cell: K46

Lognormal distribution with parameters:

Location	0,00	
Mean	6,89	(='Pax&Vehicle km+change'!H12/10000000)
Std. Dev.	0,23	(=K46*0,0333)

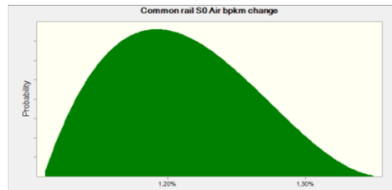


Assumption: Common rail S0 Air bpkm change

Cell: K59

Beta distribution with parameters:

Minimum	1,11%	(='Pax&Vehicle km+change'!AD7*0,9)
Maximum	1,36%	(='Pax&Vehicle km+change'!AD7*1,1)
Alpha	2	
Beta	3	

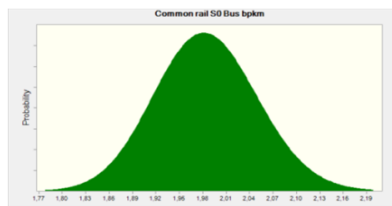


Assumption: Common rail S0 Bus bpkm

Cell: I46

Lognormal distribution with parameters:

Location	0,00	
Mean	1,98	(='Pax&Vehicle km+change'!H13/1000000)
Std. Dev.	0,07	(=I46*0,0333)

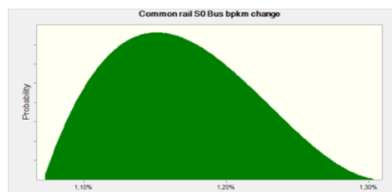


Assumption: Common rail S0 Bus bpkm change

Cell: I59

Beta distribution with parameters:

Minimum	1,07%	(='Pax&Vehicle km+change'!\$AI\$7*0,9)
Maximum	1,31%	(='Pax&Vehicle km+change'!AI7*1,1)
Alpha	2	
Beta	3	

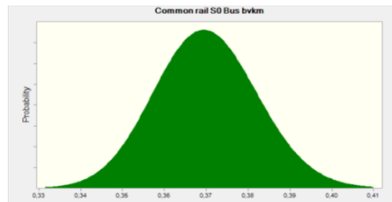


Assumption: Common rail S0 Bus bvkm

Cell: J46

Lognormal distribution with parameters:

Location	0,00	
Mean	0,37	(='Pax&Vehicle km+change'!N13/10000000
Std. Dev.	0,01	(=J46*0,0333)

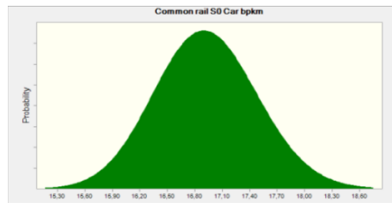


Assumption: Common rail S0 Car bpkm

Cell: G46

Lognormal distribution with parameters:

Location	0,00	
Mean	16,93	(='Pax&Vehicle km+change'!H11/10000000
Std. Dev.	0,56	(=G46*0,0333)

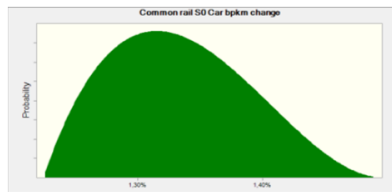


Assumption: Common rail S0 Car bpkm change

Cell: G59

Beta distribution with parameters:

Minimum	1,22%	(='Pax&Vehicle km+change'!Y7*0,9)
Maximum	1,50%	(='Pax&Vehicle km+change'!Y7*1,1)
Alpha	2	
Beta	3	

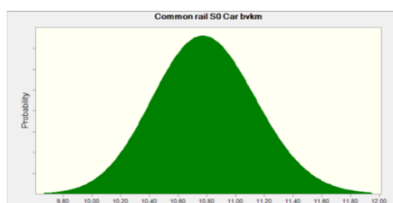


Assumption: Common rail S0 Car bvkm

Cell: H46

Lognormal distribution with parameters:

Location	0,00	
Mean	10,79	(='Pax&Vehicle km+change'!N11/1000000)
Std. Dev.	0,36	(=H46*0,0333)

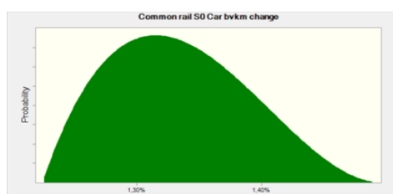


Assumption: Common rail S0 Car bvkm change

Cell: H59

Beta distribution with parameters:

Minimum	1,22%	(='Pax&Vehicle km+change'!\$AU\$7*0,9)
Maximum	1,50%	(='Pax&Vehicle km+change'!\$AU\$7*1,1)
Alpha	2	
Beta	3	

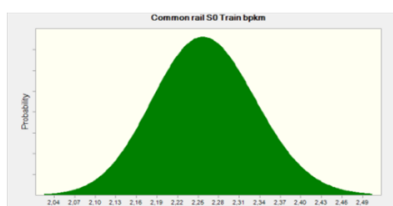


Assumption: Common rail S0 Train bpkm

Cell: E46

Lognormal distribution with parameters:

Location	0,00	
Mean	2,26	(='Pax&Vehicle km+change'!H14/1000000)
Std. Dev.	0,08	(=E46*0,0333)

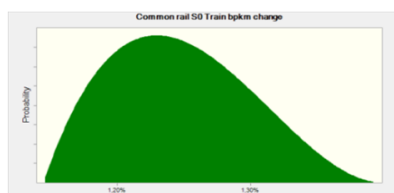


Assumption: Common rail S0 Train bpkm change

Cell: E59

Beta distribution with parameters:

Minimum	1,14%	(='Pax&Vehicle km+change'!\$AN\$7*0,9)
Maximum	1,40%	(='Pax&Vehicle km+change'!\$AN\$7*1,1)
Alpha	2	
Beta	3	

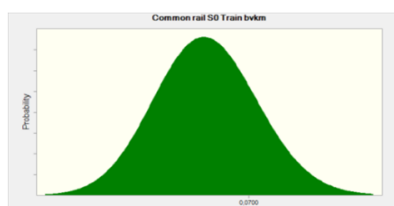


Assumption: Common rail S0 Train bvkm

Cell: F46

Lognormal distribution with parameters:

Location	0,0000	
Mean	0,0681	(='Pax&Vehicle km+change'!N14/10000000)
Std. Dev.	0,0023	(=F46*0,0333)

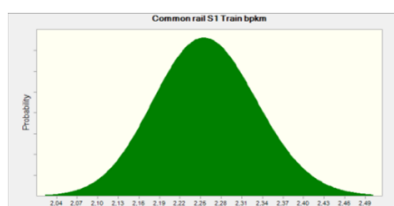


Assumption: Common rail S1 Train bpkm

Cell: E49

Lognormal distribution with parameters:

Location	0,00	
Mean	2,26	(='Pax&Vehicle km+change'!J14/10000000)
Std. Dev.	0,08	(=E49*0,0333)

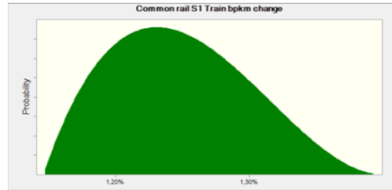


Assumption: Common rail S1 Train bpkm change

Cell: E62

Beta distribution with parameters:

Minimum	1,15%	(='Pax&Vehicle km+change'!AP7*0,9)
Maximum	1,40%	(='Pax&Vehicle km+change'!AP7*1,1)
Alpha	2	
Beta	3	

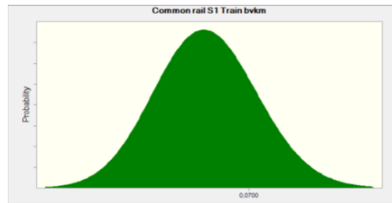


Assumption: Common rail S1 Train bvkm

Cell: F49

Lognormal distribution with parameters:

Location	0,0000	
Mean	0,0681	(='Pax&Vehicle km+change'!E52)
Std. Dev.	0,0023	(=F49*0,0333)

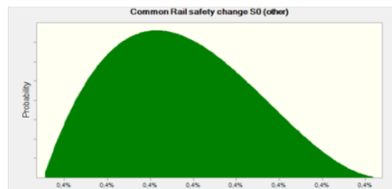


Assumption: Common Rail safety change S0 (other)

Cell: N23

Beta distribution with parameters:

Minimum	0,4%	(='Safety S2 P3 HSR&Common rail'!C23*0)
Maximum	0,4%	(='Safety S2 P3 HSR&Common rail'!C23*1)
Alpha	2	
Beta	3	

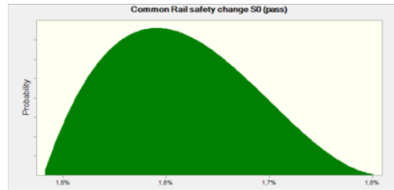


Assumption: Common Rail safety change S0 (pass)

Cell: H23

Beta distribution with parameters:

Minimum	1,5%	(='Safety S2 P3 HSR&Common rail'!C22*0
Maximum	1,8%	(='Safety S2 P3 HSR&Common rail'!C22*1
Alpha	2	
Beta	3	

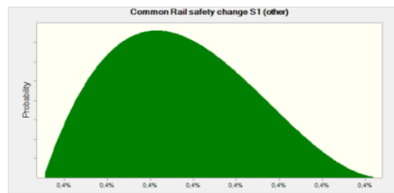


Assumption: Common Rail safety change S1 (other)

Cell: N33

Beta distribution with parameters:

Minimum	0,4%	(='Safety S2 P3 HSR&Common rail'!C23*0
Maximum	0,4%	(='Safety S2 P3 HSR&Common rail'!C23*1
Alpha	2	
Beta	3	

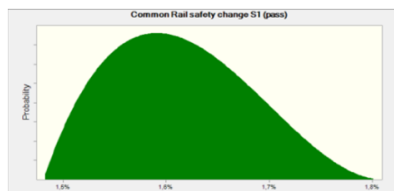


Assumption: Common Rail safety change S1 (pass)

Cell: H33

Beta distribution with parameters:

Minimum	1,5%	(='Safety S2 P3 HSR&Common rail'!C22*0
Maximum	1,8%	(='Safety S2 P3 HSR&Common rail'!C22*1
Alpha	2	
Beta	3	

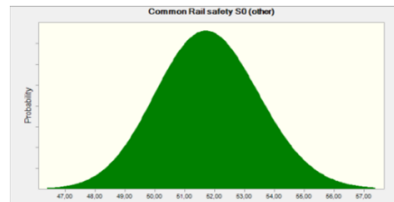


Assumption: Common Rail safety S0 (other)

Cell: K23

Lognormal distribution with parameters:

Location	0,00	
Mean	51,79	(='Safety S2 P3 HSR&Common rail'!C21)
Std. Dev.	1,72	(=K23*0,0333)

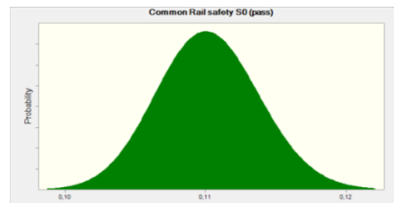


Assumption: Common Rail safety S0 (pass)

Cell: E23

Lognormal distribution with parameters:

Location	0,00	
Mean	0,11	(='Safety S2 P3 HSR&Common rail'!C20)
Std. Dev.	0,00	(=E23*0,03333)

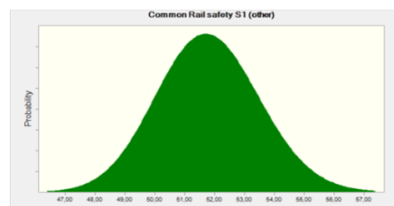


Assumption: Common Rail safety S1 (other)

Cell: K33

Lognormal distribution with parameters:

Location	0,00	
Mean	51,79	(='Safety S2 P3 HSR&Common rail'!C21)
Std. Dev.	1,72	(=K33*0,0333)



Assumption: Common Rail safety S1 (pass)

Cell: E33

Lognormal distribution with parameters:

Location	0,00	
Mean	0,11	(='Safety S2 P3 HSR&Common rail'!C20)
Std. Dev.	0,00	(=E33*0,03333)

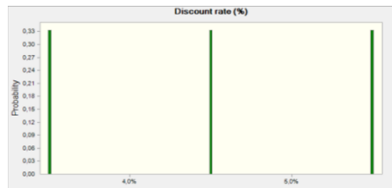


Assumption: Discount rate (%)

Cell: F72

Custom distribution with parameters:

Value	Probability
3,5%	0,33
4,5%	0,33
5,5%	0,33

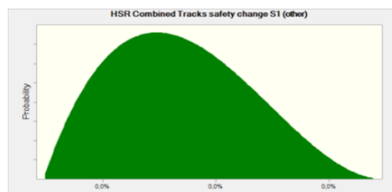


Assumption: HSR Combined Tracks safety change S1 (other)

Cell: N35

Beta distribution with parameters:

Minimum	0,0%	(='Safety S2 P3 HSR&Common rail'!C38*0)
Maximum	0,0%	(='Safety S2 P3 HSR&Common rail'!C38*1)
Alpha	2	
Beta	3	

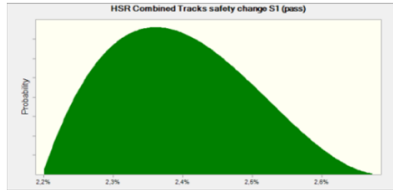


Assumption: HSR Combined Tracks safety change S1 (pass)

Cell: H35

Beta distribution with parameters:

Minimum	2,2%	(='Safety S2 P3 HSR&Common rail'!C35*0
Maximum	2,7%	(='Safety S2 P3 HSR&Common rail'!C35*1
Alpha	2	
Beta	3	

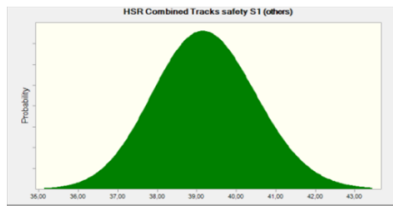


Assumption: HSR Combined Tracks safety S1 (others)

Cell: K35

Lognormal distribution with parameters:

Location	0,00	
Mean	39,22	(='Safety S2 P3 HSR&Common rail'!C32)
Std. Dev.	1,31	(=K35*0,0333)

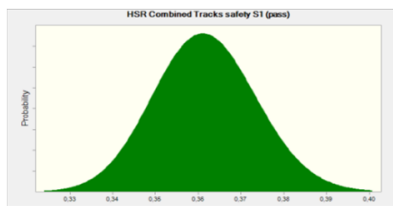


Assumption: HSR Combined Tracks safety S1 (pass)

Cell: E35

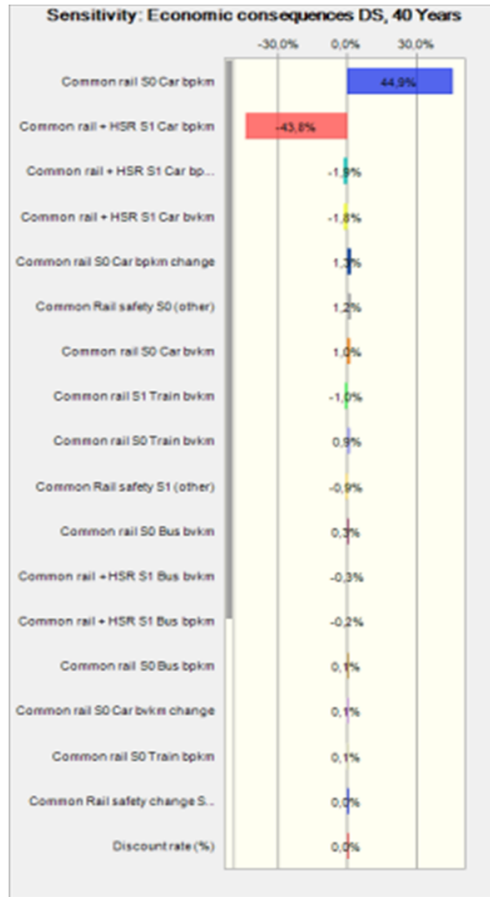
Lognormal distribution with parameters:

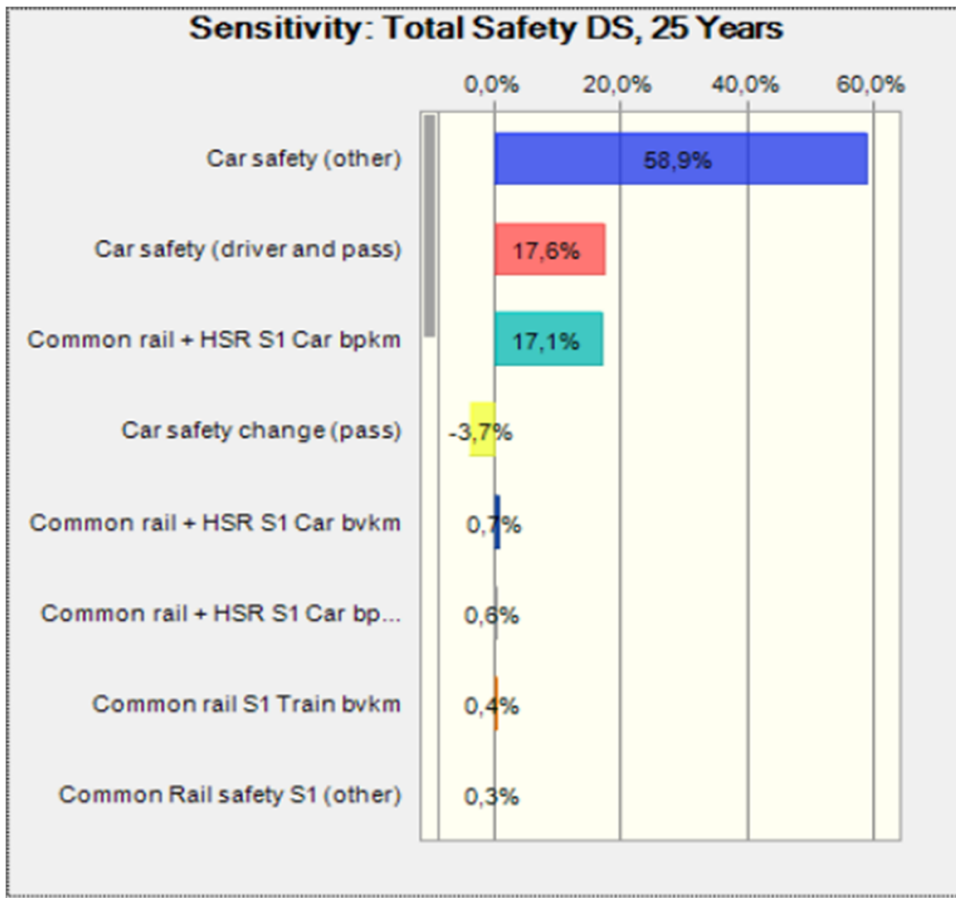
Location	0,00	
Mean	0,36	(='Safety S2 P3 HSR&Common rail'!C31)
Std. Dev.	0,01	(=E35*0,03333)

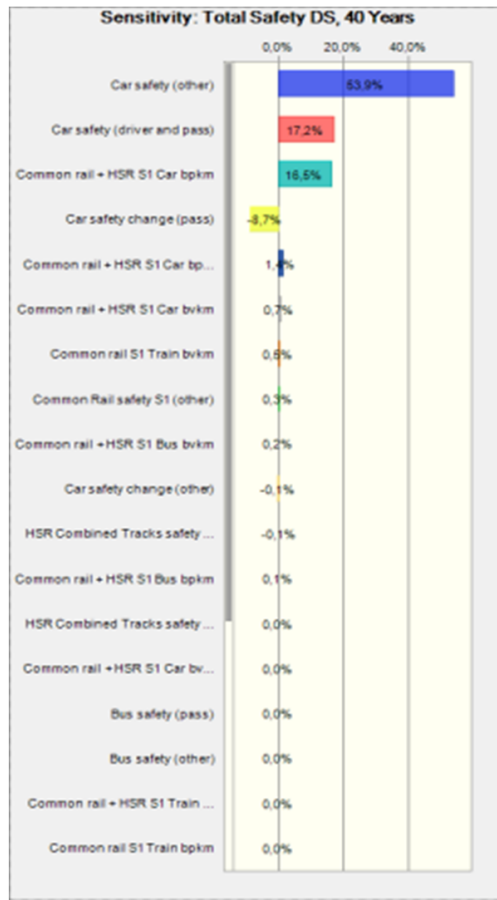


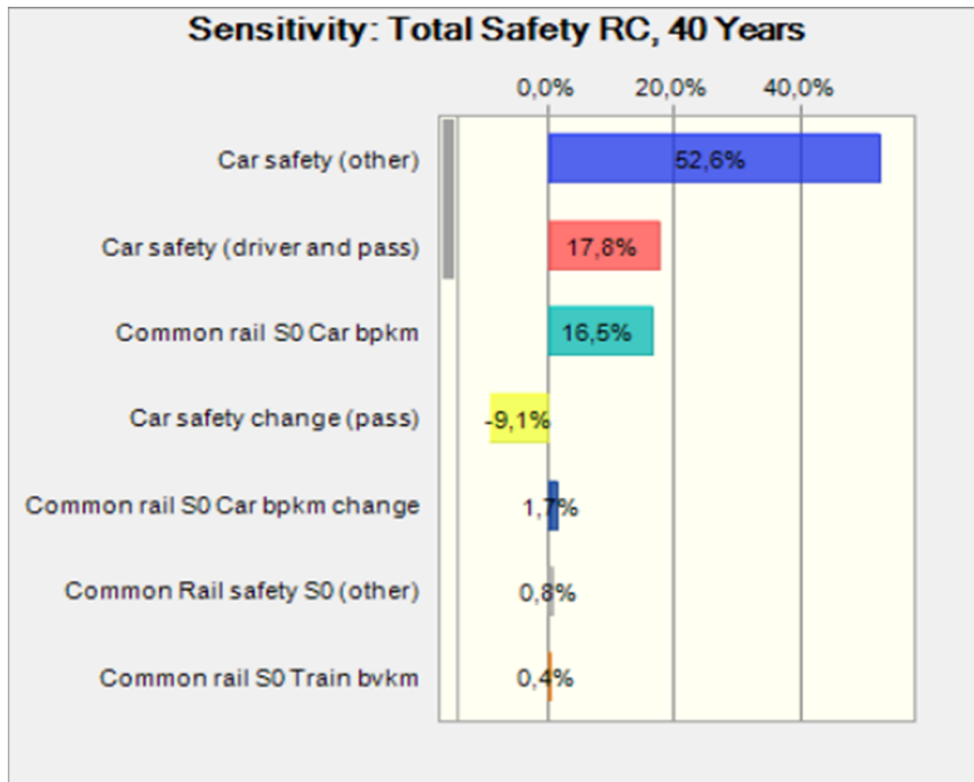
End of Assumptions

Sensitivity Charts









End of Sensitivity Charts

Crystal Ball Report - Custom

Simulation started on 2012-01-17 at 11:02
Simulation stopped on 2012-01-17 at 11:04

Run preferences:

Number of trials run	10 000
Monte Carlo	
Random seed	

Run statistics:

Total running time (sec)	153,81
Trials/second (average)	65
Random numbers per sec	3 251

Crystal Ball data:

Assumptions	50
Correlations	0
Correlated groups	0
Decision variables	0
Forecasts	15

Forecasts

Worksheet: [S3_Model_Oslo-Bergen_H1P_120112.xls]Inputs and results

Forecast: Economic consequences DS, 1 Years

Cell: T117

Summary:

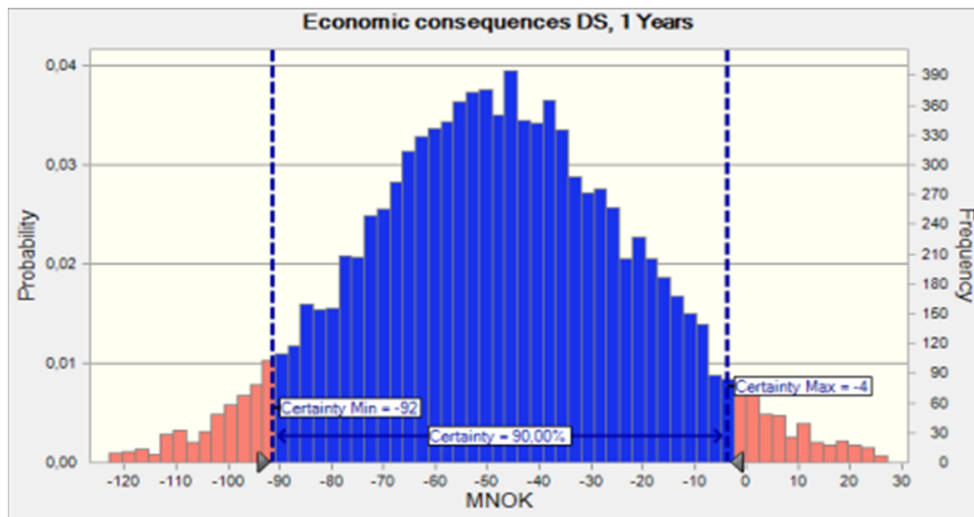
Certainty level is 90,00%

Certainty range is from -92 to -4

Entire range is from -149 to 47

Base case is -48

After 10 000 trials, the std. error of the mean is 0



Forecast: Economic consequences DS, 1 Years (cont'd)

Cell: T117

Statistics:	Forecast values
Trials	10 000
Base Case	-48
Mean	-48
Median	-48
Mode	---
Standard Deviation	27
Variance	717
Skewness	0,0414
Kurtosis	3,04
Coeff. of Variability	-0,5596
Minimum	-149
Maximum	47
Range Width	196
Mean Std. Error	0

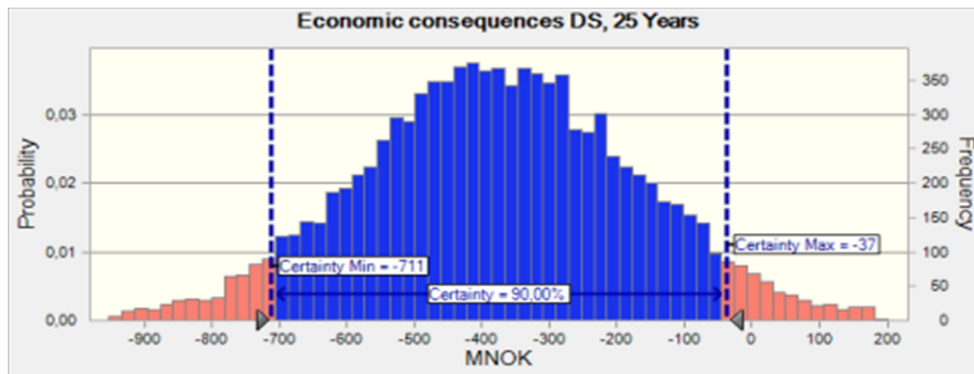
Percentiles:	Forecast values
0%	-149
10%	-82
20%	-70
30%	-62
40%	-55
50%	-48
60%	-41
70%	-34
80%	-25
90%	-13
100%	47

Forecast: Economic consequences DS, 25 Years

Cell: W117

Summary:

Certainty level is 90,00%
 Certainty range is from -711 to -37
 Entire range is from -1 212 to 362
 Base case is -377
 After 10 000 trials, the std. error of the mean is 2



Statistics:	Forecast values
Trials	10 000
Base Case	-377
Mean	-376
Median	-379
Mode	---
Standard Deviation	206
Variance	42 319
Skewness	0,0245
Kurtosis	3,06
Coeff. of Variability	-0,5472
Minimum	-1 212
Maximum	362
Range Width	1 574
Mean Std. Error	2

Forecast: Economic consequences DS, 25 Years (cont'd)

Cell: W117

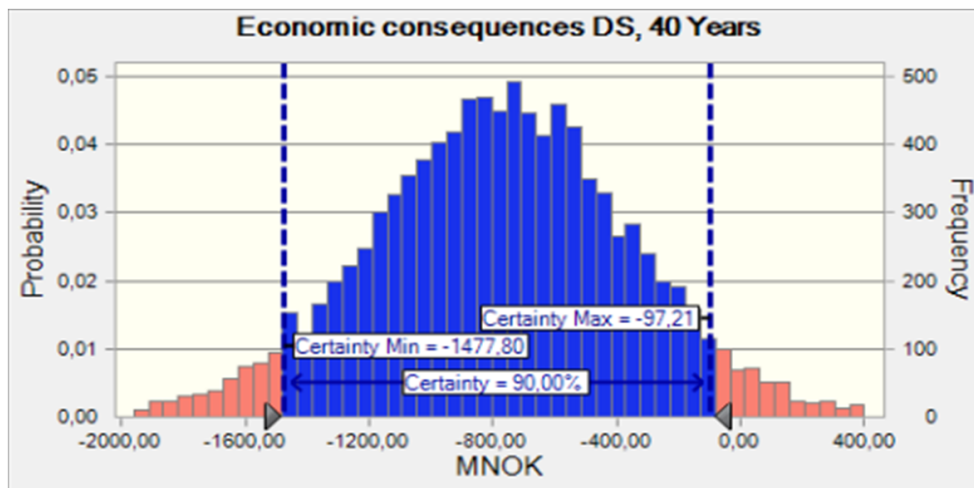
Percentiles:	Forecast values
0%	-1 212
10%	-640
20%	-547
30%	-482
40%	-430
50%	-379
60%	-325
70%	-272
80%	-204
90%	-110
100%	362

Forecast: Economic consequences DS, 40 Years

Cell: Z117

Summary:

Certainty level is 90,00%
 Certainty range is from -1477,80 to -97,21
 Entire range is from -2722,08 to 790,19
 Base case is -776,95
 After 10 000 trials, the std. error of the mean is 4,21



Statistics:	Forecast values
Trials	10 000
Base Case	-776,95
Mean	-780,49
Median	-775,20
Mode	---
Standard Deviation	421,46
Variance	177630,68
Skewness	-0,0756
Kurtosis	3,17
Coeff. of Variability	-0,5400
Minimum	-2722,08
Maximum	790,19
Range Width	3512,27
Mean Std. Error	4,21

Forecast: Economic consequences DS, 40 Years (cont'd)

Cell: Z117

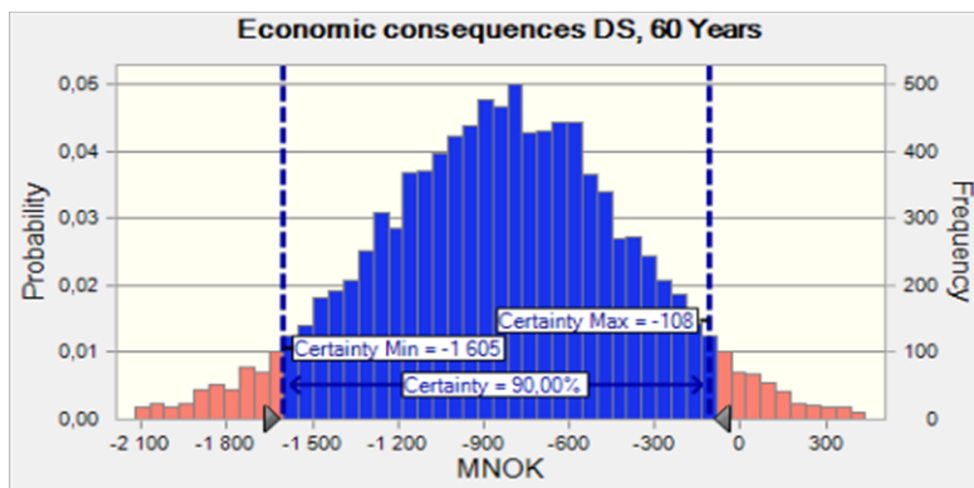
Percentiles:	Forecast values
0%	-2722,08
10%	-1318,64
20%	-1128,03
30%	-993,71
40%	-880,33
50%	-775,22
60%	-673,31
70%	-562,28
80%	-434,85
90%	-245,76
100%	790,19

Forecast: Economic consequences DS, 60 Years

Cell: AD117

Summary:

Certainty level is 90,00%
 Certainty range is from -1 605 to -108
 Entire range is from -3 011 to 869
 Base case is -835
 After 10 000 trials, the std. error of the mean is 5



Statistics:	Forecast values
Trials	10 000
Base Case	-835
Mean	-843
Median	-833
Mode	---
Standard Deviation	457
Variance	209 120
Skewness	-0,1202
Kurtosis	3,21
Coeff. of Variability	-0,5426
Minimum	-3 011
Maximum	869
Range Width	3 879
Mean Std. Error	5

Forecast: Economic consequences DS, 60 Years (cont'd)

Cell: AD117

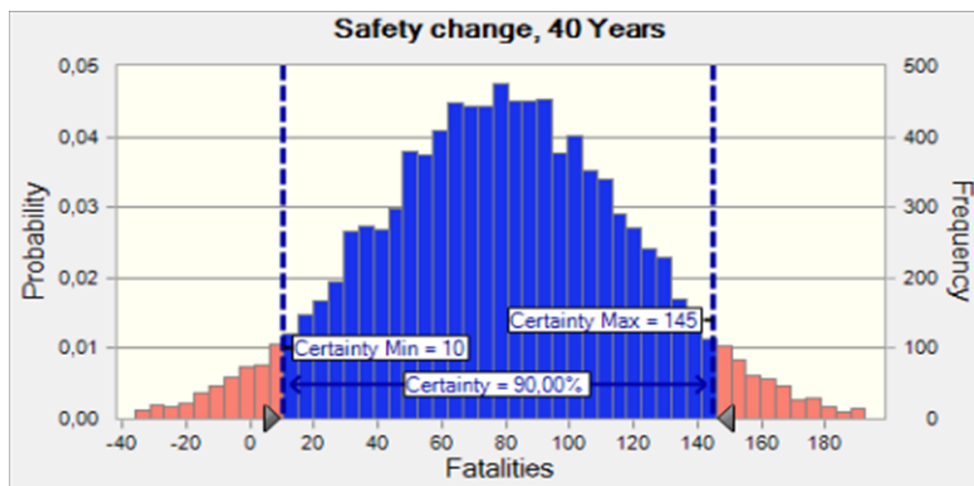
Percentiles:	Forecast values
0%	-3 011
10%	-1 429
20%	-1 220
30%	-1 071
40%	-945
50%	-833
60%	-722
70%	-602
80%	-468
90%	-266
100%	869

Forecast: Safety change, 40 Years

Cell: Z126

Summary:

Certainty level is 90,00%
 Certainty range is from 10 to 145
 Entire range is from -69 to 241
 Base case is 79
 After 10 000 trials, the std. error of the mean is 0



Statistics:	Forecast values
Trials	10 000
Base Case	79
Mean	78
Median	78
Mode	---
Standard Deviation	41
Variance	1 667
Skewness	-0,0298
Kurtosis	3,03
Coeff. of Variability	0,5225
Minimum	-69
Maximum	241
Range Width	310
Mean Std. Error	0

Forecast: Safety change, 40 Years (cont'd)

Cell: Z126

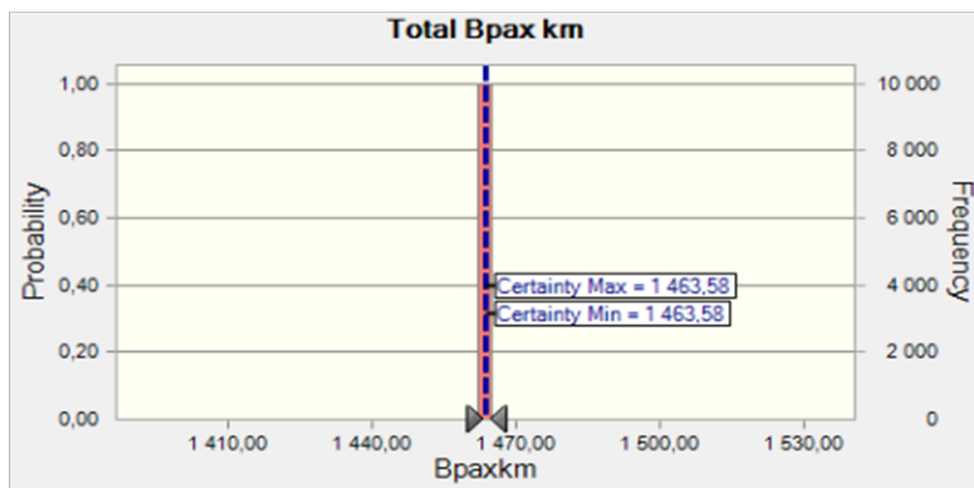
Percentiles:	Forecast values
0%	-69
10%	26
20%	44
30%	57
40%	68
50%	78
60%	89
70%	100
80%	113
90%	130
100%	241

Forecast: Total Bpax km

Cell: Y138

Summary:

Certainty level is 90,00%
 Certainty range is from 1 463,58 to 1 463,58
 Entire range is from 1 463,58 to 1 463,58
 Base case is 1 463,58
 After 10 000 trials, the std. error of the mean is 0,00



Statistics:	Forecast values
Trials	10 000
Base Case	1 463,58
Mean	1 463,58
Median	1 463,58
Mode	1 463,58
Standard Deviation	0,00
Variance	0,00
Skewness	---
Kurtosis	---
Coeff. of Variability	0,00
Minimum	1 463,58
Maximum	1 463,58
Range Width	0,00
Mean Std. Error	0,00

Forecast: Total Bpax km (cont'd)

Cell: Y138

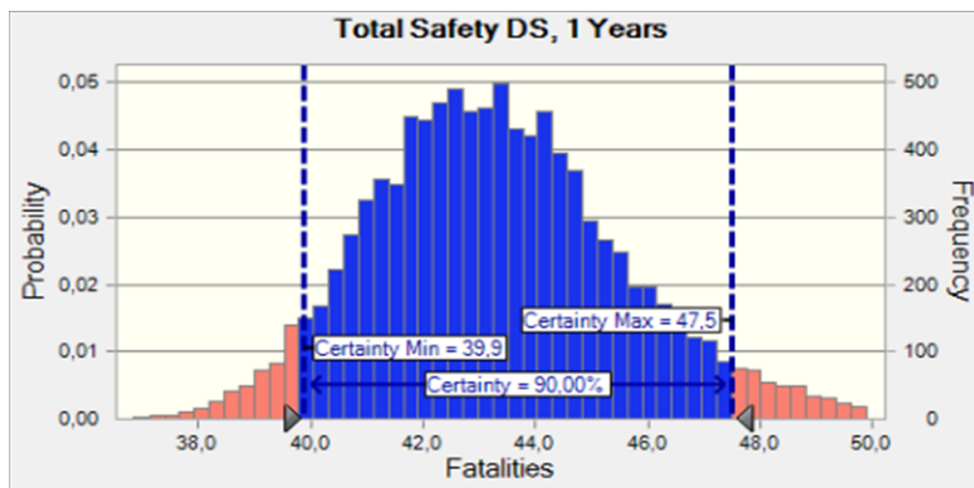
Percentiles:	Forecast values
0%	1 463,58
10%	1 463,58
20%	1 463,58
30%	1 463,58
40%	1 463,58
50%	1 463,58
60%	1 463,58
70%	1 463,58
80%	1 463,58
90%	1 463,58
100%	1 463,58

Forecast: Total Safety DS, 1 Years

Cell: T108

Summary:

Certainty level is 90,00%
 Certainty range is from 39,9 to 47,5
 Entire range is from 36,3 to 57,4
 Base case is 43,4
 After 10 000 trials, the std. error of the mean is 0,0



Statistics:	Forecast values
Trials	10 000
Base Case	43,4
Mean	43,4
Median	43,2
Mode	---
Standard Deviation	2,3
Variance	5,4
Skewness	0,5569
Kurtosis	3,75
Coeff. of Variability	0,0536
Minimum	36,3
Maximum	57,4
Range Width	21,1
Mean Std. Error	0,0

Forecast: Total Safety DS, 1 Years (cont'd)

Cell: T108

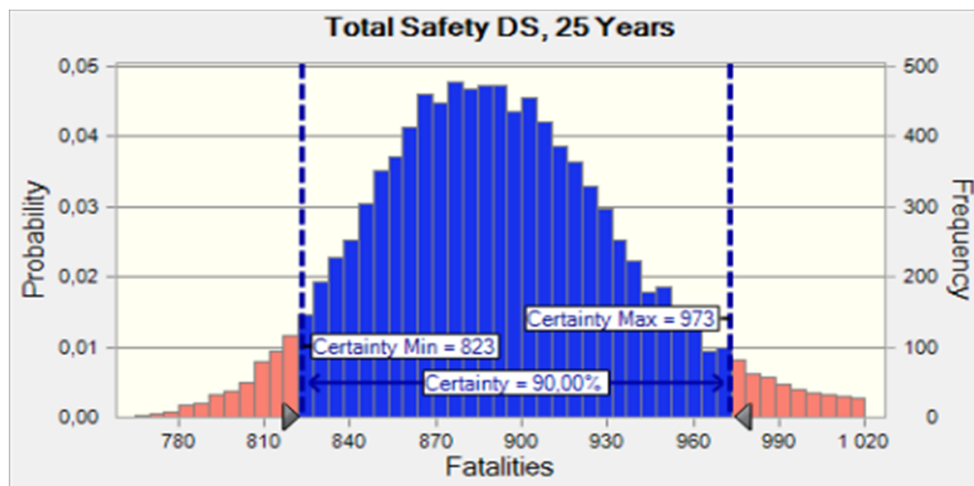
Percentiles:	Forecast values
0%	36,3
10%	40,6
20%	41,4
30%	42,1
40%	42,6
50%	43,2
60%	43,8
70%	44,4
80%	45,1
90%	46,4
100%	57,4

Forecast: Total Safety DS, 25 Years

Cell: W108

Summary:

Certainty level is 90,00%
 Certainty range is from 823 to 973
 Entire range is from 751 to 1 167
 Base case is 892
 After 10 000 trials, the std. error of the mean is 0



Statistics:	Forecast values
Trials	10 000
Base Case	892
Mean	892
Median	889
Mode	---
Standard Deviation	46
Variance	2 077
Skewness	0,4823
Kurtosis	3,62
Coeff. of Variability	0,0511
Minimum	751
Maximum	1 167
Range Width	416
Mean Std. Error	0

Forecast: Total Safety DS, 25 Years (cont'd)

Cell: W108

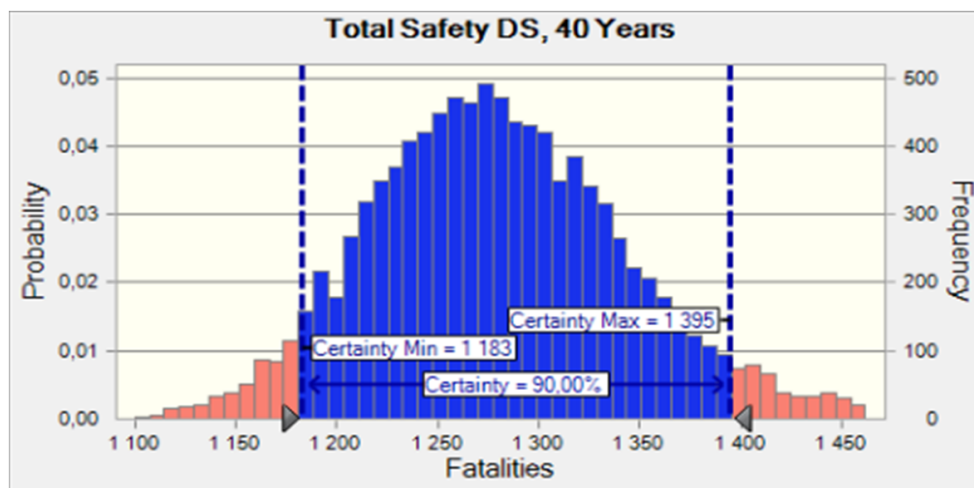
Percentiles:	Forecast values
0%	751
10%	837
20%	854
30%	867
40%	878
50%	889
60%	901
70%	913
80%	928
90%	951
100%	1 167

Forecast: Total Safety DS, 40 Years

Cell: Z108

Summary:

Certainty level is 90,00%
 Certainty range is from 1 183 to 1 395
 Entire range is from 1 083 to 1 662
 Base case is 1 280
 After 10 000 trials, the std. error of the mean is 1



Statistics:	Forecast values
Trials	10 000
Base Case	1 280
Mean	1 281
Median	1 277
Mode	---
Standard Deviation	65
Variance	4 167
Skewness	0,4264
Kurtosis	3,52
Coeff. of Variability	0,0504
Minimum	1 083
Maximum	1 662
Range Width	580
Mean Std. Error	1

Forecast: Total Safety DS, 40 Years (cont'd)

Cell: Z108

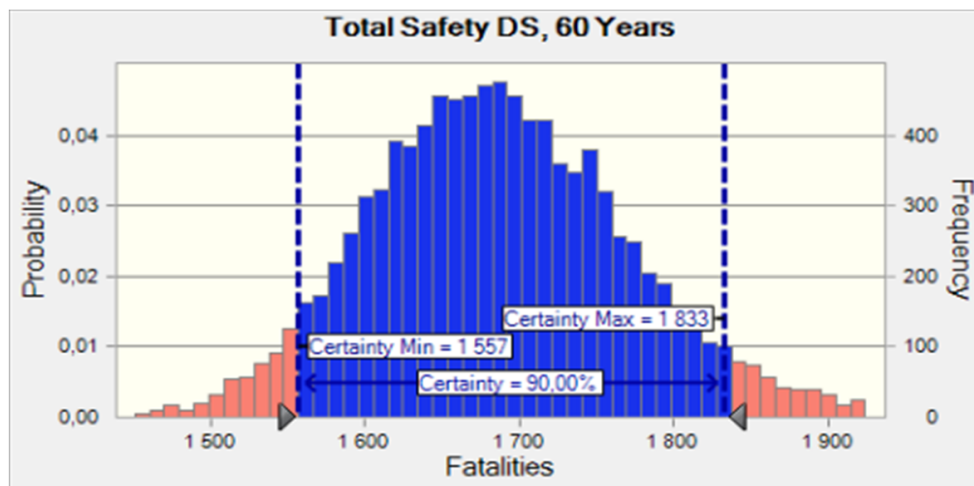
Percentiles:	Forecast values
0%	1 083
10%	1 203
20%	1 226
30%	1 245
40%	1 261
50%	1 277
60%	1 293
70%	1 311
80%	1 332
90%	1 364
100%	1 662

Forecast: Total Safety DS, 60 Years

Cell: AD108

Summary:

Certainty level is 90,00%
 Certainty range is from 1 557 to 1 833
 Entire range is from 1 432 to 2 169
 Base case is 1 686
 After 10 000 trials, the std. error of the mean is 1



Statistics:	Forecast values
Trials	10 000
Base Case	1 686
Mean	1 687
Median	1 683
Mode	---
Standard Deviation	84
Variance	7 128
Skewness	0,3577
Kurtosis	3,40
Coeff. of Variability	0,0500
Minimum	1 432
Maximum	2 169
Range Width	736
Mean Std. Error	1

Forecast: Total Safety DS, 60 Years (cont'd)

Cell: AD108

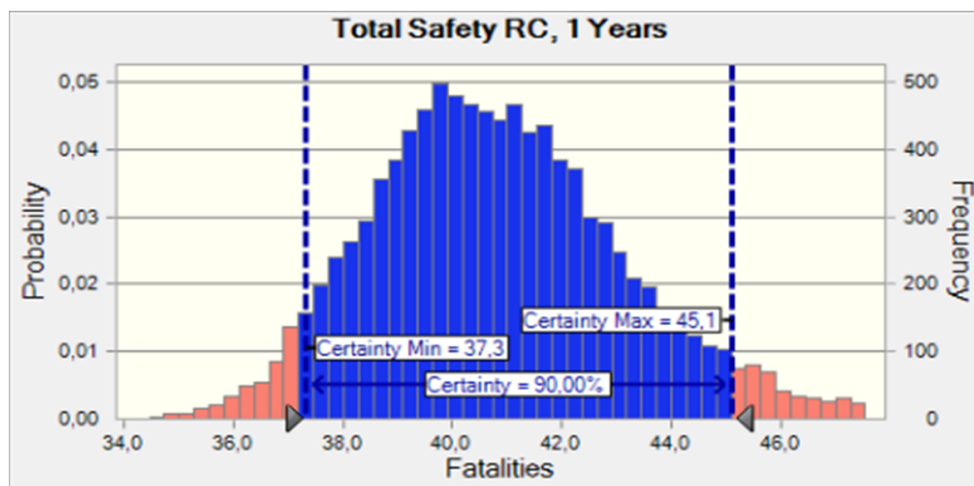
Percentiles:	Forecast values
0%	1 432
10%	1 584
20%	1 616
30%	1 641
40%	1 662
50%	1 683
60%	1 704
70%	1 728
80%	1 755
90%	1 796
100%	2 169

Forecast: Total Safety RC, 1 Years

Cell: S108

Summary:

Certainty level is 90,00%
 Certainty range is from 37,3 to 45,1
 Entire range is from 34,0 to 53,9
 Base case is 40,9
 After 10 000 trials, the std. error of the mean is 0,0



Statistics:	Forecast values
Trials	10 000
Base Case	40,9
Mean	40,9
Median	40,7
Mode	---
Standard Deviation	2,4
Variance	5,7
Skewness	0,5783
Kurtosis	3,81
Coeff. of Variability	0,0583
Minimum	34,0
Maximum	53,9
Range Width	19,9
Mean Std. Error	0,0

Forecast: Total Safety RC, 1 Years (cont'd)

Cell: S108

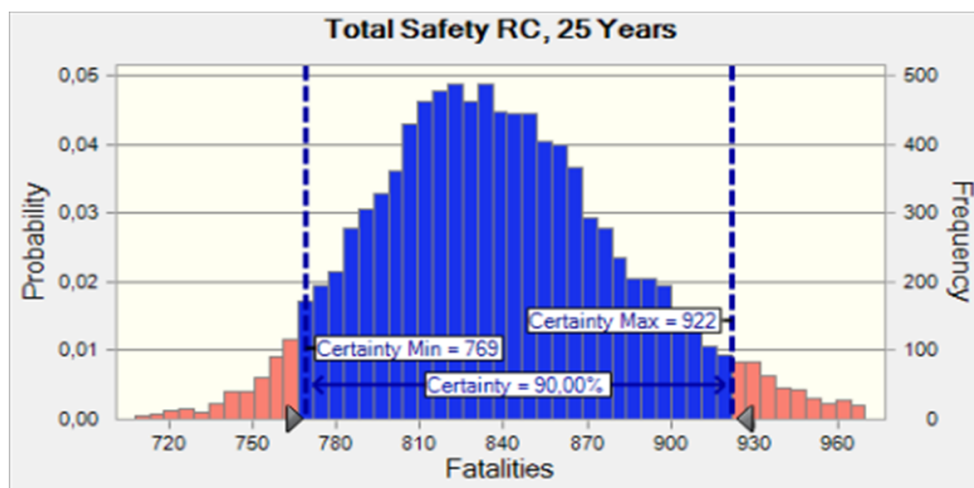
Percentiles:	Forecast values
0%	34,0
10%	38,0
20%	38,9
30%	39,5
40%	40,1
50%	40,7
60%	41,3
70%	41,9
80%	42,7
90%	43,9
100%	53,9

Forecast: Total Safety RC, 25 Years

Cell: V108

Summary:

Certainty level is 90,00%
 Certainty range is from 769 to 922
 Entire range is from 704 to 1 096
 Base case is 838
 After 10 000 trials, the std. error of the mean is 0



Statistics:	Forecast values
Trials	10 000
Base Case	838
Mean	839
Median	835
Mode	---
Standard Deviation	47
Variance	2 183
Skewness	0,5173
Kurtosis	3,70
Coeff. of Variability	0,0557
Minimum	704
Maximum	1 096
Range Width	392
Mean Std. Error	0

Forecast: Total Safety RC, 25 Years (cont'd)

Cell: V108

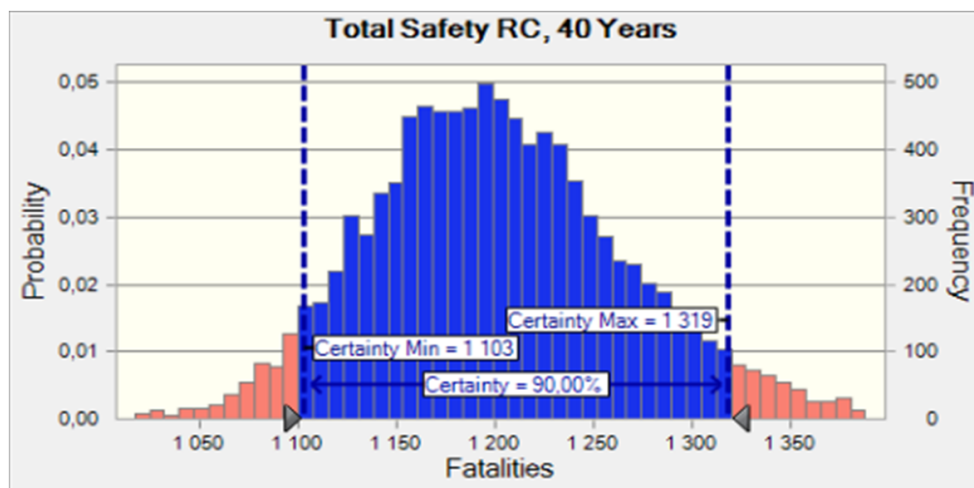
Percentiles:	Forecast values
0%	704
10%	782
20%	800
30%	813
40%	824
50%	835
60%	847
70%	859
80%	875
90%	900
100%	1 096

Forecast: Total Safety RC, 40 Years

Cell: Y108

Summary:

Certainty level is 90,00%
 Certainty range is from 1 103 to 1 319
 Entire range is from 1 013 to 1 563
 Base case is 1 202
 After 10 000 trials, the std. error of the mean is 1



Statistics:	Forecast values
Trials	10 000
Base Case	1 202
Mean	1 203
Median	1 198
Mode	---
Standard Deviation	66
Variance	4 379
Skewness	0,4660
Kurtosis	3,60
Coeff. of Variability	0,0550
Minimum	1 013
Maximum	1 563
Range Width	551
Mean Std. Error	1

Forecast: Total Safety RC, 40 Years (cont'd)

Cell: Y108

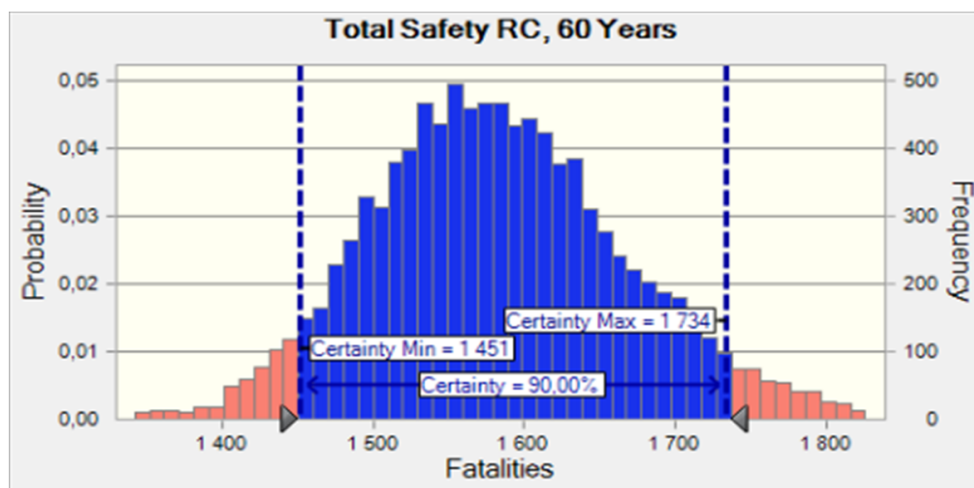
Percentiles:	Forecast values
0%	1 013
10%	1 123
20%	1 148
30%	1 166
40%	1 182
50%	1 198
60%	1 214
70%	1 232
80%	1 255
90%	1 289
100%	1 563

Forecast: Total Safety RC, 60 Years

Cell: AC108

Summary:

Certainty level is 90,00%
 Certainty range is from 1 451 to 1 734
 Entire range is from 1 324 to 2 044
 Base case is 1 582
 After 10 000 trials, the std. error of the mean is 1



Statistics:	Forecast values
Trials	10 000
Base Case	1 582
Mean	1 584
Median	1 578
Mode	---
Standard Deviation	87
Variance	7 485
Skewness	0,3995
Kurtosis	3,48
Coeff. of Variability	0,0546
Minimum	1 324
Maximum	2 044
Range Width	720
Mean Std. Error	1

Forecast: Total Safety RC, 60 Years (cont'd)

Cell: AC108

Percentiles:	Forecast values
0%	1 324
10%	1 479
20%	1 512
30%	1 536
40%	1 557
50%	1 578
60%	1 600
70%	1 624
80%	1 653
90%	1 698
100%	2 044

End of Forecasts

Assumptions

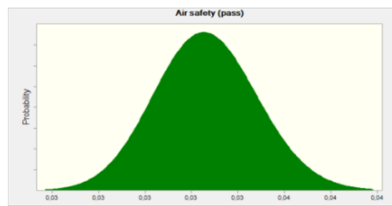
Worksheet: [S3_Model_Oslo-Bergen_H1P_120112.xls]Inputs and results

Assumption: Air safety (pass)

Cell: E15

Lognormal distribution with parameters:

Location	0,00	
Mean	0,03	(='Safety level & changes'!E14)
Std. Dev.	0,00	(=E15*0,03333)

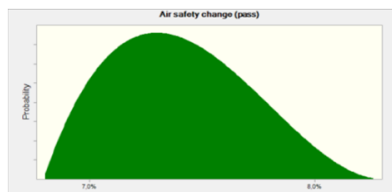


Assumption: Air safety change (pass)

Cell: H15

Beta distribution with parameters:

Minimum	6,8%	(='Safety level & changes'!H14*0,9)
Maximum	8,3%	(='Safety level & changes'!H14*1,1)
Alpha	2	
Beta	3	



Assumption: Bus safety (other)

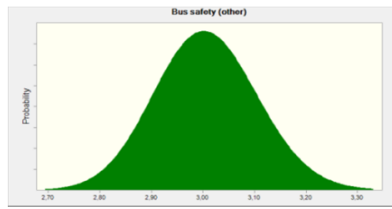
Cell: K15

Lognormal distribution with parameters:

Location	0,00	
Mean	3,01	(='Safety level & changes'!K14)
Std. Dev.	0,10	(=K15*0,0333)

Assumption: Bus safety (other) (cont'd)

Cell: K15

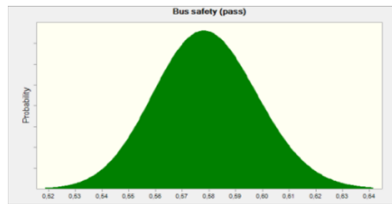


Assumption: Bus safety (pass)

Cell: E13

Lognormal distribution with parameters:

Location	0,00	
Mean	0,58	(='Safety level & changes'!E12)
Std. Dev.	0,02	(=E13*0,03333)

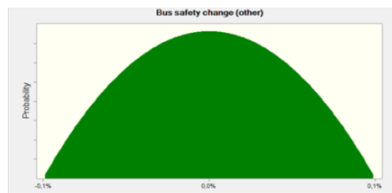


Assumption: Bus safety change (other)

Cell: N15

Beta distribution with parameters:

Minimum	-0,1%	(=-0,001+'Safety level & changes'!N14*0,9)
Maximum	0,1%	(=0,001+'Safety level & changes'!N14*1,1)
Alpha	2	
Beta	2	

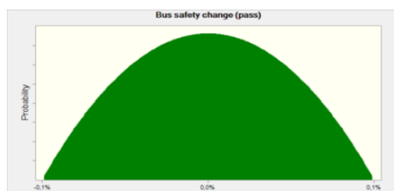


Assumption: Bus safety change (pass)

Cell: H13

Beta distribution with parameters:

Minimum	-0,1%	(=-0,001+'Safety level & changes'!H12*0,9)
Maximum	0,1%	(=0,001+'Safety level & changes'!H12*1,1)
Alpha	2	
Beta	2	

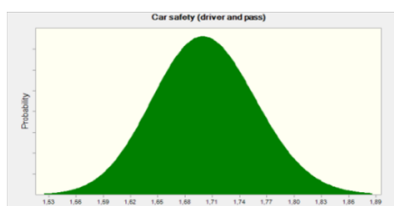


Assumption: Car safety (driver and pass)

Cell: E11

Lognormal distribution with parameters:

Location	0,00	
Mean	1,70	(='Safety level & changes'!E10)
Std. Dev.	0,06	(=E11*0,03333)

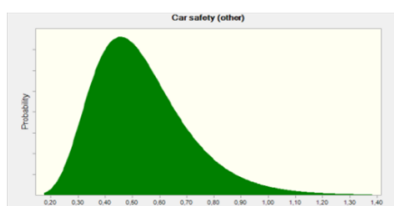


Assumption: Car safety (other)

Cell: K11

Lognormal distribution with parameters:

Location	0,00	
Mean	0,53	(='Safety level & changes'!K10)
Std. Dev.	0,18	(=K11*0,3333)

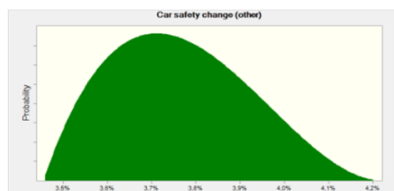


Assumption: Car safety change (other)

Cell: N11

Beta distribution with parameters:

Minimum	3,5%	(='Safety level & changes'!N10*0,9)
Maximum	4,2%	(='Safety level & changes'!N10*1,1)
Alpha	2	
Beta	3	

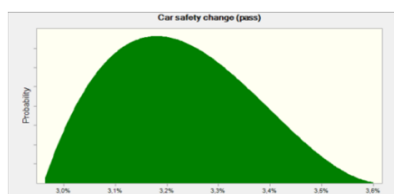


Assumption: Car safety change (pass)

Cell: H11

Beta distribution with parameters:

Minimum	3,0%	(='Safety level & changes'!H10*0,9)
Maximum	3,6%	(='Safety level & changes'!H10*1,1)
Alpha	2	
Beta	3	

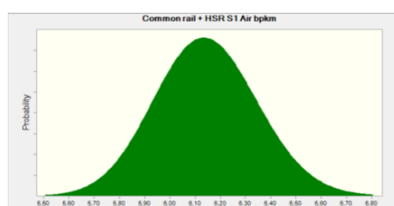


Assumption: Common rail + HSR S1 Air bpkm

Cell: K48

Lognormal distribution with parameters:

Location	0,00	
Mean	6,14	(='Pax&Vehicle km+change'!J12/10000000)
Std. Dev.	0,20	(=K48*0,0333)

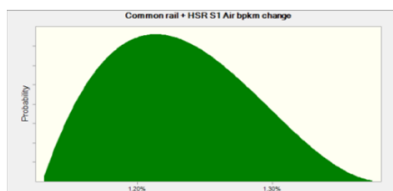


Assumption: Common rail + HSR S1 Air bpkm change

Cell: K61

Beta distribution with parameters:

Minimum	1,13%	(='Pax&Vehicle km+change'!AF7*0,9)
Maximum	1,38%	(='Pax&Vehicle km+change'!AF7*1,1)
Alpha	2	
Beta	3	

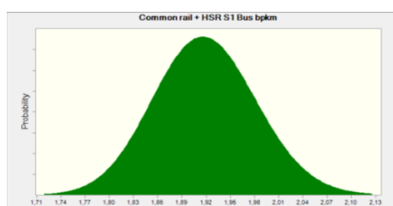


Assumption: Common rail + HSR S1 Bus bpkm

Cell: I48

Lognormal distribution with parameters:

Location	0,00	
Mean	1,92	(='Pax&Vehicle km+change'!J13/10000000)
Std. Dev.	0,06	(=I48*0,0333)

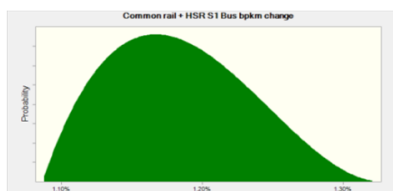


Assumption: Common rail + HSR S1 Bus bpkm change

Cell: I61

Beta distribution with parameters:

Minimum	1,09%	(='Pax&Vehicle km+change'!AK7*0,9)
Maximum	1,33%	(='Pax&Vehicle km+change'!AK7*1,1)
Alpha	2	
Beta	3	

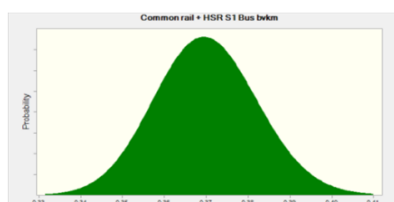


Assumption: Common rail + HSR S1 Bus bvk

Cell: J48

Lognormal distribution with parameters:

Location	0,00	
Mean	0,37	(='Pax&Vehicle km+change'!P13/10000000)
Std. Dev.	0,01	(=J48*0,0333)

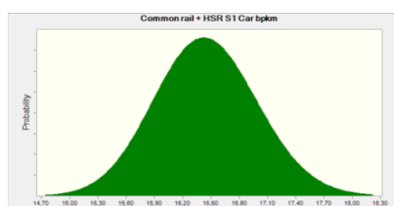


Assumption: Common rail + HSR S1 Car bpk

Cell: G48

Lognormal distribution with parameters:

Location	0,00	
Mean	16,45	(='Pax&Vehicle km+change'!J11/10000000)
Std. Dev.	0,55	(=G48*0,0333)

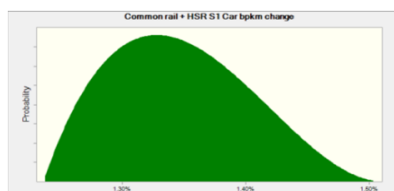


Assumption: Common rail + HSR S1 Car bpk change

Cell: G61

Beta distribution with parameters:

Minimum	1,24%	(='Pax&Vehicle km+change'!AA7*0,9)
Maximum	1,51%	(='Pax&Vehicle km+change'!AA7*1,1)
Alpha	2	
Beta	3	

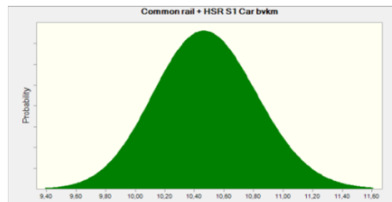


Assumption: Common rail + HSR S1 Car bvk

Cell: H48

Lognormal distribution with parameters:

Location	0,00	
Mean	10,48	(='Pax&Vehicle km+change'!P11/10000000)
Std. Dev.	0,35	(=H48*0,0333)

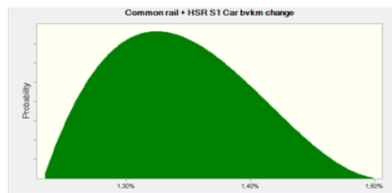


Assumption: Common rail + HSR S1 Car bvk change

Cell: H61

Beta distribution with parameters:

Minimum	1,23%	(='Pax&Vehicle km+change'!AW7*0,9)
Maximum	1,51%	(='Pax&Vehicle km+change'!AW7*1,1)
Alpha	2	
Beta	3	

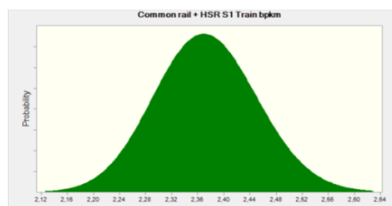


Assumption: Common rail + HSR S1 Train bpk

Cell: E48

Lognormal distribution with parameters:

Location	0,00	
Mean	2,37	(='Pax&Vehicle km+change'!J15/10000000)
Std. Dev.	0,08	(=E48*0,0333)

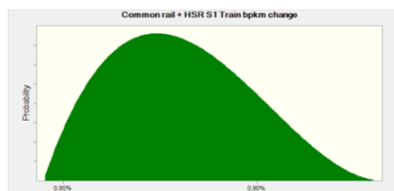


Assumption: Common rail + HSR S1 Train bpkm change

Cell: E61

Beta distribution with parameters:

Minimum	0,79%	(='Pax&Vehicle km+change'!AR7*0,9)
Maximum	0,97%	(='Pax&Vehicle km+change'!AR7*1,1)
Alpha	2	
Beta	3	

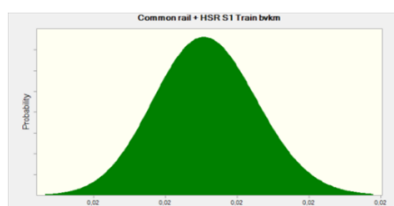


Assumption: Common rail + HSR S1 Train bvkm

Cell: F48

Lognormal distribution with parameters:

Location	0,00	
Mean	0,02	(='Pax&Vehicle km+change'!P15/10000000)
Std. Dev.	0,00	(=F48*0,0333)

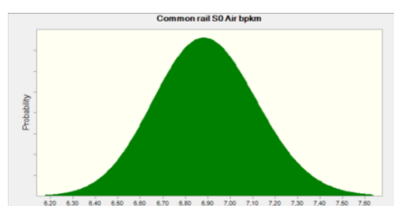


Assumption: Common rail S0 Air bpkm

Cell: K46

Lognormal distribution with parameters:

Location	0,00	
Mean	6,89	(='Pax&Vehicle km+change'!H12/10000000)
Std. Dev.	0,23	(=K46*0,0333)

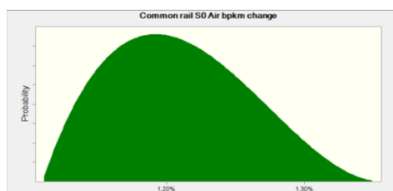


Assumption: Common rail S0 Air bpkm change

Cell: K59

Beta distribution with parameters:

Minimum	1,11%	(='Pax&Vehicle km+change'!AD7*0,9)
Maximum	1,36%	(='Pax&Vehicle km+change'!AD7*1,1)
Alpha	2	
Beta	3	

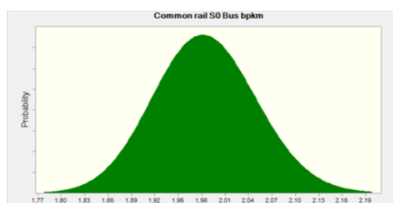


Assumption: Common rail S0 Bus bpkm

Cell: I46

Lognormal distribution with parameters:

Location	0,00	
Mean	1,98	(='Pax&Vehicle km+change'!H13/10000000)
Std. Dev.	0,07	(=I46*0,0333)

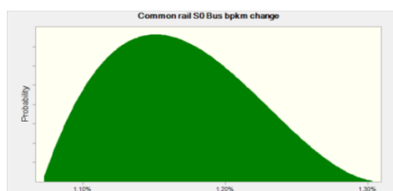


Assumption: Common rail S0 Bus bpkm change

Cell: I59

Beta distribution with parameters:

Minimum	1,07%	(='Pax&Vehicle km+change'!\$AI\$7*0,9)
Maximum	1,31%	(='Pax&Vehicle km+change'!AI7*1,1)
Alpha	2	
Beta	3	

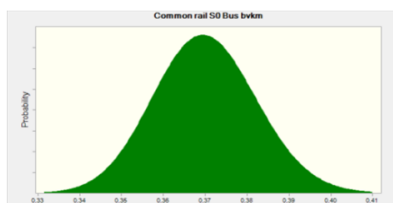


Assumption: Common rail S0 Bus bvkm

Cell: J46

Lognormal distribution with parameters:

Location	0,00	
Mean	0,37	(='Pax&Vehicle km+change'!N13/10000000)
Std. Dev.	0,01	(=J46*0,0333)

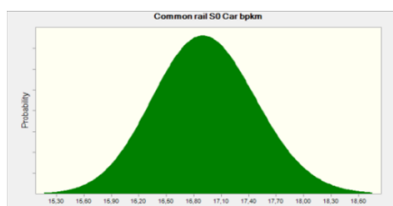


Assumption: Common rail S0 Car bpkm

Cell: G46

Lognormal distribution with parameters:

Location	0,00	
Mean	16,93	(='Pax&Vehicle km+change'!H11/10000000)
Std. Dev.	0,56	(=G46*0,0333)

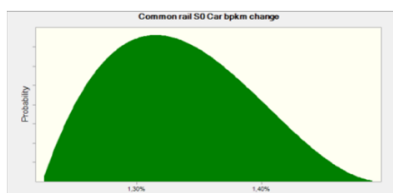


Assumption: Common rail S0 Car bpkm change

Cell: G59

Beta distribution with parameters:

Minimum	1,22%	(='Pax&Vehicle km+change'!Y7*0,9)
Maximum	1,50%	(='Pax&Vehicle km+change'!Y7*1,1)
Alpha	2	
Beta	3	

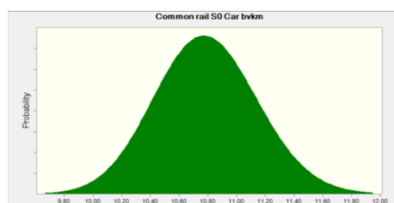


Assumption: Common rail S0 Car bvkm

Cell: H46

Lognormal distribution with parameters:

Location	0,00	
Mean	10,79	(='Pax&Vehicle km+change'!N11/1000000)
Std. Dev.	0,36	(=H46*0,0333)

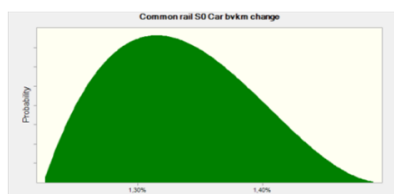


Assumption: Common rail S0 Car bvkm change

Cell: H59

Beta distribution with parameters:

Minimum	1,22%	(='Pax&Vehicle km+change'!\$AU\$7*0,9)
Maximum	1,50%	(='Pax&Vehicle km+change'!\$AU\$7*1,1)
Alpha	2	
Beta	3	

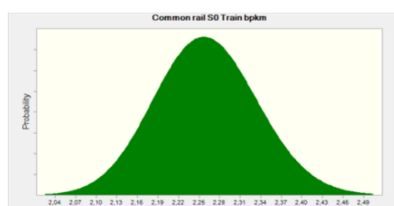


Assumption: Common rail S0 Train bpkm

Cell: E46

Lognormal distribution with parameters:

Location	0,00	
Mean	2,26	(='Pax&Vehicle km+change'!H14/1000000)
Std. Dev.	0,08	(=E46*0,0333)

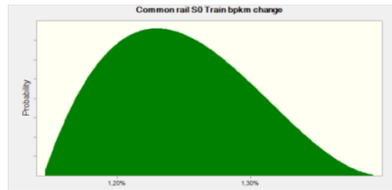


Assumption: Common rail S0 Train bpkm change

Cell: E59

Beta distribution with parameters:

Minimum	1,14%	(='Pax&Vehicle km+change'!\$AN\$7*0,9)
Maximum	1,40%	(='Pax&Vehicle km+change'!\$AN\$7*1,1)
Alpha	2	
Beta	3	

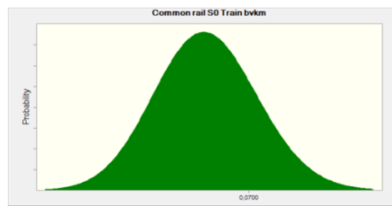


Assumption: Common rail S0 Train bvkm

Cell: F46

Lognormal distribution with parameters:

Location	0,0000	
Mean	0,0681	(='Pax&Vehicle km+change'!N14/10000000)
Std. Dev.	0,0023	(=F46*0,0333)

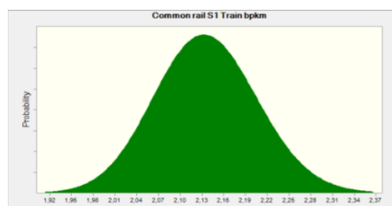


Assumption: Common rail S1 Train bpkm

Cell: E49

Lognormal distribution with parameters:

Location	0,00	
Mean	2,14	(='Pax&Vehicle km+change'!J14/10000000)
Std. Dev.	0,07	(=E49*0,0333)

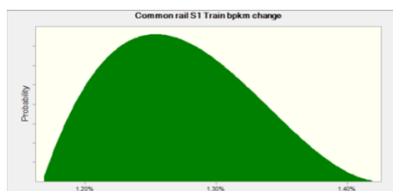


Assumption: Common rail S1 Train bpkm change

Cell: E62

Beta distribution with parameters:

Minimum	1,17%	(='Pax&Vehicle km+change'!AP7*0,9)
Maximum	1,43%	(='Pax&Vehicle km+change'!AP7*1,1)
Alpha	2	
Beta	3	

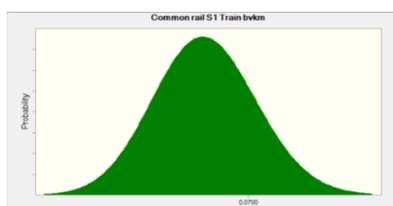


Assumption: Common rail S1 Train bvkm

Cell: F49

Lognormal distribution with parameters:

Location	0,0000	
Mean	0,0681	(='Pax&Vehicle km+change'!E52)
Std. Dev.	0,0023	(=F49*0,0333)

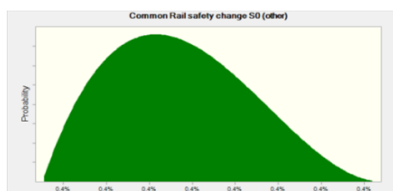


Assumption: Common Rail safety change S0 (other)

Cell: N23

Beta distribution with parameters:

Minimum	0,4%	(='Safety S2 P3 HSR&Common rail'!C23*0)
Maximum	0,4%	(='Safety S2 P3 HSR&Common rail'!C23*1)
Alpha	2	
Beta	3	

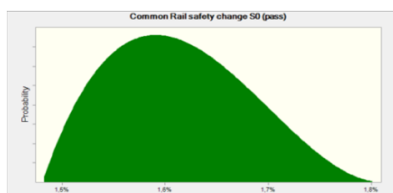


Assumption: Common Rail safety change S0 (pass)

Cell: H23

Beta distribution with parameters:

Minimum	1,5%	(='Safety S2 P3 HSR&Common rail'!C22*0
Maximum	1,8%	(='Safety S2 P3 HSR&Common rail'!C22*1
Alpha	2	
Beta	3	

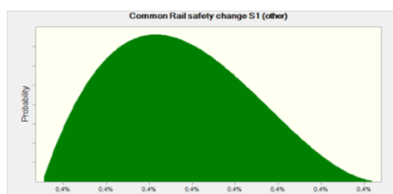


Assumption: Common Rail safety change S1 (other)

Cell: N33

Beta distribution with parameters:

Minimum	0,4%	(='Safety S2 P3 HSR&Common rail'!C23*0
Maximum	0,4%	(='Safety S2 P3 HSR&Common rail'!C23*1
Alpha	2	
Beta	3	

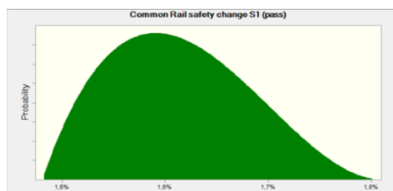


Assumption: Common Rail safety change S1 (pass)

Cell: H33

Beta distribution with parameters:

Minimum	1,5%	(='Safety S2 P3 HSR&Common rail'!C22*0
Maximum	1,8%	(='Safety S2 P3 HSR&Common rail'!C22*1
Alpha	2	
Beta	3	

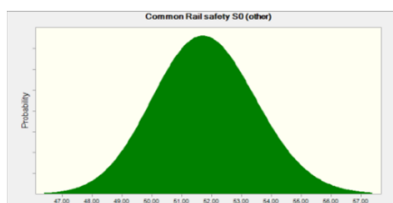


Assumption: Common Rail safety S0 (other)

Cell: K23

Lognormal distribution with parameters:

Location	0,00	
Mean	51,79	(='Safety S2 P3 HSR&Common rail'!C21)
Std. Dev.	1,72	(=K23*0,0333)



Assumption: Common Rail safety S0 (pass)

Cell: E23

Lognormal distribution with parameters:

Location	0,00	
Mean	0,11	(='Safety S2 P3 HSR&Common rail'!C20)
Std. Dev.	0,00	(=E23*0,03333)

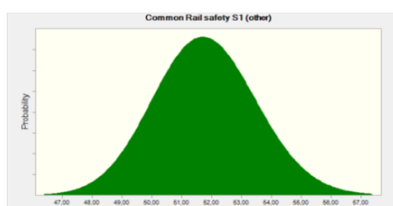


Assumption: Common Rail safety S1 (other)

Cell: K33

Lognormal distribution with parameters:

Location	0,00	
Mean	51,79	(='Safety S2 P3 HSR&Common rail'!C21)
Std. Dev.	1,72	(=K33*0,0333)



Assumption: Common Rail safety S1 (pass)

Cell: E33

Lognormal distribution with parameters:

Location	0,00	
Mean	0,11	(='Safety S2 P3 HSR&Common rail'!C20)
Std. Dev.	0,00	(=E33*0,03333)

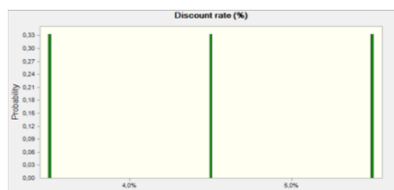


Assumption: Discount rate (%)

Cell: F72

Custom distribution with parameters:

Value	Probability
3,5%	0,33
4,5%	0,33
5,5%	0,33

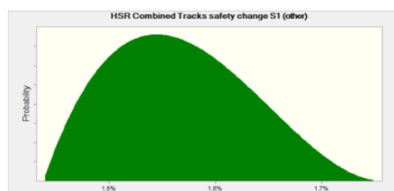


Assumption: HSR Combined Tracks safety change S1 (other)

Cell: N35

Beta distribution with parameters:

Minimum	1,4%	(='Safety S2 P3 HSR&Common rail'!C38*0
Maximum	1,8%	(='Safety S2 P3 HSR&Common rail'!C38*1
Alpha	2	
Beta	3	

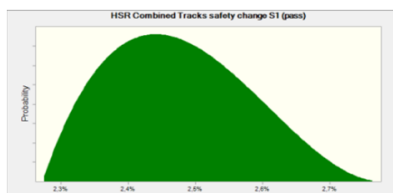


Assumption: HSR Combined Tracks safety change S1 (pass)

Cell: H35

Beta distribution with parameters:

Minimum	2,3%	(='Safety S2 P3 HSR&Common rail'!C35*0
Maximum	2,8%	(='Safety S2 P3 HSR&Common rail'!C35*1
Alpha	2	
Beta	3	

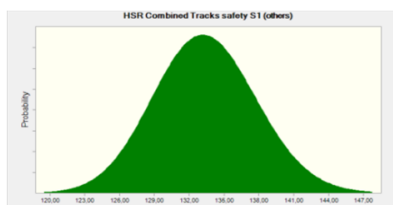


Assumption: HSR Combined Tracks safety S1 (others)

Cell: K35

Lognormal distribution with parameters:

Location	0,00	
Mean	133,40	(='Safety S2 P3 HSR&Common rail'!C32)
Std. Dev.	4,44	(=K35*0,0333)

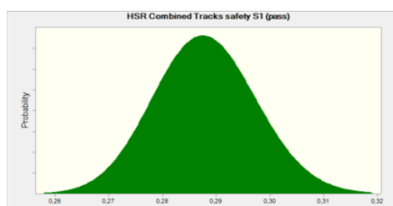


Assumption: HSR Combined Tracks safety S1 (pass)

Cell: E35

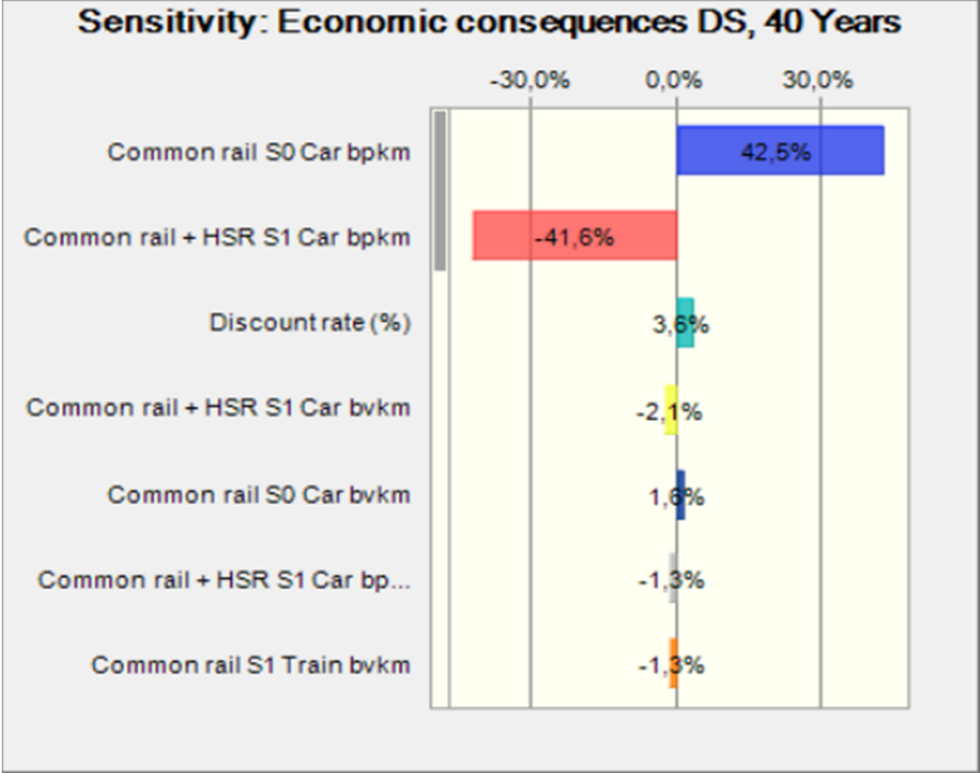
Lognormal distribution with parameters:

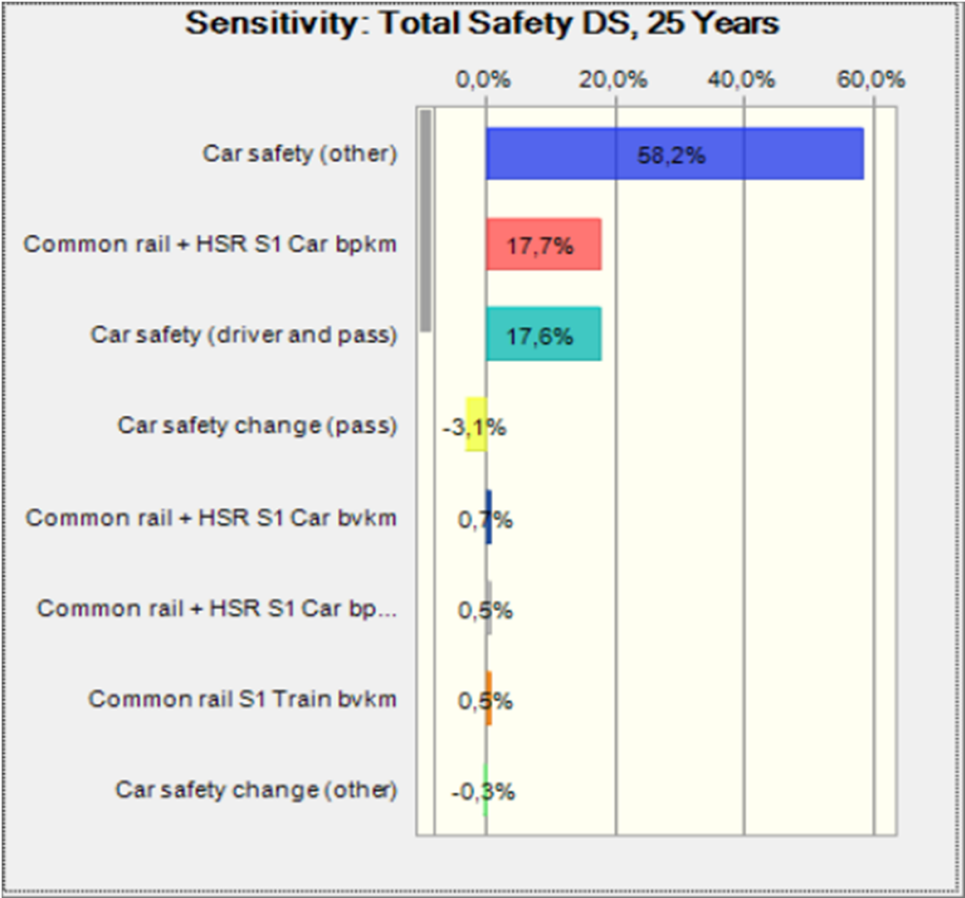
Location	0,00	
Mean	0,29	(='Safety S2 P3 HSR&Common rail'!C31)
Std. Dev.	0,01	(=E35*0,03333)

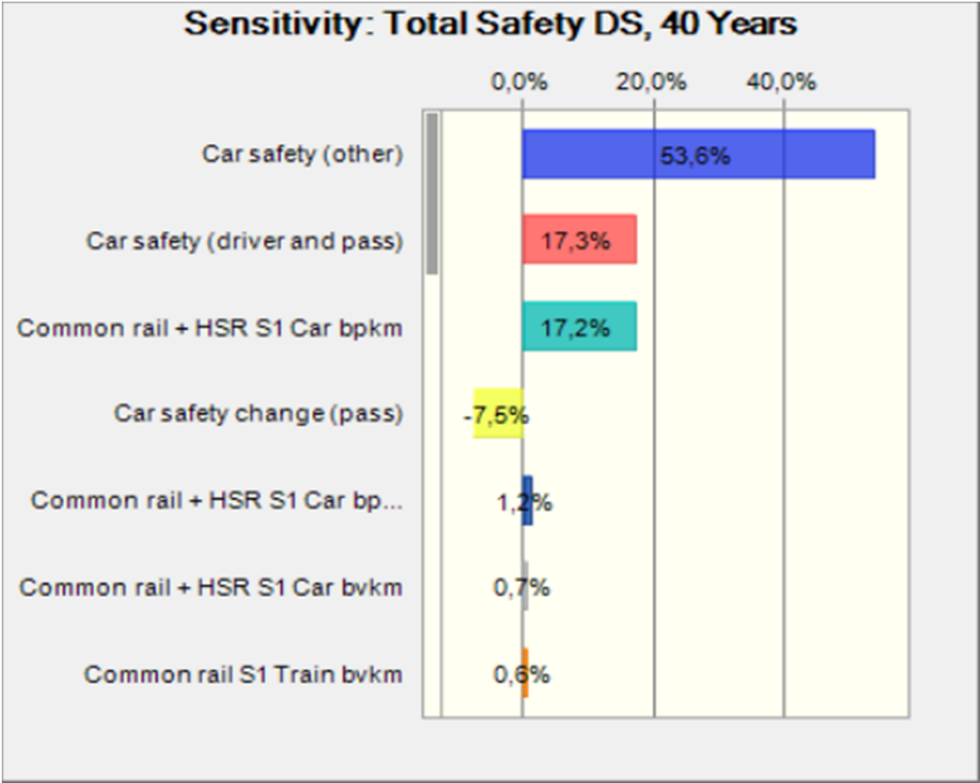


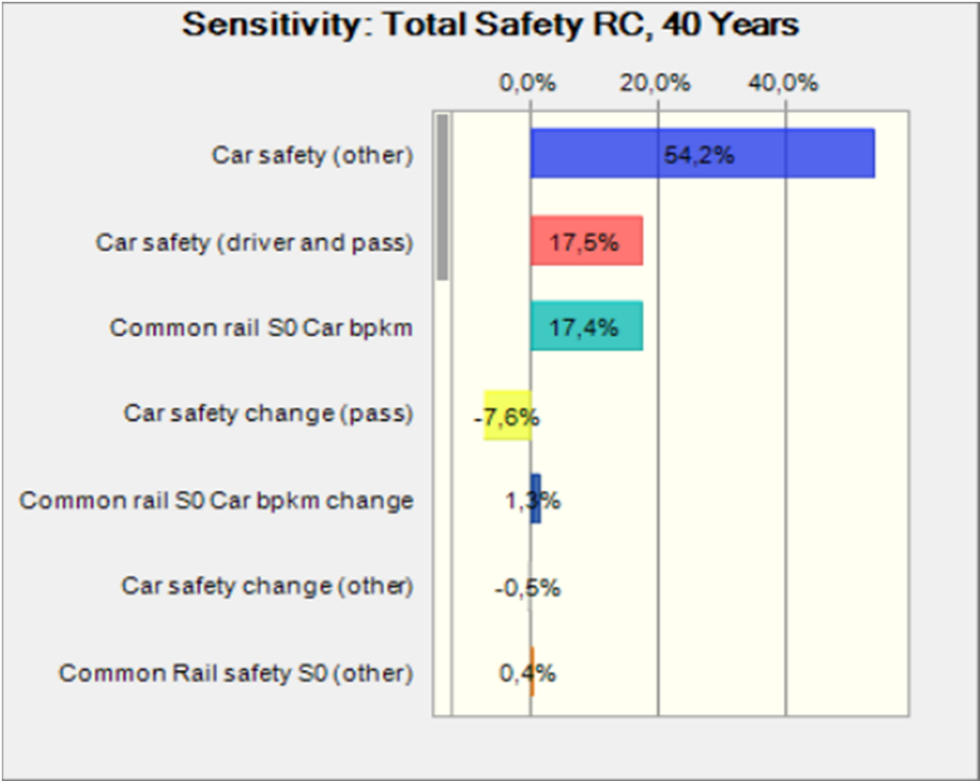
End of Assumptions

Sensitivity Charts









End of Sensitivity Charts

Crystal Ball Report - Custom

Simulation started on 2012-01-12 at 18:26

Simulation stopped on 2012-01-12 at 18:28

Run preferences:

Number of trials run	10 000
Monte Carlo	
Random seed	

Run statistics:

Total running time (sec)	78,50
Trials/second (average)	127
Random numbers per sec	6 369

Crystal Ball data:

Assumptions	50
Correlations	0
Correlated groups	0
Decision variables	0
Forecasts	15

Forecasts

Worksheet: [S3_Model_Oslo_Tronrheim_O2P_120112.xls]Inputs and results

Forecast: Economic consequences DS, 1 Years

Cell: T117

Summary:

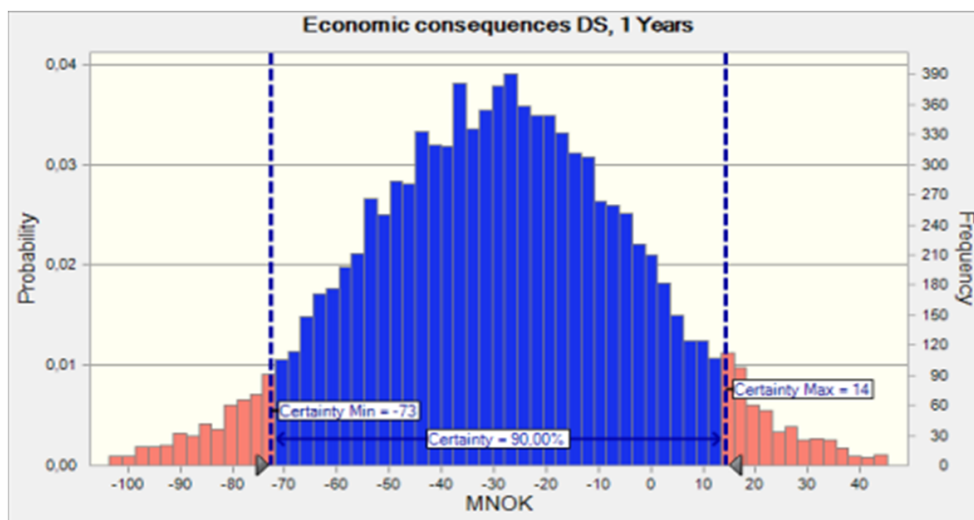
Certainty level is 90,00%

Certainty range is from -73 to 14

Entire range is from -134 to 70

Base case is -3

After 10 000 trials, the std. error of the mean is 0



Forecast: Economic consequences DS, 1 Years (cont'd)

Cell: T117

Statistics:	Forecast values
Trials	10 000
Base Case	-3
Mean	-29
Median	-29
Mode	---
Standard Deviation	27
Variance	704
Skewness	-0,0177
Kurtosis	3,04
Coeff. of Variability	-0,9096
Minimum	-134
Maximum	70
Range Width	205
Mean Std. Error	0

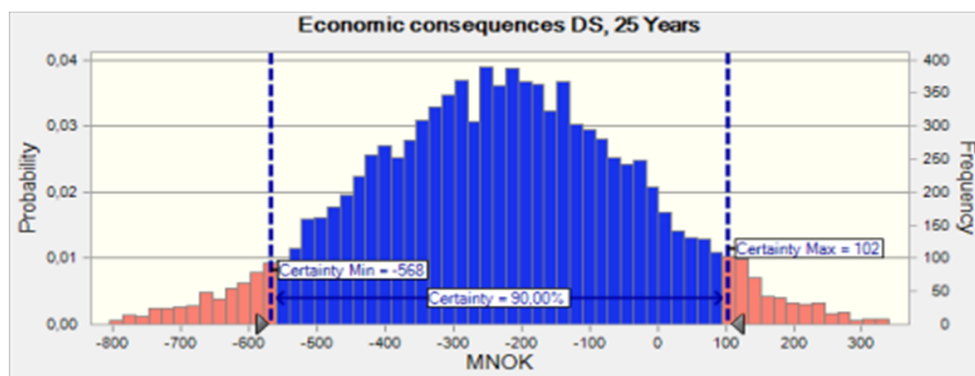
Percentiles:	Forecast values
0%	-134
10%	-63
20%	-51
30%	-43
40%	-36
50%	-29
60%	-22
70%	-15
80%	-7
90%	5
100%	70

Forecast: Economic consequences DS, 25 Years

Cell: W117

Summary:

Certainty level is 90,00%
 Certainty range is from -568 to 102
 Entire range is from -1 094 to 508
 Base case is -27
 After 10 000 trials, the std. error of the mean is 2



Statistics:	Forecast values
Trials	10 000
Base Case	-27
Mean	-232
Median	-230
Mode	---
Standard Deviation	204
Variance	41 576
Skewness	-0,0373
Kurtosis	3,05
Coeff. of Variability	-0,8775
Minimum	-1 094
Maximum	508
Range Width	1 602
Mean Std. Error	2

Forecast: Economic consequences DS, 25 Years (cont'd)

Cell: W117

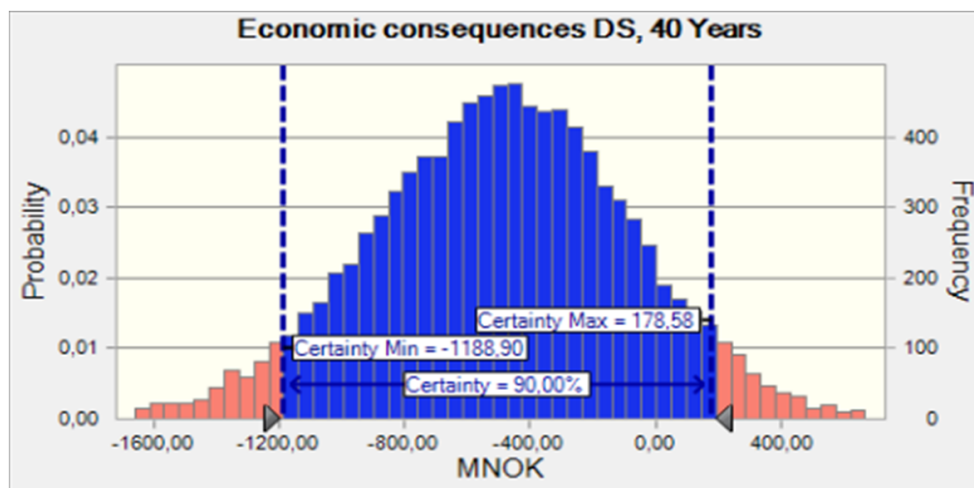
Percentiles:	Forecast values
0%	-1 094
10%	-494
20%	-405
30%	-337
40%	-284
50%	-230
60%	-180
70%	-126
80%	-60
90%	27
100%	508

Forecast: Economic consequences DS, 40 Years

Cell: Z117

Summary:

Certainty level is 90,00%
 Certainty range is from -1188,90 to 178,58
 Entire range is from -2448,24 to 990,69
 Base case is -67,70
 After 10 000 trials, the std. error of the mean is 4,16



Statistics:	Forecast values
Trials	10 000
Base Case	-67,70
Mean	-495,50
Median	-487,10
Mode	---
Standard Deviation	415,73
Variance	172833,47
Skewness	-0,1228
Kurtosis	3,13
Coeff. of Variability	-0,8390
Minimum	-2448,24
Maximum	990,69
Range Width	3438,93
Mean Std. Error	4,16

Forecast: Economic consequences DS, 40 Years (cont'd)

Cell: Z117

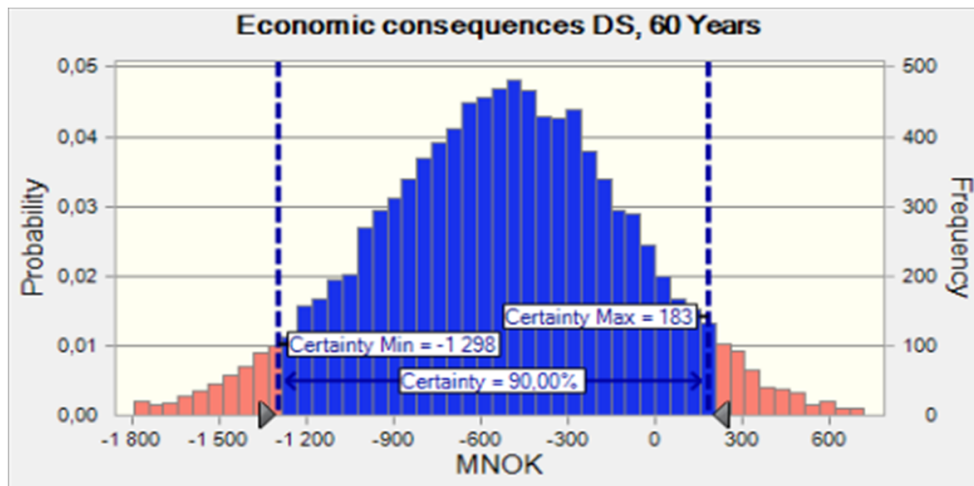
Percentiles:	Forecast values
0%	-2448,24
10%	-1029,32
20%	-840,26
30%	-706,34
40%	-587,81
50%	-487,21
60%	-384,29
70%	-274,90
80%	-148,04
90%	28,76
100%	990,69

Forecast: Economic consequences DS, 60 Years

Cell: AD117

Summary:

Certainty level is 90,00%
 Certainty range is from -1 298 to 183
 Entire range is from -2 702 to 1 077
 Base case is -77
 After 10 000 trials, the std. error of the mean is 4



Statistics:	Forecast values
Trials	10 000
Base Case	-77
Mean	-539
Median	-526
Mode	493
Standard Deviation	450
Variance	202 461
Skewness	-0,1587
Kurtosis	3,18
Coeff. of Variability	-0,8348
Minimum	-2 702
Maximum	1 077
Range Width	3 779
Mean Std. Error	4

Forecast: Economic consequences DS, 60 Years (cont'd)

Cell: AD117

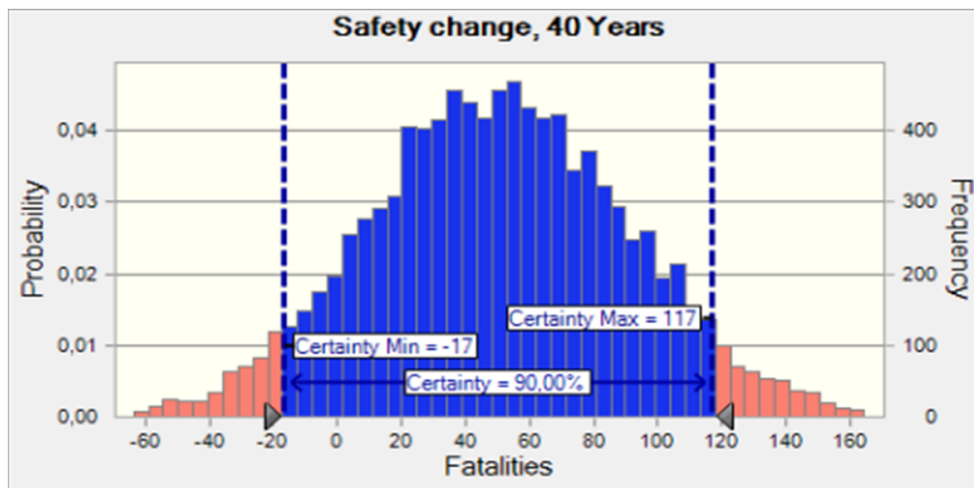
Percentiles:	Forecast values
0%	-2 702
10%	-1 118
20%	-910
30%	-763
40%	-637
50%	-527
60%	-418
70%	-298
80%	-166
90%	24
100%	1 077

Forecast: Safety change, 40 Years

Cell: Z126

Summary:

Certainty level is 90,00%
 Certainty range is from -17 to 117
 Entire range is from -103 to 216
 Base case is 8
 After 10 000 trials, the std. error of the mean is 0



Statistics:	Forecast values
Trials	10 000
Base Case	8
Mean	50
Median	50
Mode	---
Standard Deviation	41
Variance	1 659
Skewness	0,0336
Kurtosis	2,99
Coeff. of Variability	0,8082
Minimum	-103
Maximum	216
Range Width	319
Mean Std. Error	0

Forecast: Safety change, 40 Years (cont'd)

Cell: Z126

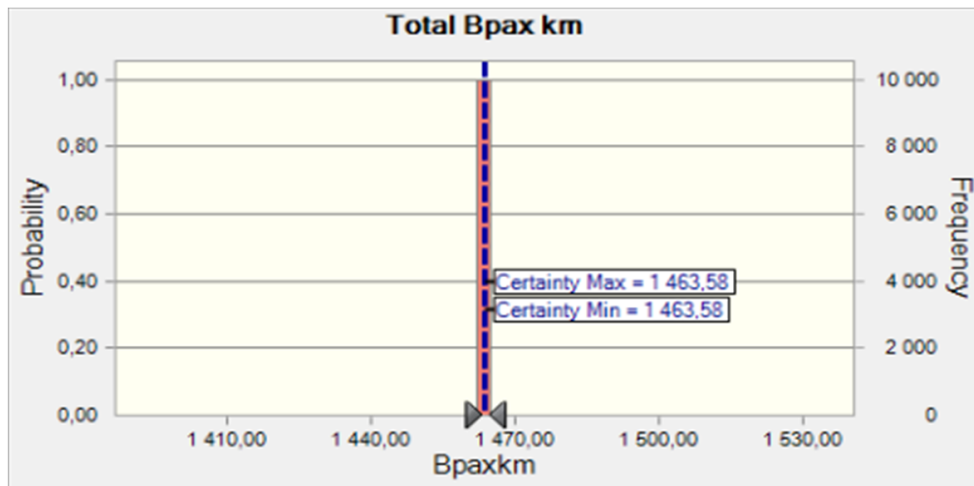
Percentiles:	Forecast values
0%	-103
10%	-2
20%	16
30%	29
40%	39
50%	50
60%	60
70%	71
80%	85
90%	103
100%	216

Forecast: Total Bpax km

Cell: Y138

Summary:

Certainty level is 90,00%
 Certainty range is from 1 463,58 to 1 463,58
 Entire range is from 1 463,58 to 1 463,58
 Base case is 1 463,58
 After 10 000 trials, the std. error of the mean is 0,00



Statistics:	Forecast values
Trials	10 000
Base Case	1 463,58
Mean	1 463,58
Median	1 463,58
Mode	1 463,58
Standard Deviation	0,00
Variance	0,00
Skewness	---
Kurtosis	---
Coeff. of Variability	0,00
Minimum	1 463,58
Maximum	1 463,58
Range Width	0,00
Mean Std. Error	0,00

Forecast: Total Bpax km (cont'd)

Cell: Y138

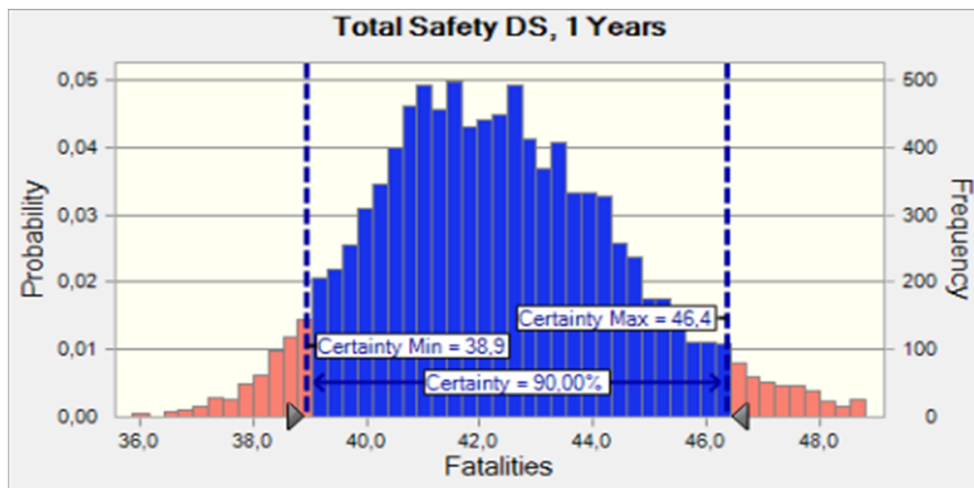
Percentiles:	Forecast values
0%	1 463,58
10%	1 463,58
20%	1 463,58
30%	1 463,58
40%	1 463,58
50%	1 463,58
60%	1 463,58
70%	1 463,58
80%	1 463,58
90%	1 463,58
100%	1 463,58

Forecast: Total Safety DS, 1 Years

Cell: T108

Summary:

Certainty level is 90,00%
 Certainty range is from 38,9 to 46,4
 Entire range is from 35,7 to 56,1
 Base case is 41,6
 After 10 000 trials, the std. error of the mean is 0,0



Statistics:	Forecast values
Trials	10 000
Base Case	41,6
Mean	42,3
Median	42,1
Mode	---
Standard Deviation	2,3
Variance	5,3
Skewness	0,5813
Kurtosis	3,87
Coeff. of Variability	0,0544
Minimum	35,7
Maximum	56,1
Range Width	20,4
Mean Std. Error	0,0

Forecast: Total Safety DS, 1 Years (cont'd)

Cell: T108

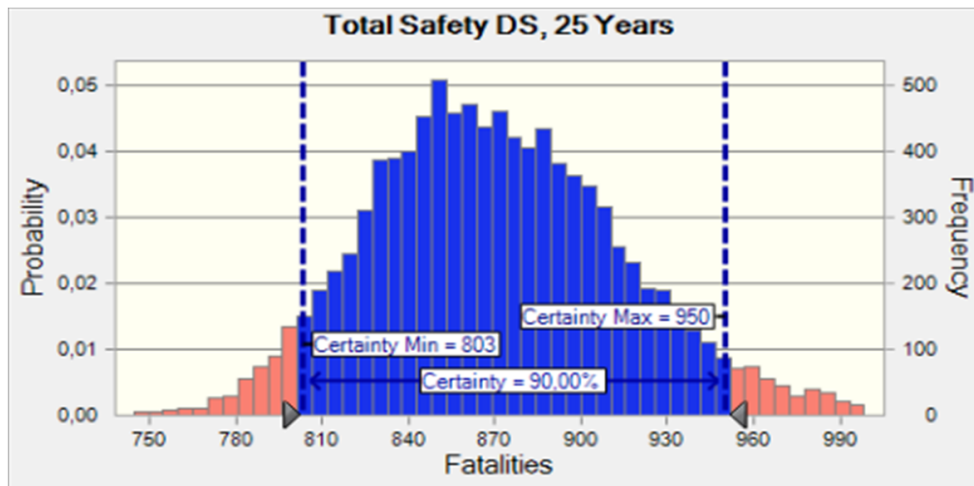
Percentiles:	Forecast values
0%	35,7
10%	39,6
20%	40,4
30%	41,0
40%	41,6
50%	42,1
60%	42,7
70%	43,4
80%	44,1
90%	45,3
100%	56,1

Forecast: Total Safety DS, 25 Years

Cell: W108

Summary:

Certainty level is 90,00%
 Certainty range is from 803 to 950
 Entire range is from 722 to 1 115
 Base case is 856
 After 10 000 trials, the std. error of the mean is 0



Statistics:	Forecast values
Trials	10 000
Base Case	856
Mean	871
Median	868
Mode	---
Standard Deviation	45
Variance	2 060
Skewness	0,5170
Kurtosis	3,74
Coeff. of Variability	0,0521
Minimum	722
Maximum	1 115
Range Width	393
Mean Std. Error	0

Forecast: Total Safety DS, 25 Years (cont'd)

Cell: W108

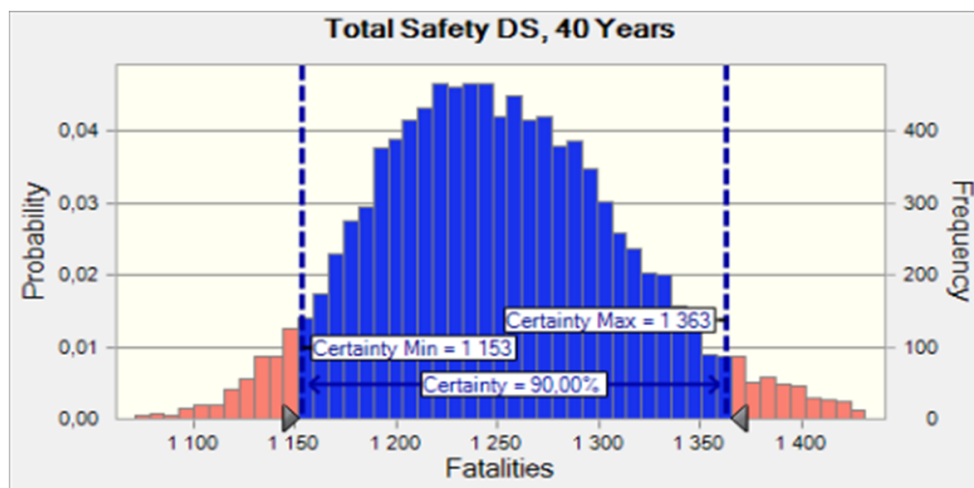
Percentiles:	Forecast values
0%	722
10%	817
20%	833
30%	846
40%	857
50%	868
60%	880
70%	893
80%	907
90%	930
100%	1 115

Forecast: Total Safety DS, 40 Years

Cell: Z108

Summary:

Certainty level is 90,00%
 Certainty range is from 1 153 to 1 363
 Entire range is from 1 030 to 1 578
 Base case is 1 230
 After 10 000 trials, the std. error of the mean is 1



Statistics:	Forecast values
Trials	10 000
Base Case	1 230
Mean	1 251
Median	1 247
Mode	---
Standard Deviation	64
Variance	4 157
Skewness	0,4636
Kurtosis	3,64
Coeff. of Variability	0,0515
Minimum	1 030
Maximum	1 578
Range Width	548
Mean Std. Error	1

Forecast: Total Safety DS, 40 Years (cont'd)

Cell: Z108

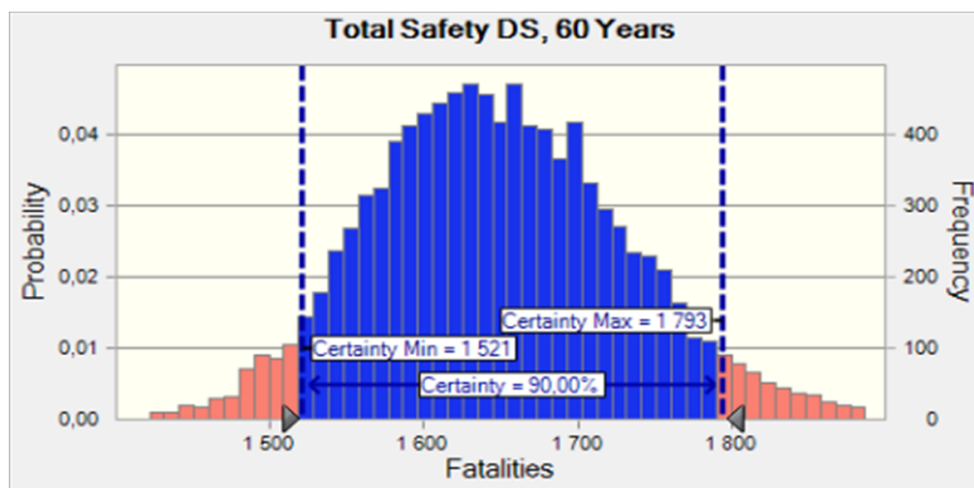
Percentiles:	Forecast values
0%	1 030
10%	1 173
20%	1 197
30%	1 215
40%	1 231
50%	1 247
60%	1 263
70%	1 282
80%	1 302
90%	1 334
100%	1 578

Forecast: Total Safety DS, 60 Years

Cell: AD108

Summary:

Certainty level is 90,00%
 Certainty range is from 1 521 to 1 793
 Entire range is from 1 350 to 2 070
 Base case is 1 624
 After 10 000 trials, the std. error of the mean is 1



Statistics:	Forecast values
Trials	10 000
Base Case	1 624
Mean	1 649
Median	1 644
Mode	1 541
Standard Deviation	85
Variance	7 156
Skewness	0,3958
Kurtosis	3,51
Coeff. of Variability	0,0513
Minimum	1 350
Maximum	2 070
Range Width	721
Mean Std. Error	1

Forecast: Total Safety DS, 60 Years (cont'd)

Cell: AD108

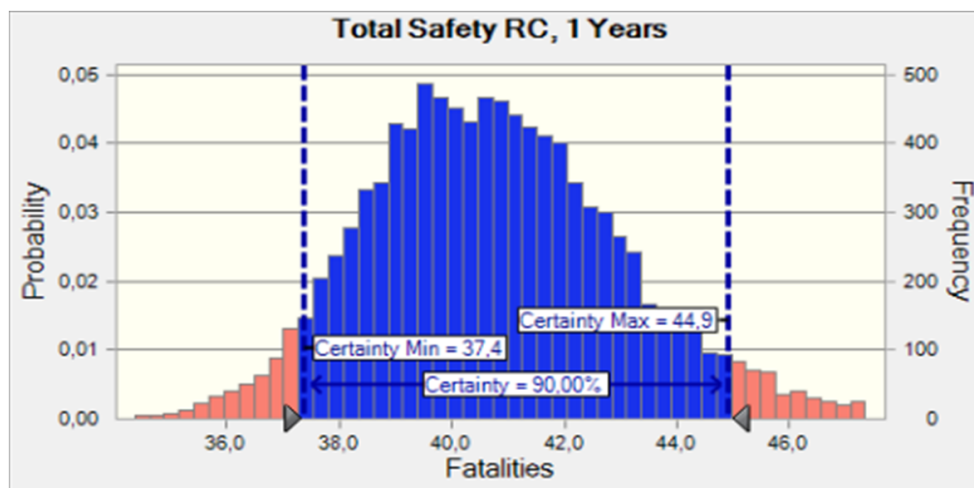
Percentiles:	Forecast values
0%	1 350
10%	1 547
20%	1 578
30%	1 602
40%	1 623
50%	1 644
60%	1 666
70%	1 690
80%	1 717
90%	1 757
100%	2 070

Forecast: Total Safety RC, 1 Years

Cell: S108

Summary:

Certainty level is 90,00%
 Certainty range is from 37,4 to 44,9
 Entire range is from 34,4 to 55,2
 Base case is 41,4
 After 10 000 trials, the std. error of the mean is 0,0



Statistics:	Forecast values
Trials	10 000
Base Case	41,4
Mean	40,8
Median	40,6
Mode	---
Standard Deviation	2,3
Variance	5,4
Skewness	0,5840
Kurtosis	3,95
Coeff. of Variability	0,0572
Minimum	34,4
Maximum	55,2
Range Width	20,8
Mean Std. Error	0,0

Forecast: Total Safety RC, 1 Years (cont'd)

Cell: S108

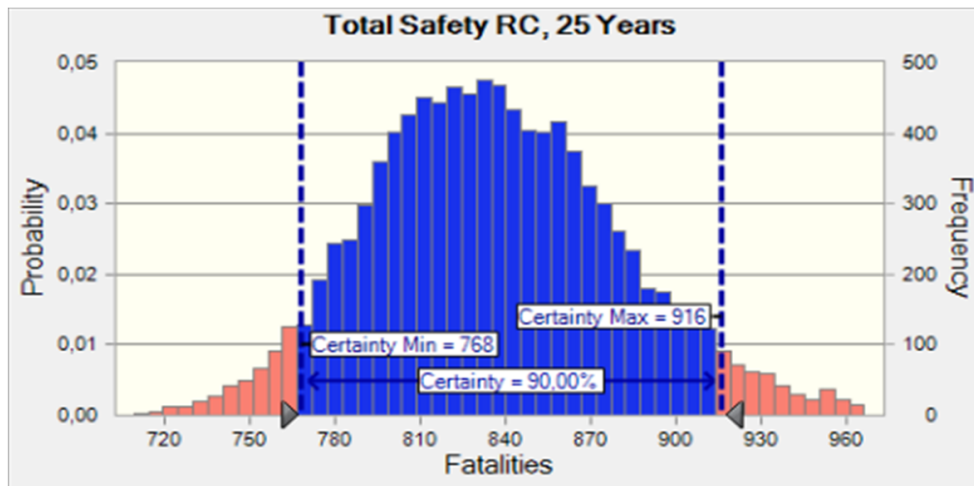
Percentiles:	Forecast values
0%	34,4
10%	38,0
20%	38,9
30%	39,5
40%	40,0
50%	40,6
60%	41,2
70%	41,9
80%	42,6
90%	43,8
100%	55,2

Forecast: Total Safety RC, 25 Years

Cell: V108

Summary:

Certainty level is 90,00%
 Certainty range is from 768 to 916
 Entire range is from 696 to 1 086
 Base case is 852
 After 10 000 trials, the std. error of the mean is 0



Statistics:	Forecast values
Trials	10 000
Base Case	852
Mean	837
Median	834
Mode	---
Standard Deviation	46
Variance	2 107
Skewness	0,5154
Kurtosis	3,81
Coeff. of Variability	0,0548
Minimum	696
Maximum	1 086
Range Width	390
Mean Std. Error	0

Forecast: Total Safety RC, 25 Years (cont'd)

Cell: V108

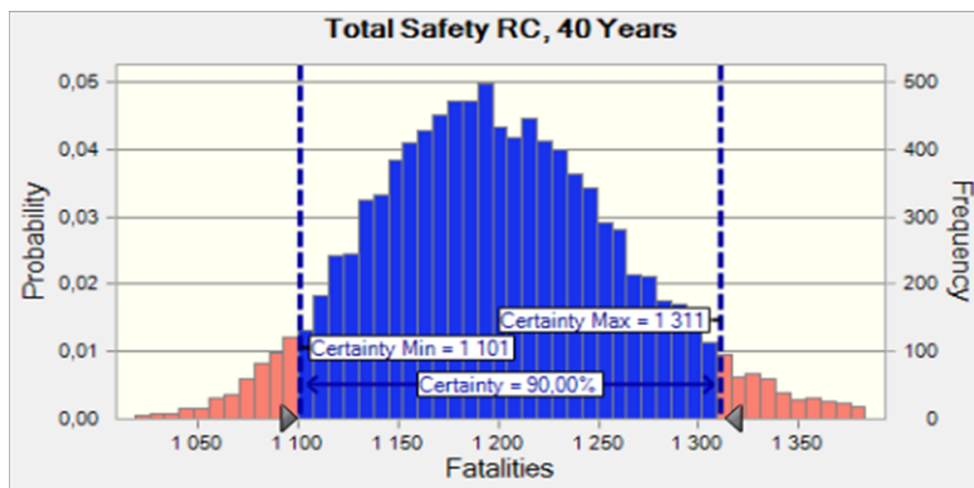
Percentiles:	Forecast values
0%	696
10%	782
20%	799
30%	811
40%	823
50%	834
60%	846
70%	859
80%	873
90%	897
100%	1 086

Forecast: Total Safety RC, 40 Years

Cell: Y108

Summary:

Certainty level is 90,00%
 Certainty range is from 1 101 to 1 311
 Entire range is from 993 to 1 541
 Base case is 1 222
 After 10 000 trials, the std. error of the mean is 1



Statistics:	Forecast values
Trials	10 000
Base Case	1 222
Mean	1 201
Median	1 196
Mode	---
Standard Deviation	65
Variance	4 248
Skewness	0,4580
Kurtosis	3,69
Coeff. of Variability	0,0543
Minimum	993
Maximum	1 541
Range Width	548
Mean Std. Error	1

Forecast: Total Safety RC, 40 Years (cont'd)

Cell: Y108

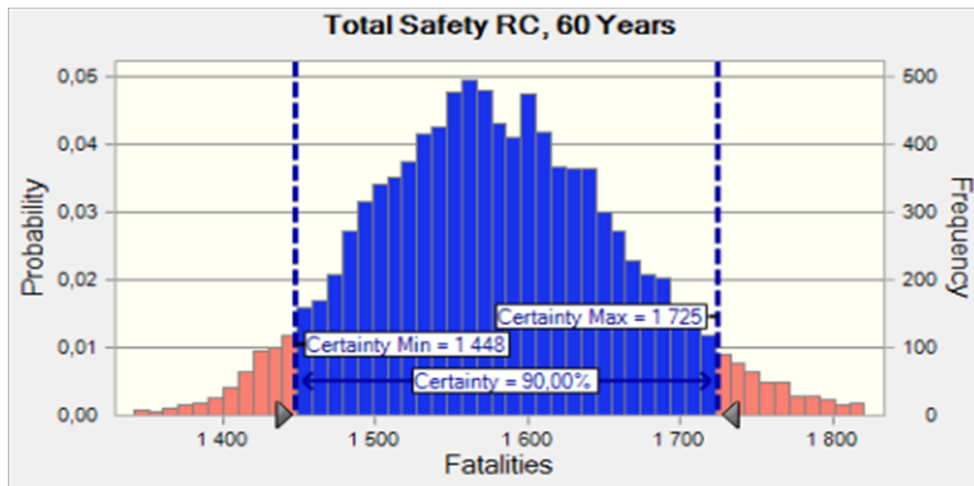
Percentiles:	Forecast values
0%	993
10%	1 122
20%	1 146
30%	1 165
40%	1 181
50%	1 196
60%	1 214
70%	1 231
80%	1 252
90%	1 285
100%	1 541

Forecast: Total Safety RC, 60 Years

Cell: AC108

Summary:

Certainty level is 90,00%
 Certainty range is from 1 448 to 1 725
 Entire range is from 1 301 to 2 014
 Base case is 1 612
 After 10 000 trials, the std. error of the mean is 1



Statistics:	Forecast values
Trials	10 000
Base Case	1 612
Mean	1 581
Median	1 576
Mode	1 599
Standard Deviation	85
Variance	7 303
Skewness	0,3852
Kurtosis	3,54
Coeff. of Variability	0,0541
Minimum	1 301
Maximum	2 014
Range Width	713
Mean Std. Error	1

Forecast: Total Safety RC, 60 Years (cont'd)

Cell: AC108

Percentiles:	Forecast values
0%	1 301
10%	1 477
20%	1 508
30%	1 535
40%	1 556
50%	1 576
60%	1 599
70%	1 622
80%	1 649
90%	1 690
100%	2 014

End of Forecasts

Assumptions

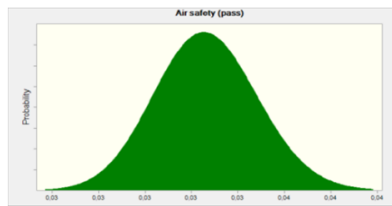
Worksheet: [S3_Model_Oslo_Tronrheim_O2P_120112.xls]Inputs and results

Assumption: Air safety (pass)

Cell: E15

Lognormal distribution with parameters:

Location	0,00	
Mean	0,03	(='Safety level & changes'!E14)
Std. Dev.	0,00	(=E15*0,03333)

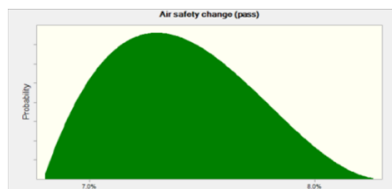


Assumption: Air safety change (pass)

Cell: H15

Beta distribution with parameters:

Minimum	6,8%	(='Safety level & changes'!H14*0,9)
Maximum	8,3%	(='Safety level & changes'!H14*1,1)
Alpha	2	
Beta	3	



Assumption: Bus safety (other)

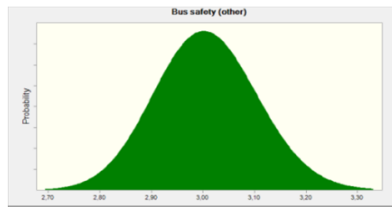
Cell: K15

Lognormal distribution with parameters:

Location	0,00	
Mean	3,01	(='Safety level & changes'!K14)
Std. Dev.	0,10	(=K15*0,0333)

Assumption: Bus safety (other) (cont'd)

Cell: K15

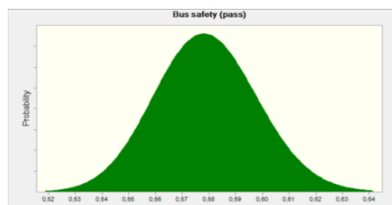


Assumption: Bus safety (pass)

Cell: E13

Lognormal distribution with parameters:

Location	0,00	
Mean	0,58	(='Safety level & changes'!E12)
Std. Dev.	0,02	(=E13*0,03333)

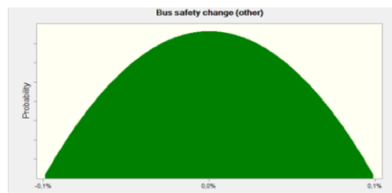


Assumption: Bus safety change (other)

Cell: N15

Beta distribution with parameters:

Minimum	-0,1%	(=-0,001+'Safety level & changes'!N14*0,9)
Maximum	0,1%	(=0,001+'Safety level & changes'!N14*1,1)
Alpha	2	
Beta	2	

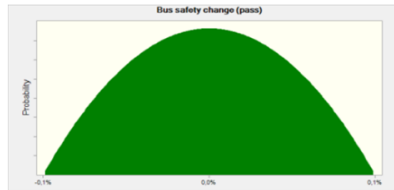


Assumption: Bus safety change (pass)

Cell: H13

Beta distribution with parameters:

Minimum	-0,1%	(=-0,001+'Safety level & changes'!H12*0,9)
Maximum	0,1%	(=0,001+'Safety level & changes'!H12*1,1)
Alpha	2	
Beta	2	

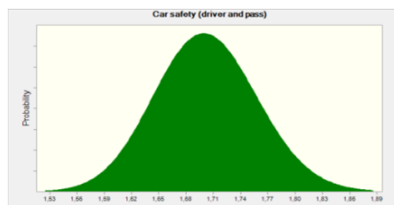


Assumption: Car safety (driver and pass)

Cell: E11

Lognormal distribution with parameters:

Location	0,00	
Mean	1,70	(='Safety level & changes'!E10)
Std. Dev.	0,06	(=E11*0,03333)

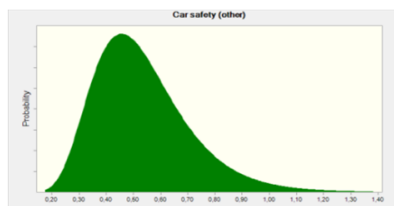


Assumption: Car safety (other)

Cell: K11

Lognormal distribution with parameters:

Location	0,00	
Mean	0,53	(='Safety level & changes'!K10)
Std. Dev.	0,18	(=K11*0,3333)

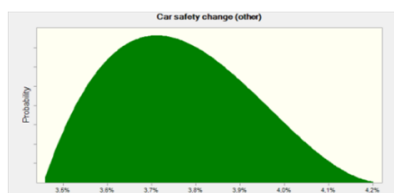


Assumption: Car safety change (other)

Cell: N11

Beta distribution with parameters:

Minimum	3,5%	(='Safety level & changes'!N10*0,9)
Maximum	4,2%	(='Safety level & changes'!N10*1,1)
Alpha	2	
Beta	3	

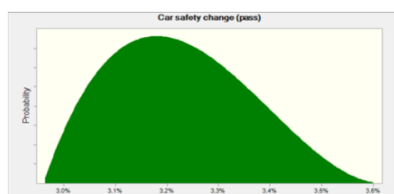


Assumption: Car safety change (pass)

Cell: H11

Beta distribution with parameters:

Minimum	3,0%	(='Safety level & changes'!H10*0,9)
Maximum	3,6%	(='Safety level & changes'!H10*1,1)
Alpha	2	
Beta	3	

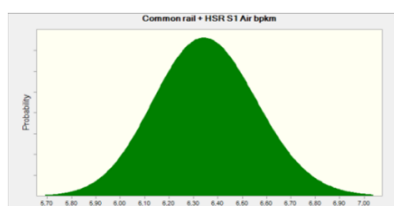


Assumption: Common rail + HSR S1 Air bpkm

Cell: K48

Lognormal distribution with parameters:

Location	0,00	
Mean	6,35	(='Pax&Vehicle km+change'!J12/10000000)
Std. Dev.	0,21	(=K48*0,0333)

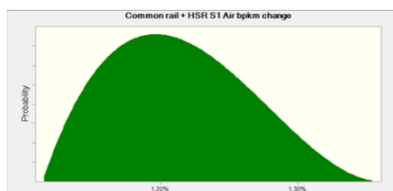


Assumption: Common rail + HSR S1 Air bpkm change

Cell: K61

Beta distribution with parameters:

Minimum	1,11%	(='Pax&Vehicle km+change'!AF7*0,9)
Maximum	1,36%	(='Pax&Vehicle km+change'!AF7*1,1)
Alpha	2	
Beta	3	

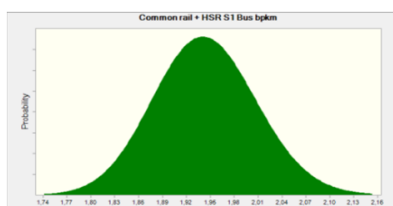


Assumption: Common rail + HSR S1 Bus bpkm

Cell: I48

Lognormal distribution with parameters:

Location	0,00	
Mean	1,94	(='Pax&Vehicle km+change'!J13/10000000)
Std. Dev.	0,06	(=I48*0,0333)

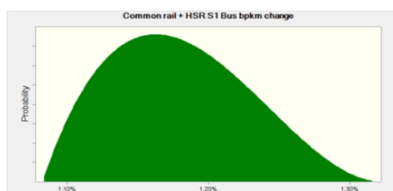


Assumption: Common rail + HSR S1 Bus bpkm change

Cell: I61

Beta distribution with parameters:

Minimum	1,08%	(='Pax&Vehicle km+change'!AK7*0,9)
Maximum	1,32%	(='Pax&Vehicle km+change'!AK7*1,1)
Alpha	2	
Beta	3	

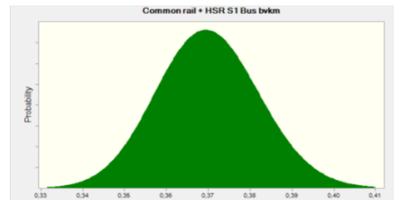


Assumption: Common rail + HSR S1 Bus bvk

Cell: J48

Lognormal distribution with parameters:

Location	0,00	
Mean	0,37	(='Pax&Vehicle km+change'!P13/1000000)
Std. Dev.	0,01	(=J48*0,0333)

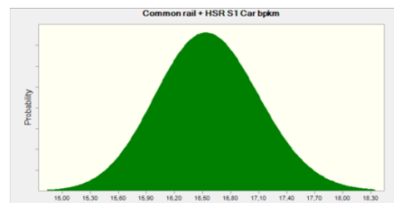


Assumption: Common rail + HSR S1 Car bpk

Cell: G48

Lognormal distribution with parameters:

Location	0,00	
Mean	16,56	(='Pax&Vehicle km+change'!J11/1000000)
Std. Dev.	0,55	(=G48*0,0333)

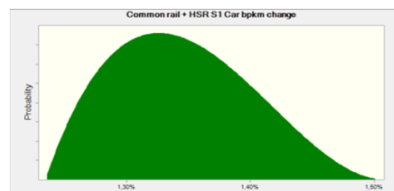


Assumption: Common rail + HSR S1 Car bpk change

Cell: G61

Beta distribution with parameters:

Minimum	1,23%	(='Pax&Vehicle km+change'!AA7*0,9)
Maximum	1,51%	(='Pax&Vehicle km+change'!AA7*1,1)
Alpha	2	
Beta	3	

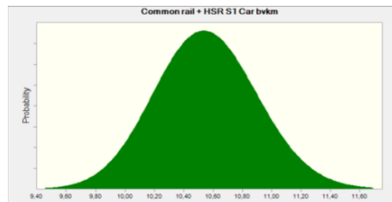


Assumption: Common rail + HSR S1 Car bvk

Cell: H48

Lognormal distribution with parameters:

Location	0,00	
Mean	10,55	(='Pax&Vehicle km+change'!P11/1000000)
Std. Dev.	0,35	(=H48*0,0333)

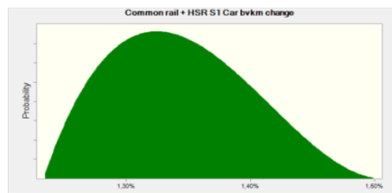


Assumption: Common rail + HSR S1 Car bvk change

Cell: H61

Beta distribution with parameters:

Minimum	1,23%	(='Pax&Vehicle km+change'!AW7*0,9)
Maximum	1,51%	(='Pax&Vehicle km+change'!AW7*1,1)
Alpha	2	
Beta	3	

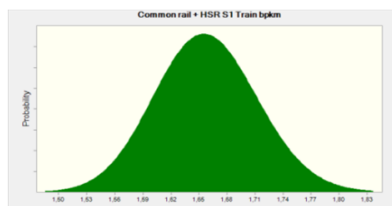


Assumption: Common rail + HSR S1 Train bpk

Cell: E48

Lognormal distribution with parameters:

Location	0,00	
Mean	1,66	(='Pax&Vehicle km+change'!J15/1000000)
Std. Dev.	0,06	(=E48*0,0333)

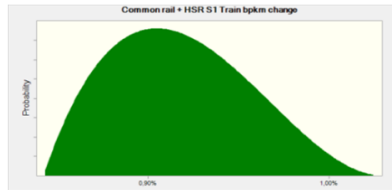


Assumption: Common rail + HSR S1 Train bpkm change

Cell: E61

Beta distribution with parameters:

Minimum	0,84%	(='Pax&Vehicle km+change'!AR7*0,9)
Maximum	1,03%	(='Pax&Vehicle km+change'!AR7*1,1)
Alpha	2	
Beta	3	

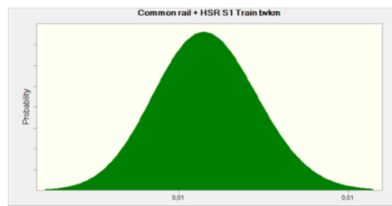


Assumption: Common rail + HSR S1 Train bvkm

Cell: F48

Lognormal distribution with parameters:

Location	0,00	
Mean	0,01	(='Pax&Vehicle km+change'!P15/10000000)
Std. Dev.	0,00	(=F48*0,0333)

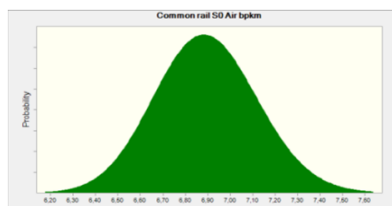


Assumption: Common rail S0 Air bpkm

Cell: K46

Lognormal distribution with parameters:

Location	0,00	
Mean	6,89	(='Pax&Vehicle km+change'!H12/10000000)
Std. Dev.	0,23	(=K46*0,0333)

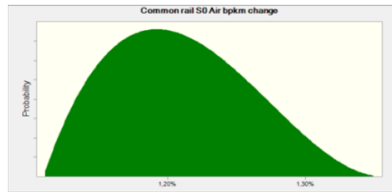


Assumption: Common rail S0 Air bpkm change

Cell: K59

Beta distribution with parameters:

Minimum	1,11%	(='Pax&Vehicle km+change'!AD7*0,9)
Maximum	1,36%	(='Pax&Vehicle km+change'!AD7*1,1)
Alpha	2	
Beta	3	

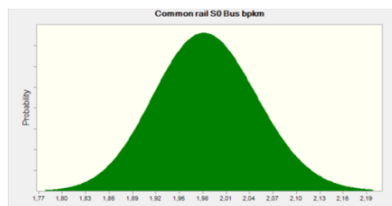


Assumption: Common rail S0 Bus bpkm

Cell: I46

Lognormal distribution with parameters:

Location	0,00	
Mean	1,98	(='Pax&Vehicle km+change'!H13/1000000)
Std. Dev.	0,07	(=I46*0,0333)

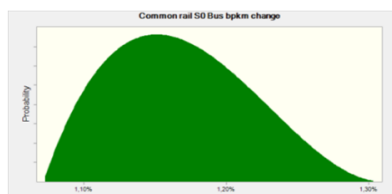


Assumption: Common rail S0 Bus bpkm change

Cell: I59

Beta distribution with parameters:

Minimum	1,07%	(='Pax&Vehicle km+change'!\$AI\$7*0,9)
Maximum	1,31%	(='Pax&Vehicle km+change'!AI7*1,1)
Alpha	2	
Beta	3	

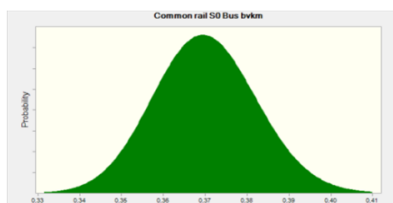


Assumption: Common rail S0 Bus bvk

Cell: J46

Lognormal distribution with parameters:

Location	0,00	
Mean	0,37	(='Pax&Vehicle km+change'!N13/1000000)
Std. Dev.	0,01	(=J46*0,0333)

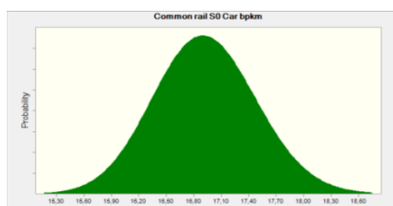


Assumption: Common rail S0 Car bpk

Cell: G46

Lognormal distribution with parameters:

Location	0,00	
Mean	16,93	(='Pax&Vehicle km+change'!H11/1000000)
Std. Dev.	0,56	(=G46*0,0333)

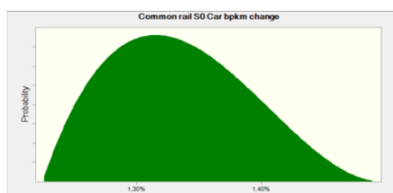


Assumption: Common rail S0 Car bpk change

Cell: G59

Beta distribution with parameters:

Minimum	1,22%	(='Pax&Vehicle km+change'!Y7*0,9)
Maximum	1,50%	(='Pax&Vehicle km+change'!Y7*1,1)
Alpha	2	
Beta	3	

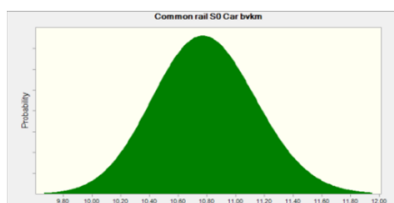


Assumption: Common rail S0 Car bvkm

Cell: H46

Lognormal distribution with parameters:

Location	0,00	
Mean	10,79	(='Pax&Vehicle km+change'!N11/1000000)
Std. Dev.	0,36	(=H46*0,0333)

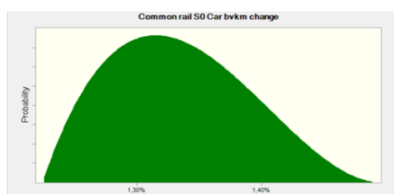


Assumption: Common rail S0 Car bvkm change

Cell: H59

Beta distribution with parameters:

Minimum	1,22%	(='Pax&Vehicle km+change'!\$AU\$7*0,9)
Maximum	1,50%	(='Pax&Vehicle km+change'!\$AU\$7*1,1)
Alpha	2	
Beta	3	

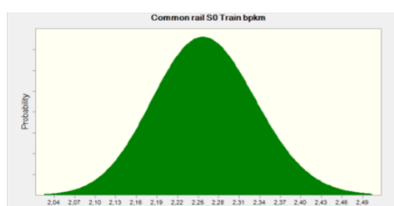


Assumption: Common rail S0 Train bpkm

Cell: E46

Lognormal distribution with parameters:

Location	0,00	
Mean	2,26	(='Pax&Vehicle km+change'!H14/1000000)
Std. Dev.	0,08	(=E46*0,0333)

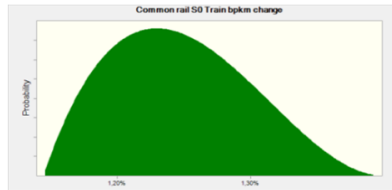


Assumption: Common rail S0 Train bpkm change

Cell: E59

Beta distribution with parameters:

Minimum	1,14%	(='Pax&Vehicle km+change'!\$AN\$7*0,9)
Maximum	1,40%	(='Pax&Vehicle km+change'!\$AN\$7*1,1)
Alpha	2	
Beta	3	

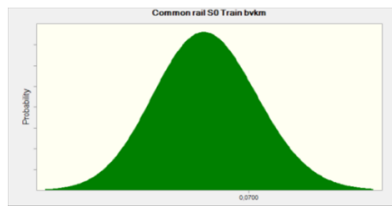


Assumption: Common rail S0 Train bvkm

Cell: F46

Lognormal distribution with parameters:

Location	0,0000	
Mean	0,0681	(='Pax&Vehicle km+change'!N14/10000000)
Std. Dev.	0,0023	(=F46*0,0333)

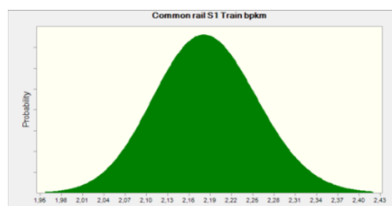


Assumption: Common rail S1 Train bpkm

Cell: E49

Lognormal distribution with parameters:

Location	0,00	
Mean	2,18	(='Pax&Vehicle km+change'!J14/10000000)
Std. Dev.	0,07	(=E49*0,0333)

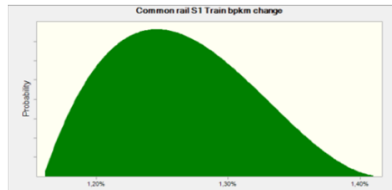


Assumption: Common rail S1 Train bpkm change

Cell: E62

Beta distribution with parameters:

Minimum	1,16%	(='Pax&Vehicle km+change'!AP7*0,9)
Maximum	1,42%	(='Pax&Vehicle km+change'!AP7*1,1)
Alpha	2	
Beta	3	

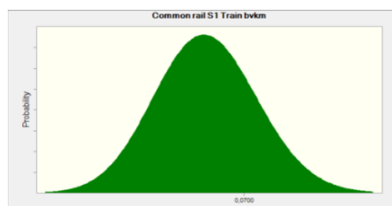


Assumption: Common rail S1 Train bvkm

Cell: F49

Lognormal distribution with parameters:

Location	0,0000	
Mean	0,0683	(='Pax&Vehicle km+change'!E52)
Std. Dev.	0,0023	(=F49*0,0333)

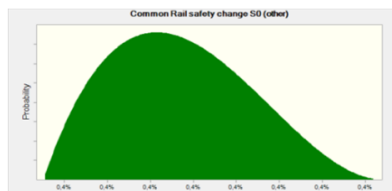


Assumption: Common Rail safety change S0 (other)

Cell: N23

Beta distribution with parameters:

Minimum	0,4%	(='Safety S2 P3 HSR&Common rail'!C23*0)
Maximum	0,4%	(='Safety S2 P3 HSR&Common rail'!C23*1)
Alpha	2	
Beta	3	

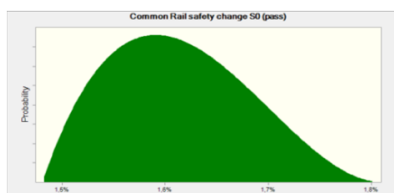


Assumption: Common Rail safety change S0 (pass)

Cell: H23

Beta distribution with parameters:

Minimum	1,5%	(= 'Safety S2 P3 HSR&Common rail'!C22*0
Maximum	1,8%	(= 'Safety S2 P3 HSR&Common rail'!C22*1
Alpha	2	
Beta	3	

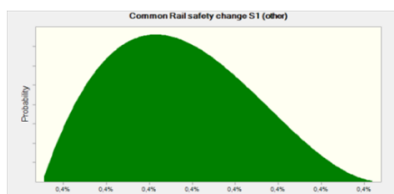


Assumption: Common Rail safety change S1 (other)

Cell: N33

Beta distribution with parameters:

Minimum	0,4%	(= 'Safety S2 P3 HSR&Common rail'!C23*0
Maximum	0,4%	(= 'Safety S2 P3 HSR&Common rail'!C23*1
Alpha	2	
Beta	3	

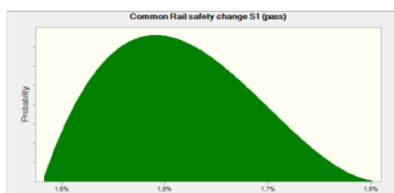


Assumption: Common Rail safety change S1 (pass)

Cell: H33

Beta distribution with parameters:

Minimum	1,5%	(= 'Safety S2 P3 HSR&Common rail'!C22*0
Maximum	1,8%	(= 'Safety S2 P3 HSR&Common rail'!C22*1
Alpha	2	
Beta	3	

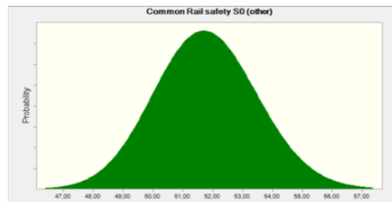


Assumption: Common Rail safety S0 (other)

Cell: K23

Lognormal distribution with parameters:

Location	0,00	
Mean	51,79	(='Safety S2 P3 HSR&Common rail'!C21)
Std. Dev.	1,72	(=K23*0,0333)

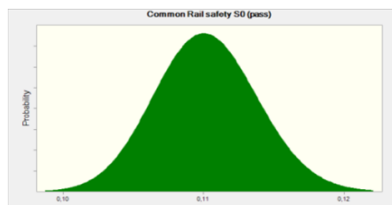


Assumption: Common Rail safety S0 (pass)

Cell: E23

Lognormal distribution with parameters:

Location	0,00	
Mean	0,11	(='Safety S2 P3 HSR&Common rail'!C20)
Std. Dev.	0,00	(=E23*0,03333)

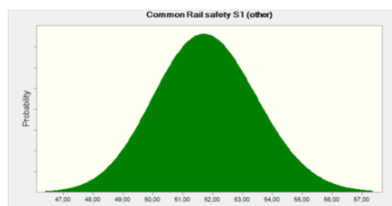


Assumption: Common Rail safety S1 (other)

Cell: K33

Lognormal distribution with parameters:

Location	0,00	
Mean	51,79	(='Safety S2 P3 HSR&Common rail'!C21)
Std. Dev.	1,72	(=K33*0,0333)



Assumption: Common Rail safety S1 (pass)

Cell: E33

Lognormal distribution with parameters:

Location	0,00	
Mean	0,11	(='Safety S2 P3 HSR&Common rail'!C20)
Std. Dev.	0,00	(=E33*0,03333)

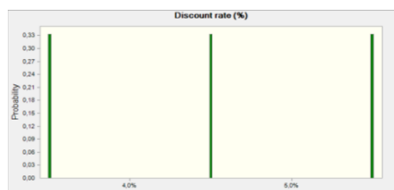


Assumption: Discount rate (%)

Cell: F72

Custom distribution with parameters:

Value	Probability
3,5%	0,33
4,5%	0,33
5,5%	0,33

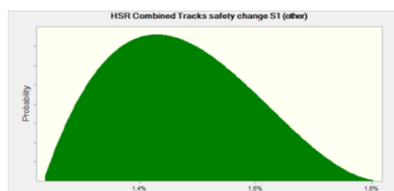


Assumption: HSR Combined Tracks safety change S1 (other)

Cell: N35

Beta distribution with parameters:

Minimum	1,3%	(='Safety S2 P3 HSR&Common rail'!C38*0)
Maximum	1,6%	(='Safety S2 P3 HSR&Common rail'!C38*1)
Alpha	2	
Beta	3	

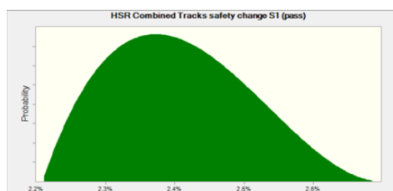


Assumption: HSR Combined Tracks safety change S1 (pass)

Cell: H35

Beta distribution with parameters:

Minimum	2,2%	(='Safety S2 P3 HSR&Common rail'!C35*0
Maximum	2,7%	(='Safety S2 P3 HSR&Common rail'!C35*1
Alpha	2	
Beta	3	

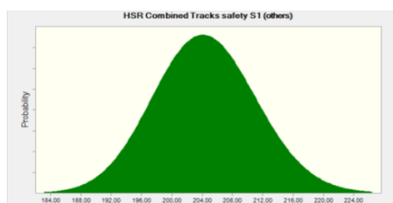


Assumption: HSR Combined Tracks safety S1 (others)

Cell: K35

Lognormal distribution with parameters:

Location	0,00	
Mean	204,42	(='Safety S2 P3 HSR&Common rail'!C32)
Std. Dev.	6,81	(=K35*0,0333)

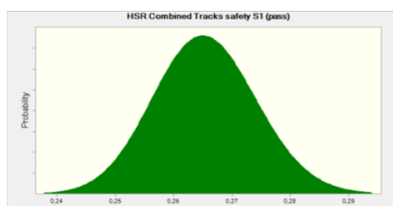


Assumption: HSR Combined Tracks safety S1 (pass)

Cell: E35

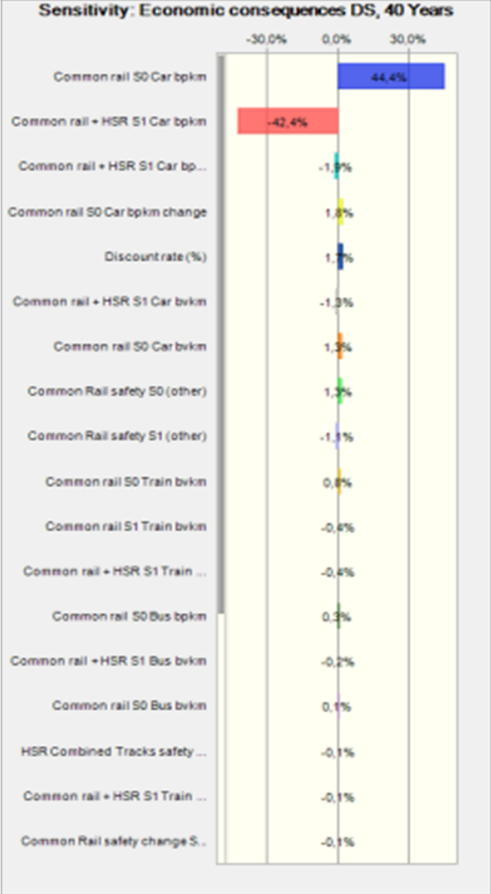
Lognormal distribution with parameters:

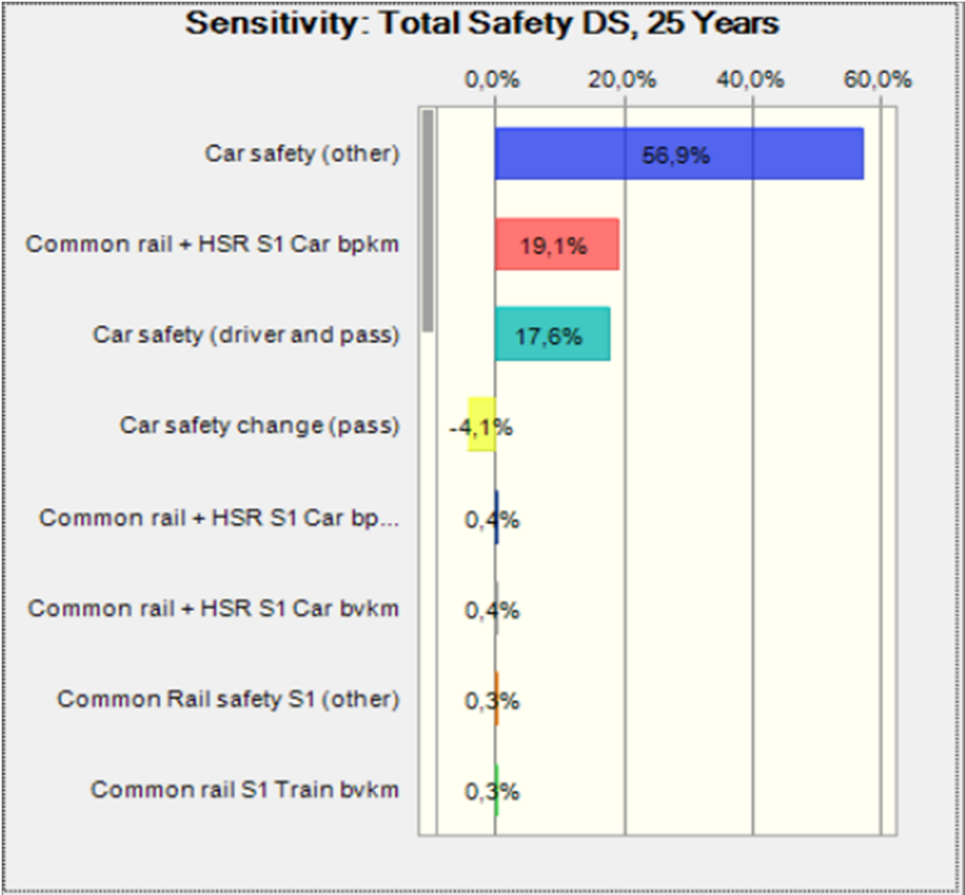
Location	0,00	
Mean	0,27	(='Safety S2 P3 HSR&Common rail'!C31)
Std. Dev.	0,01	(=E35*0,03333)

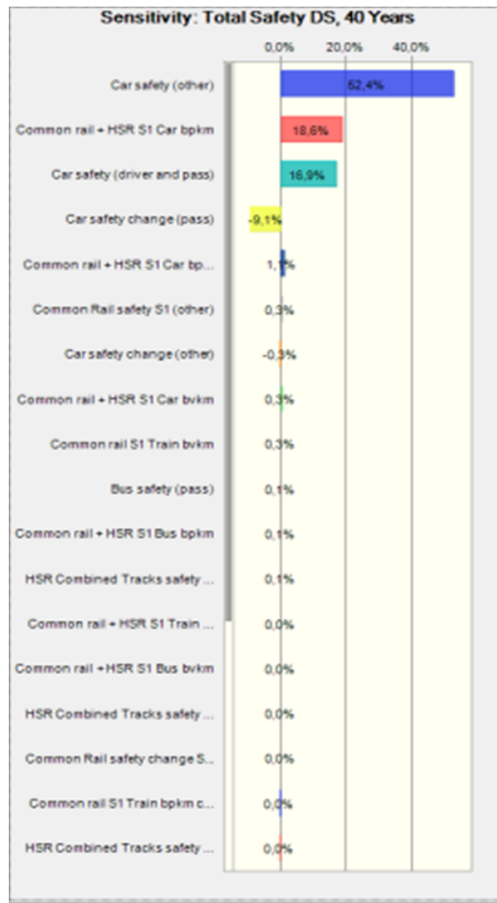


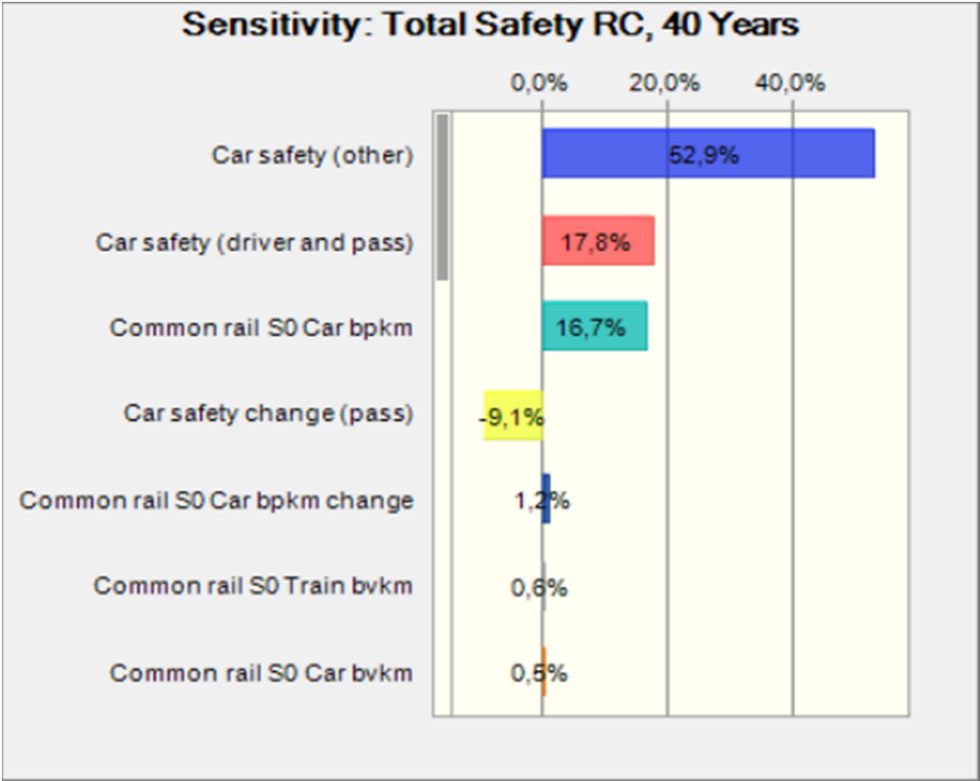
End of Assumptions

Sensitivity Charts









End of Sensitivity Charts

Crystal Ball Report - Custom

Simulation started on 2012-01-12 at 18:36

Simulation stopped on 2012-01-12 at 18:38

Run preferences:

Number of trials run	10 000
Monte Carlo	
Random seed	

Run statistics:

Total running time (sec)	79,52
Trials/second (average)	126
Random numbers per sec	6 288

Crystal Ball data:

Assumptions	50
Correlations	0
Correlated groups	0
Decision variables	0
Forecasts	15

Forecasts

Worksheet: [S3_Model_Oslo-Stavanger_S2P_120112.xls]Inputs and results

Forecast: Economic consequences DS, 1 Years

Cell: T117

Summary:

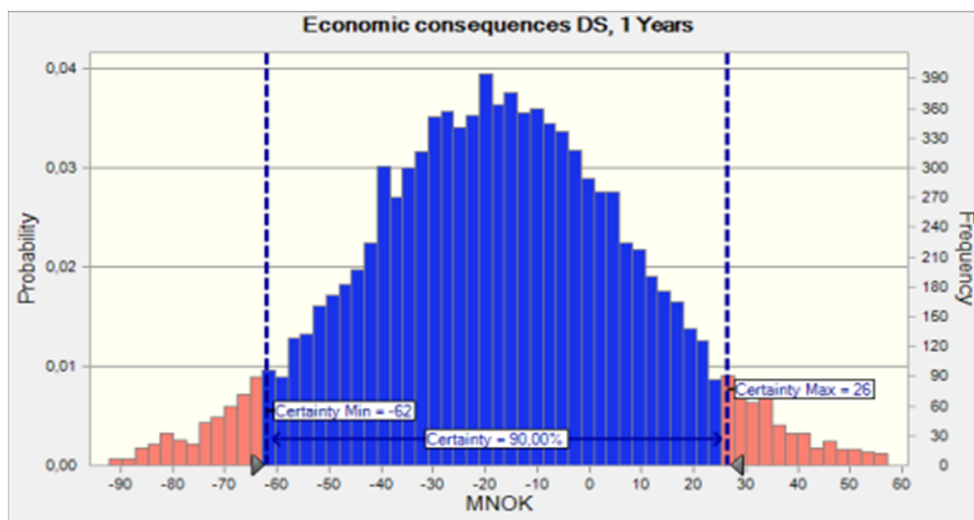
Certainty level is 90,00%

Certainty range is from -62 to 26

Entire range is from -119 to 84

Base case is -18

After 10 000 trials, the std. error of the mean is 0



Forecast: Economic consequences DS, 1 Years (cont'd)

Cell: T117

Statistics:	Forecast values
Trials	10 000
Base Case	-18
Mean	-18
Median	-18
Mode	---
Standard Deviation	27
Variance	710
Skewness	0,0234
Kurtosis	3,06
Coeff. of Variability	-1,52
Minimum	-119
Maximum	84
Range Width	203
Mean Std. Error	0

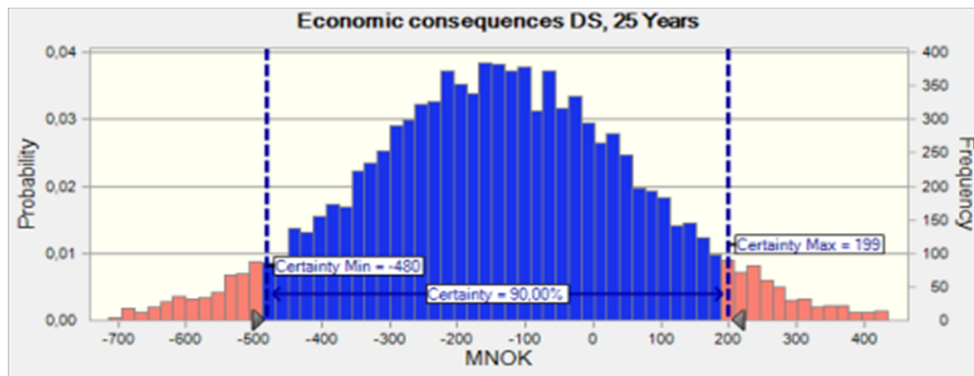
Percentiles:	Forecast values
0%	-119
10%	-52
20%	-40
30%	-31
40%	-24
50%	-18
60%	-11
70%	-4
80%	5
90%	16
100%	84

Forecast: Economic consequences DS, 25 Years

Cell: W117

Summary:

- Certainty level is 90,00%
- Certainty range is from -480 to 199
- Entire range is from -954 to 606
- Base case is -142
- After 10 000 trials, the std. error of the mean is 2



Statistics:	Forecast values
Trials	10 000
Base Case	-142
Mean	-140
Median	-140
Mode	---
Standard Deviation	205
Variance	41 940
Skewness	0,0146
Kurtosis	3,06
Coeff. of Variability	-1,47
Minimum	-954
Maximum	606
Range Width	1 560
Mean Std. Error	2

Forecast: Economic consequences DS, 25 Years (cont'd)

Cell: W117

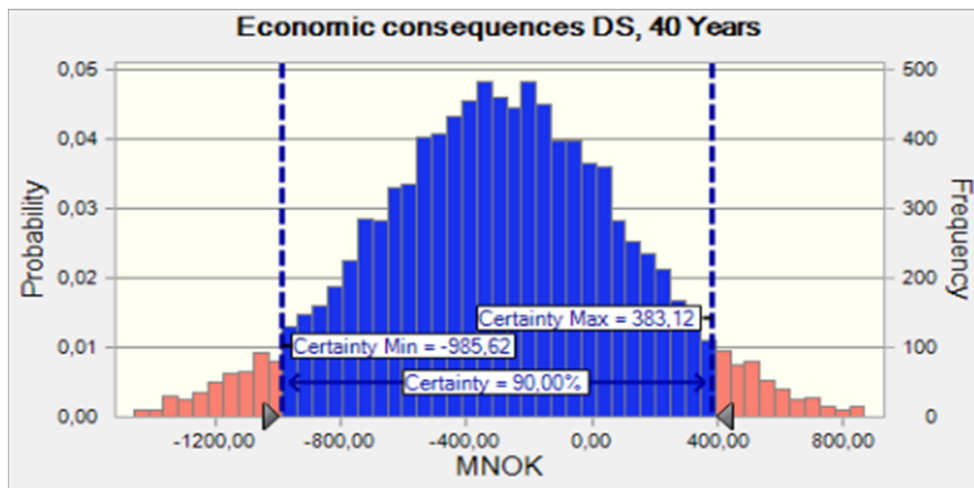
Percentiles:	Forecast values
0%	-954
10%	-401
20%	-308
30%	-245
40%	-192
50%	-140
60%	-89
70%	-33
80%	30
90%	120
100%	606

Forecast: Economic consequences DS, 40 Years

Cell: Z117

Summary:

Certainty level is 90,00%
 Certainty range is from -985,62 to 383,12
 Entire range is from -2076,41 to 1246,27
 Base case is -300,03
 After 10 000 trials, the std. error of the mean is 4,16



Statistics:	Forecast values
Trials	10 000
Base Case	-300,03
Mean	-297,36
Median	-295,78
Mode	---
Standard Deviation	415,58
Variance	172708,89
Skewness	-0,0333
Kurtosis	3,15
Coeff. of Variability	-1,40
Minimum	-2076,41
Maximum	1246,27
Range Width	3322,68
Mean Std. Error	4,16

Forecast: Economic consequences DS, 40 Years (cont'd)

Cell: Z117

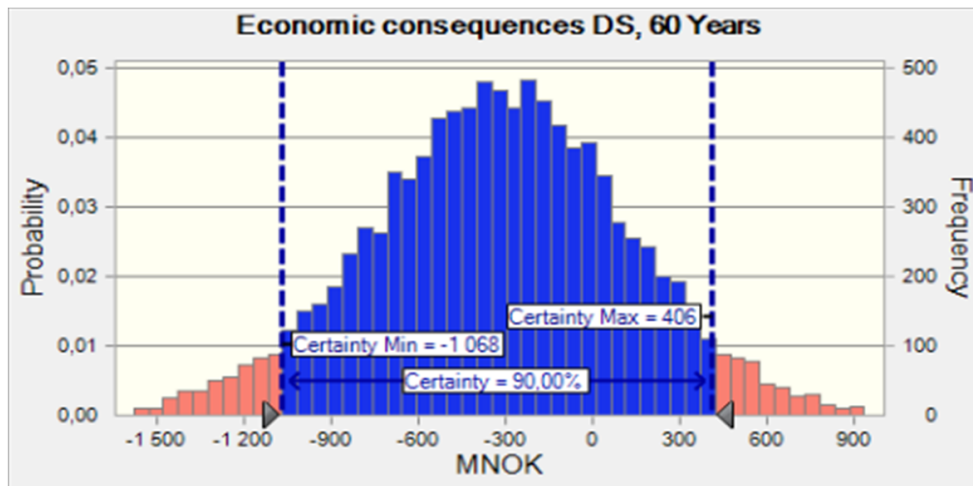
Percentiles:	Forecast values
0%	-2076,41
10%	-828,82
20%	-639,87
30%	-507,70
40%	-397,29
50%	-295,85
60%	-193,04
70%	-82,41
80%	44,12
90%	228,14
100%	1246,27

Forecast: Economic consequences DS, 60 Years

Cell: AD117

Summary:

- Certainty level is 90,00%
- Certainty range is from -1 068 to 406
- Entire range is from -2 275 to 1 375
- Base case is -324
- After 10 000 trials, the std. error of the mean is 4



Statistics:	Forecast values
Trials	10 000
Base Case	-324
Mean	-323
Median	-320
Mode	---
Standard Deviation	449
Variance	201 165
Skewness	-0,0552
Kurtosis	3,20
Coeff. of Variability	-1,39
Minimum	-2 275
Maximum	1 375
Range Width	3 650
Mean Std. Error	4

Forecast: Economic consequences DS, 60 Years (cont'd)

Cell: AD117

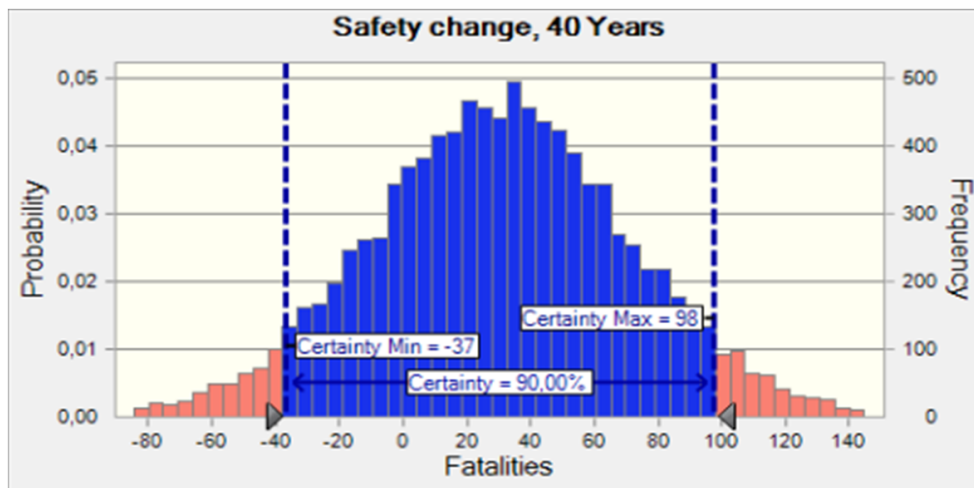
Percentiles:	Forecast values
0%	-2 275
10%	-894
20%	-691
30%	-546
40%	-428
50%	-320
60%	-211
70%	-91
80%	45
90%	242
100%	1 375

Forecast: Safety change, 40 Years

Cell: Z126

Summary:

Certainty level is 90,00%
 Certainty range is from -37 to 98
 Entire range is from -129 to 181
 Base case is 31
 After 10 000 trials, the std. error of the mean is 0



Statistics:	Forecast values
Trials	10 000
Base Case	31
Mean	30
Median	30
Mode	---
Standard Deviation	41
Variance	1 677
Skewness	-0,0154
Kurtosis	3,07
Coeff. of Variability	1,36
Minimum	-129
Maximum	181
Range Width	310
Mean Std. Error	0

Forecast: Safety change, 40 Years (cont'd)

Cell: Z126

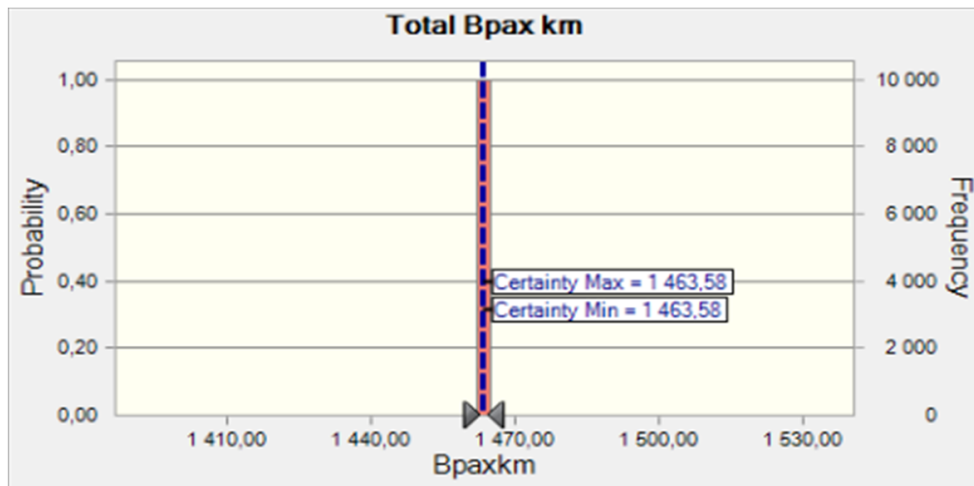
Percentiles:	Forecast values
0%	-129
10%	-22
20%	-4
30%	9
40%	20
50%	30
60%	40
70%	51
80%	64
90%	83
100%	181

Forecast: Total Bpax km

Cell: Y138

Summary:

Certainty level is 90,00%
 Certainty range is from 1 463,58 to 1 463,58
 Entire range is from 1 463,58 to 1 463,58
 Base case is 1 463,58
 After 10 000 trials, the std. error of the mean is 0,00



Statistics:	Forecast values
Trials	10 000
Base Case	1 463,58
Mean	1 463,58
Median	1 463,58
Mode	1 463,58
Standard Deviation	0,00
Variance	0,00
Skewness	---
Kurtosis	---
Coeff. of Variability	0,00
Minimum	1 463,58
Maximum	1 463,58
Range Width	0,00
Mean Std. Error	0,00

Forecast: Total Bpax km (cont'd)

Cell: Y138

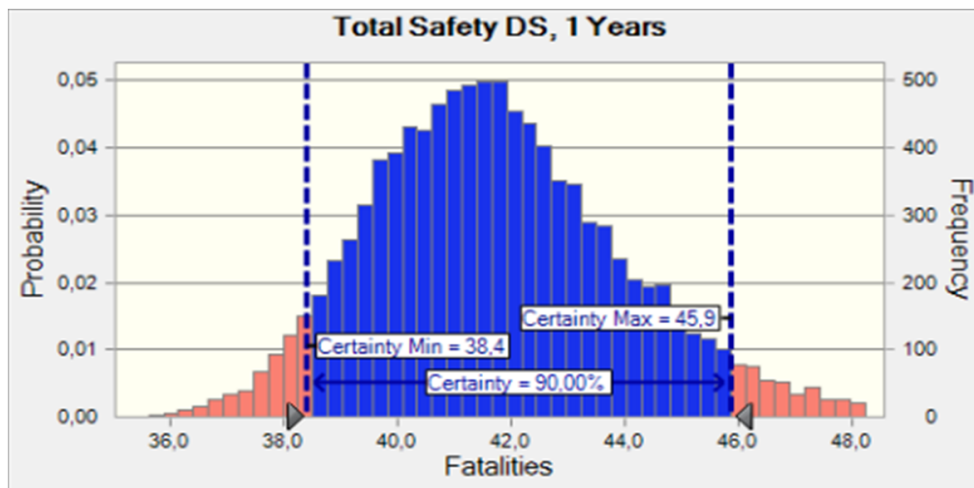
Percentiles:	Forecast values
0%	1 463,58
10%	1 463,58
20%	1 463,58
30%	1 463,58
40%	1 463,58
50%	1 463,58
60%	1 463,58
70%	1 463,58
80%	1 463,58
90%	1 463,58
100%	1 463,58

Forecast: Total Safety DS, 1 Years

Cell: T108

Summary:

Certainty level is 90,00%
 Certainty range is from 38,4 to 45,9
 Entire range is from 34,4 to 54,1
 Base case is 41,8
 After 10 000 trials, the std. error of the mean is 0,0



Statistics:	Forecast values
Trials	10 000
Base Case	41,8
Mean	41,8
Median	41,6
Mode	---
Standard Deviation	2,3
Variance	5,3
Skewness	0,5828
Kurtosis	3,75
Coeff. of Variability	0,0550
Minimum	34,4
Maximum	54,1
Range Width	19,7
Mean Std. Error	0,0

Forecast: Total Safety DS, 1 Years (cont'd)

Cell: T108

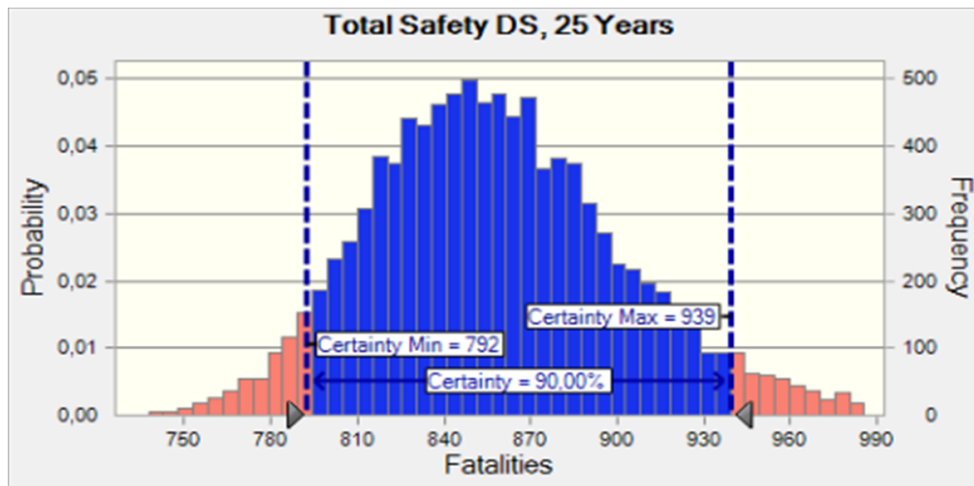
Percentiles:	Forecast values
0%	34,4
10%	39,1
20%	39,9
30%	40,5
40%	41,1
50%	41,6
60%	42,1
70%	42,8
80%	43,6
90%	44,8
100%	54,1

Forecast: Total Safety DS, 25 Years

Cell: W108

Summary:

Certainty level is 90,00%
 Certainty range is from 792 to 939
 Entire range is from 709 to 1 099
 Base case is 859
 After 10 000 trials, the std. error of the mean is 0



Statistics:	Forecast values
Trials	10 000
Base Case	859
Mean	859
Median	855
Mode	---
Standard Deviation	45
Variance	2 042
Skewness	0,5459
Kurtosis	3,71
Coeff. of Variability	0,0526
Minimum	709
Maximum	1 099
Range Width	390
Mean Std. Error	0

Forecast: Total Safety DS, 25 Years (cont'd)

Cell: W108

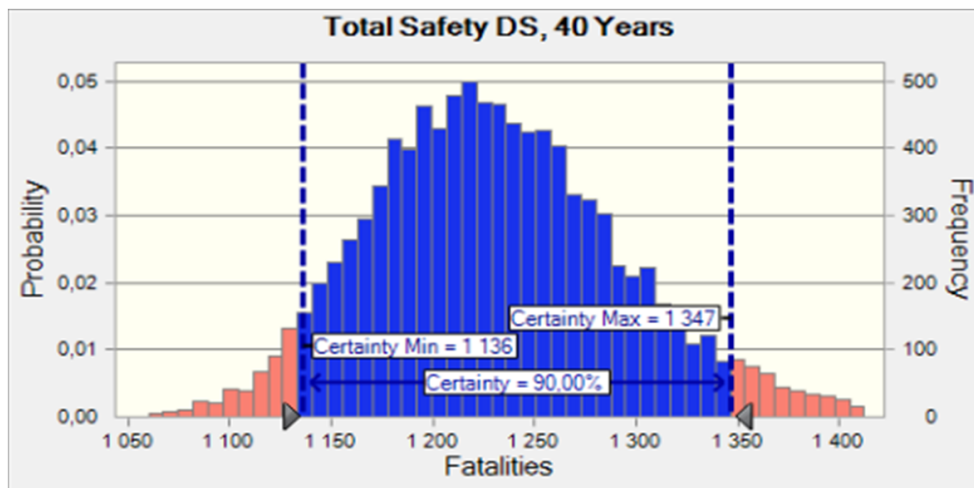
Percentiles:	Forecast values
0%	709
10%	805
20%	821
30%	834
40%	845
50%	855
60%	867
70%	879
80%	894
90%	918
100%	1 099

Forecast: Total Safety DS, 40 Years

Cell: Z108

Summary:

Certainty level is 90,00%
 Certainty range is from 1 136 to 1 347
 Entire range is from 1 020 to 1 565
 Base case is 1 232
 After 10 000 trials, the std. error of the mean is 1



Statistics:	Forecast values
Trials	10 000
Base Case	1 232
Mean	1 233
Median	1 228
Mode	---
Standard Deviation	64
Variance	4 118
Skewness	0,5059
Kurtosis	3,64
Coeff. of Variability	0,0521
Minimum	1 020
Maximum	1 565
Range Width	545
Mean Std. Error	1

Forecast: Total Safety DS, 40 Years (cont'd)

Cell: Z108

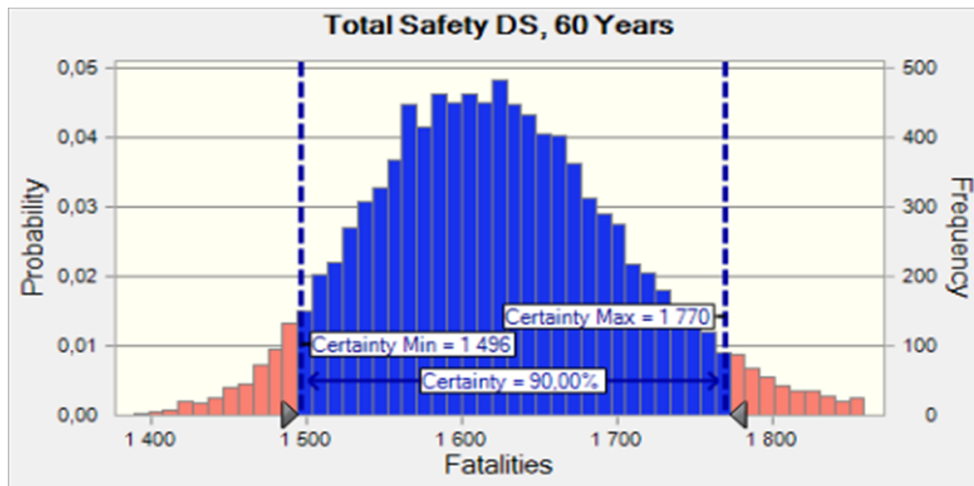
Percentiles:	Forecast values
0%	1 020
10%	1 155
20%	1 179
30%	1 196
40%	1 212
50%	1 228
60%	1 244
70%	1 261
80%	1 283
90%	1 316
100%	1 565

Forecast: Total Safety DS, 60 Years

Cell: AD108

Summary:

Certainty level is 90,00%
 Certainty range is from 1 496 to 1 770
 Entire range is from 1 349 to 2 044
 Base case is 1 623
 After 10 000 trials, the std. error of the mean is 1



Statistics:	Forecast values
Trials	10 000
Base Case	1 623
Mean	1 624
Median	1 619
Mode	---
Standard Deviation	84
Variance	7 088
Skewness	0,4495
Kurtosis	3,52
Coeff. of Variability	0,0518
Minimum	1 349
Maximum	2 044
Range Width	694
Mean Std. Error	1

Forecast: Total Safety DS, 60 Years (cont'd)

Cell: AD108

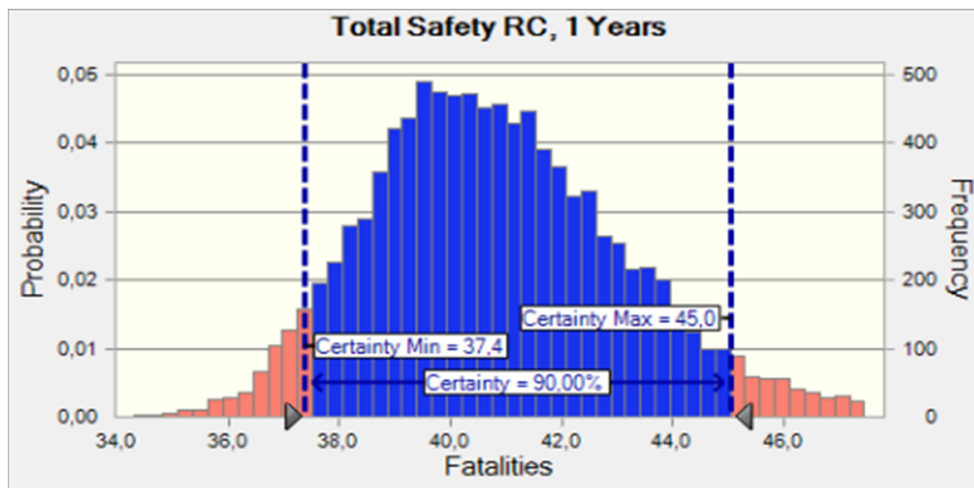
Percentiles:	Forecast values
0%	1 349
10%	1 521
20%	1 553
30%	1 576
40%	1 597
50%	1 619
60%	1 639
70%	1 663
80%	1 691
90%	1 733
100%	2 044

Forecast: Total Safety RC, 1 Years

Cell: S108

Summary:

Certainty level is 90,00%
 Certainty range is from 37,4 to 45,0
 Entire range is from 34,1 to 53,8
 Base case is 40,9
 After 10 000 trials, the std. error of the mean is 0,0



Statistics:	Forecast values
Trials	10 000
Base Case	40,9
Mean	40,9
Median	40,7
Mode	---
Standard Deviation	2,3
Variance	5,5
Skewness	0,5838
Kurtosis	3,71
Coeff. of Variability	0,0575
Minimum	34,1
Maximum	53,8
Range Width	19,7
Mean Std. Error	0,0

Forecast: Total Safety RC, 1 Years (cont'd)

Cell: S108

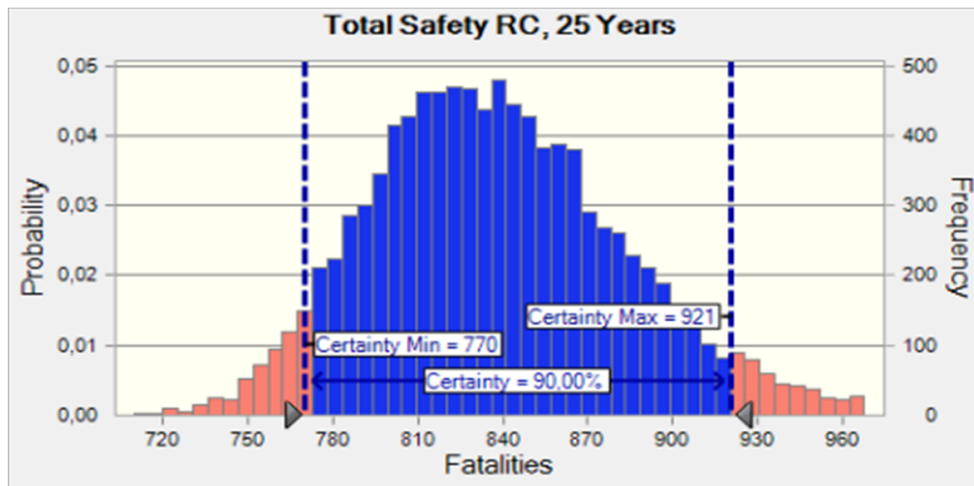
Percentiles:	Forecast values
0%	34,1
10%	38,1
20%	38,9
30%	39,5
40%	40,1
50%	40,7
60%	41,3
70%	41,9
80%	42,7
90%	43,9
100%	53,8

Forecast: Total Safety RC, 25 Years

Cell: V108

Summary:

Certainty level is 90,00%
 Certainty range is from 770 to 921
 Entire range is from 706 to 1 087
 Base case is 838
 After 10 000 trials, the std. error of the mean is 0



Statistics:	Forecast values
Trials	10 000
Base Case	838
Mean	839
Median	835
Mode	---
Standard Deviation	46
Variance	2 128
Skewness	0,5436
Kurtosis	3,64
Coeff. of Variability	0,0550
Minimum	706
Maximum	1 087
Range Width	380
Mean Std. Error	0

Forecast: Total Safety RC, 25 Years (cont'd)

Cell: V108

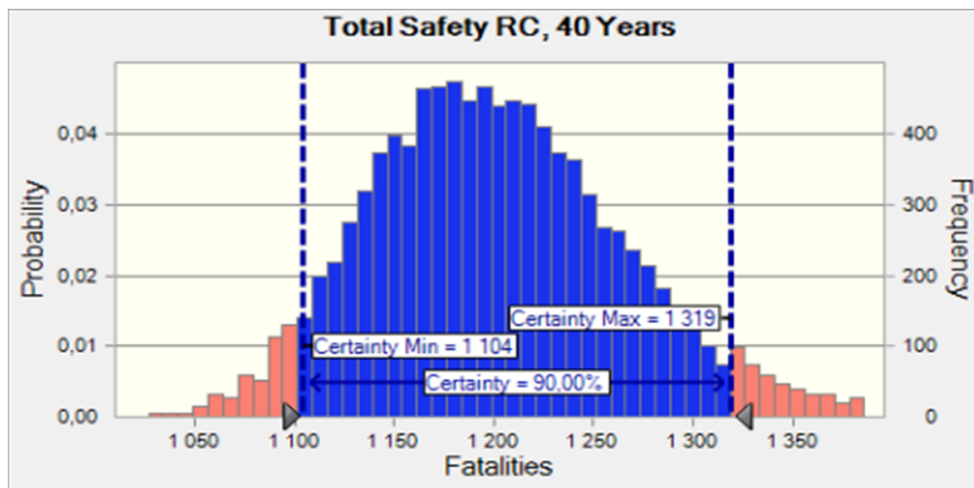
Percentiles:	Forecast values
0%	706
10%	783
20%	800
30%	812
40%	823
50%	835
60%	846
70%	860
80%	875
90%	898
100%	1 087

Forecast: Total Safety RC, 40 Years

Cell: Y108

Summary:

Certainty level is 90,00%
 Certainty range is from 1 104 to 1 319
 Entire range is from 1 014 to 1 544
 Base case is 1 202
 After 10 000 trials, the std. error of the mean is 1



Statistics:	Forecast values
Trials	10 000
Base Case	1 202
Mean	1 203
Median	1 198
Mode	---
Standard Deviation	65
Variance	4 284
Skewness	0,5029
Kurtosis	3,57
Coeff. of Variability	0,0544
Minimum	1 014
Maximum	1 544
Range Width	530
Mean Std. Error	1

Forecast: Total Safety RC, 40 Years (cont'd)

Cell: Y108

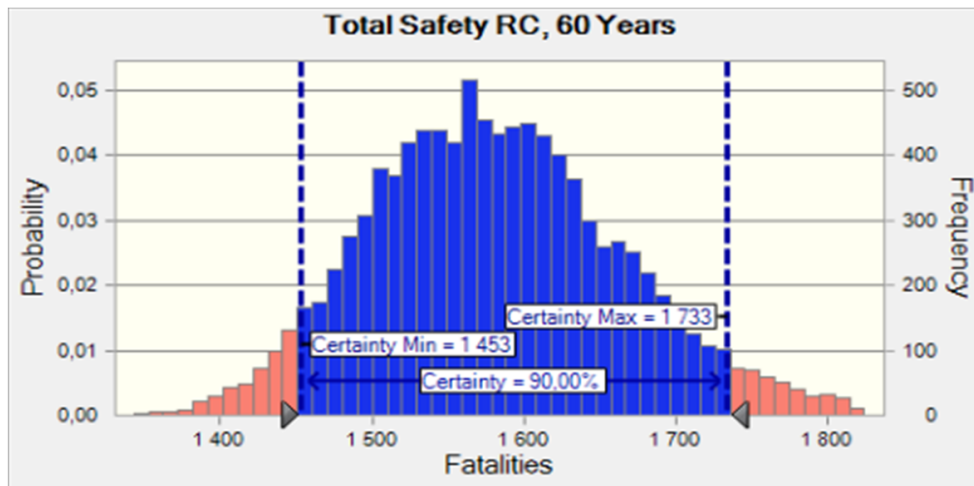
Percentiles:	Forecast values
0%	1 014
10%	1 123
20%	1 147
30%	1 165
40%	1 181
50%	1 198
60%	1 214
70%	1 232
80%	1 254
90%	1 287
100%	1 544

Forecast: Total Safety RC, 60 Years

Cell: AC108

Summary:

Certainty level is 90,00%
 Certainty range is from 1 453 to 1 733
 Entire range is from 1 329 to 2 009
 Base case is 1 582
 After 10 000 trials, the std. error of the mean is 1



Statistics:	Forecast values
Trials	10 000
Base Case	1 582
Mean	1 583
Median	1 578
Mode	---
Standard Deviation	86
Variance	7 356
Skewness	0,4463
Kurtosis	3,45
Coeff. of Variability	0,0542
Minimum	1 329
Maximum	2 009
Range Width	680
Mean Std. Error	1

Forecast: Total Safety RC, 60 Years (cont'd)

Cell: AC108

Percentiles:	Forecast values
0%	1 329
10%	1 479
20%	1 510
30%	1 534
40%	1 557
50%	1 578
60%	1 600
70%	1 623
80%	1 653
90%	1 694
100%	2 009

End of Forecasts

Assumptions

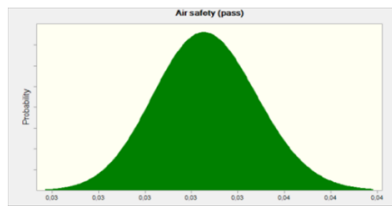
Worksheet: [S3_Model_Oslo-Stavanger_S2P_120112.xls]Inputs and results

Assumption: Air safety (pass)

Cell: E15

Lognormal distribution with parameters:

Location	0,00	
Mean	0,03	(='Safety level & changes'!E14)
Std. Dev.	0,00	(=E15*0,03333)

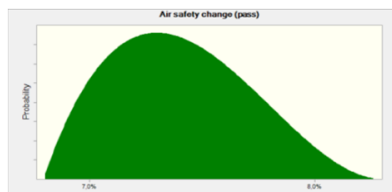


Assumption: Air safety change (pass)

Cell: H15

Beta distribution with parameters:

Minimum	6,8%	(='Safety level & changes'!H14*0,9)
Maximum	8,3%	(='Safety level & changes'!H14*1,1)
Alpha	2	
Beta	3	



Assumption: Bus safety (other)

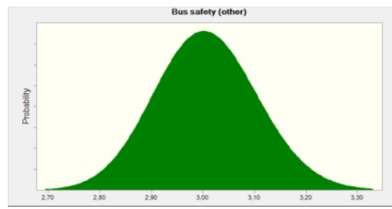
Cell: K15

Lognormal distribution with parameters:

Location	0,00	
Mean	3,01	(='Safety level & changes'!K14)
Std. Dev.	0,10	(=K15*0,0333)

Assumption: Bus safety (other) (cont'd)

Cell: K15

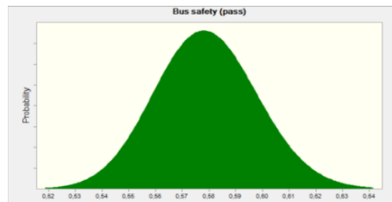


Assumption: Bus safety (pass)

Cell: E13

Lognormal distribution with parameters:

Location	0,00	
Mean	0,58	(='Safety level & changes'!E12)
Std. Dev.	0,02	(=E13*0,03333)

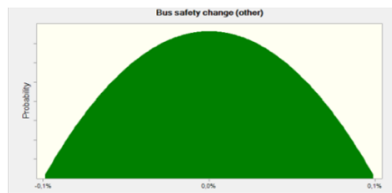


Assumption: Bus safety change (other)

Cell: N15

Beta distribution with parameters:

Minimum	-0,1%	(=-0,001+'Safety level & changes'!N14*0,9)
Maximum	0,1%	(=0,001+'Safety level & changes'!N14*1,1)
Alpha	2	
Beta	2	

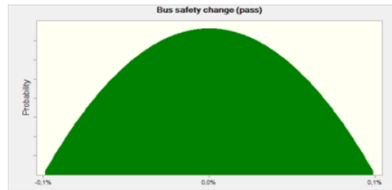


Assumption: Bus safety change (pass)

Cell: H13

Beta distribution with parameters:

Minimum	-0,1%	(=-0,001+'Safety level & changes'!H12*0,9)
Maximum	0,1%	(=0,001+'Safety level & changes'!H12*1,1)
Alpha	2	
Beta	2	

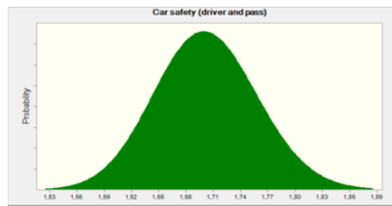


Assumption: Car safety (driver and pass)

Cell: E11

Lognormal distribution with parameters:

Location	0,00	
Mean	1,70	(='Safety level & changes'!E10)
Std. Dev.	0,06	(=E11*0,03333)

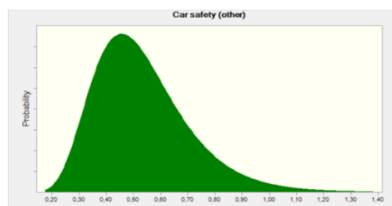


Assumption: Car safety (other)

Cell: K11

Lognormal distribution with parameters:

Location	0,00	
Mean	0,53	(='Safety level & changes'!K10)
Std. Dev.	0,18	(=K11*0,3333)

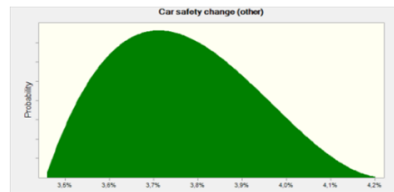


Assumption: Car safety change (other)

Cell: N11

Beta distribution with parameters:

Minimum	3,5%	(='Safety level & changes'!N10*0,9)
Maximum	4,2%	(='Safety level & changes'!N10*1,1)
Alpha	2	
Beta	3	

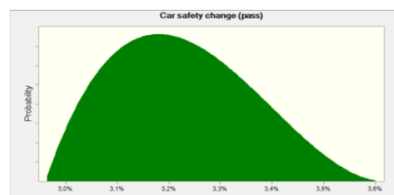


Assumption: Car safety change (pass)

Cell: H11

Beta distribution with parameters:

Minimum	3,0%	(='Safety level & changes'!H10*0,9)
Maximum	3,6%	(='Safety level & changes'!H10*1,1)
Alpha	2	
Beta	3	

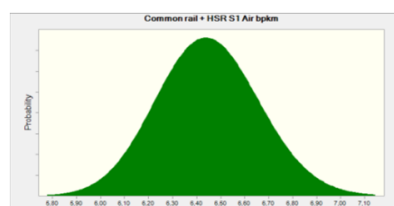


Assumption: Common rail + HSR S1 Air bpkm

Cell: K48

Lognormal distribution with parameters:

Location	0,00	
Mean	6,45	(='Pax&Vehicle km+change'!J12/10000000)
Std. Dev.	0,21	(=K48*0,0333)

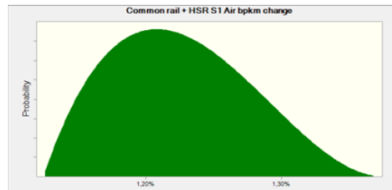


Assumption: Common rail + HSR S1 Air bpkm change

Cell: K61

Beta distribution with parameters:

Minimum	1,12%	(='Pax&Vehicle km+change'!AF7*0,9)
Maximum	1,37%	(='Pax&Vehicle km+change'!AF7*1,1)
Alpha	2	
Beta	3	

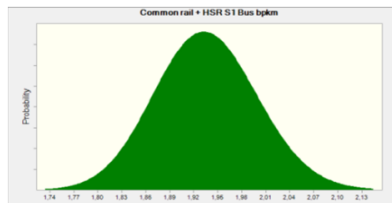


Assumption: Common rail + HSR S1 Bus bpkm

Cell: I48

Lognormal distribution with parameters:

Location	0,00	
Mean	1,94	(='Pax&Vehicle km+change'!J13/10000000)
Std. Dev.	0,06	(=I48*0,0333)

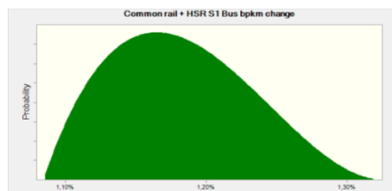


Assumption: Common rail + HSR S1 Bus bpkm change

Cell: I61

Beta distribution with parameters:

Minimum	1,08%	(='Pax&Vehicle km+change'!AK7*0,9)
Maximum	1,33%	(='Pax&Vehicle km+change'!AK7*1,1)
Alpha	2	
Beta	3	

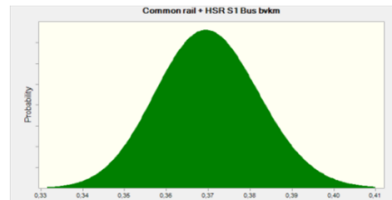


Assumption: Common rail + HSR S1 Bus bvk

Cell: J48

Lognormal distribution with parameters:

Location	0,00	
Mean	0,37	(='Pax&Vehicle km+change'!P13/10000000)
Std. Dev.	0,01	(=J48*0,0333)

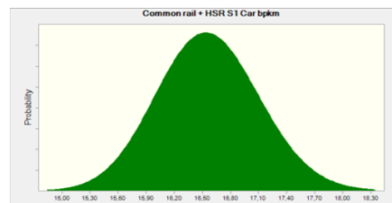


Assumption: Common rail + HSR S1 Car bpk

Cell: G48

Lognormal distribution with parameters:

Location	0,00	
Mean	16,57	(='Pax&Vehicle km+change'!J11/10000000)
Std. Dev.	0,55	(=G48*0,0333)

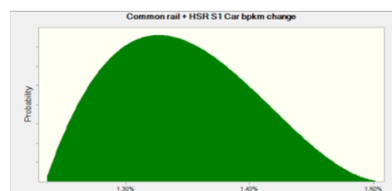


Assumption: Common rail + HSR S1 Car bpk change

Cell: G61

Beta distribution with parameters:

Minimum	1,24%	(='Pax&Vehicle km+change'!AA7*0,9)
Maximum	1,51%	(='Pax&Vehicle km+change'!AA7*1,1)
Alpha	2	
Beta	3	

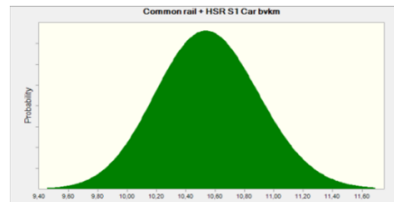


Assumption: Common rail + HSR S1 Car bvk

Cell: H48

Lognormal distribution with parameters:

Location	0,00	
Mean	10,55	(='Pax&Vehicle km+change'!P11/1000000)
Std. Dev.	0,35	(=H48*0,0333)

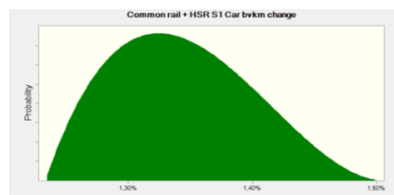


Assumption: Common rail + HSR S1 Car bvk change

Cell: H61

Beta distribution with parameters:

Minimum	1,23%	(='Pax&Vehicle km+change'!AW7*0,9)
Maximum	1,51%	(='Pax&Vehicle km+change'!AW7*1,1)
Alpha	2	
Beta	3	

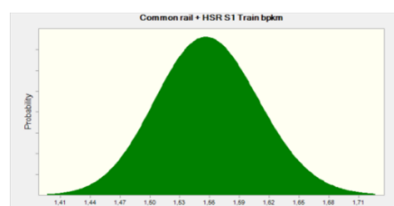


Assumption: Common rail + HSR S1 Train bpk

Cell: E48

Lognormal distribution with parameters:

Location	0,00	
Mean	1,56	(='Pax&Vehicle km+change'!J15/1000000)
Std. Dev.	0,05	(=E48*0,0333)

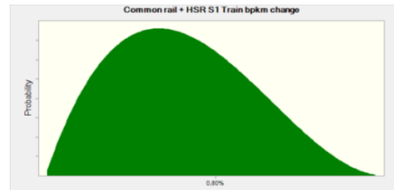


Assumption: Common rail + HSR S1 Train bpkm change

Cell: E61

Beta distribution with parameters:

Minimum	0,72%	(='Pax&Vehicle km+change'!AR7*0,9)
Maximum	0,88%	(='Pax&Vehicle km+change'!AR7*1,1)
Alpha	2	
Beta	3	

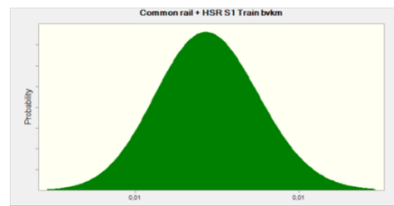


Assumption: Common rail + HSR S1 Train bvkm

Cell: F48

Lognormal distribution with parameters:

Location	0,00	
Mean	0,01	(='Pax&Vehicle km+change'!P15/10000000)
Std. Dev.	0,00	(=F48*0,0333)

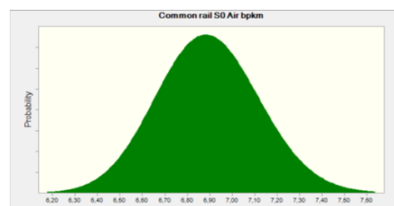


Assumption: Common rail S0 Air bpkm

Cell: K46

Lognormal distribution with parameters:

Location	0,00	
Mean	6,89	(='Pax&Vehicle km+change'!H12/10000000)
Std. Dev.	0,23	(=K46*0,0333)

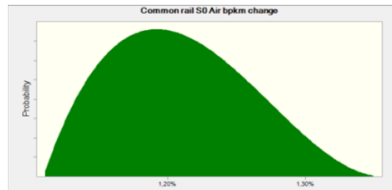


Assumption: Common rail S0 Air bpkm change

Cell: K59

Beta distribution with parameters:

Minimum	1,11%	(='Pax&Vehicle km+change'!AD7*0,9)
Maximum	1,36%	(='Pax&Vehicle km+change'!AD7*1,1)
Alpha	2	
Beta	3	

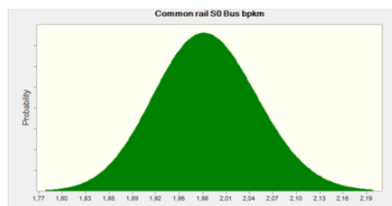


Assumption: Common rail S0 Bus bpkm

Cell: I46

Lognormal distribution with parameters:

Location	0,00	
Mean	1,98	(='Pax&Vehicle km+change'!H13/10000000)
Std. Dev.	0,07	(=I46*0,0333)

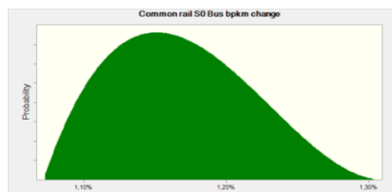


Assumption: Common rail S0 Bus bpkm change

Cell: I59

Beta distribution with parameters:

Minimum	1,07%	(='Pax&Vehicle km+change'!\$AI\$7*0,9)
Maximum	1,31%	(='Pax&Vehicle km+change'!AI7*1,1)
Alpha	2	
Beta	3	

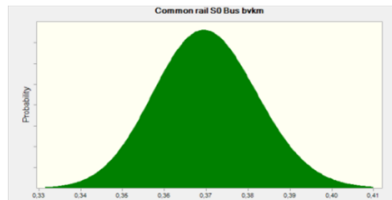


Assumption: Common rail S0 Bus bvkm

Cell: J46

Lognormal distribution with parameters:

Location	0,00	
Mean	0,37	(='Pax&Vehicle km+change'!N13/1000000)
Std. Dev.	0,01	(=J46*0,0333)

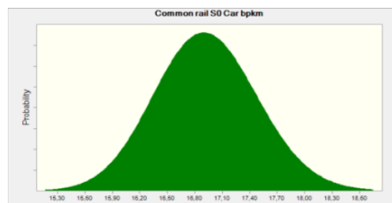


Assumption: Common rail S0 Car bpkm

Cell: G46

Lognormal distribution with parameters:

Location	0,00	
Mean	16,93	(='Pax&Vehicle km+change'!H11/1000000)
Std. Dev.	0,56	(=G46*0,0333)

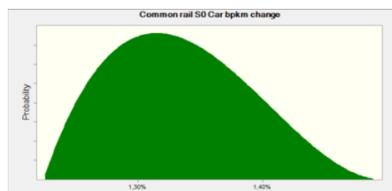


Assumption: Common rail S0 Car bpkm change

Cell: G59

Beta distribution with parameters:

Minimum	1,22%	(='Pax&Vehicle km+change'!Y7*0,9)
Maximum	1,50%	(='Pax&Vehicle km+change'!Y7*1,1)
Alpha	2	
Beta	3	

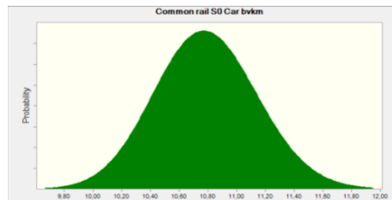


Assumption: Common rail S0 Car bvkm

Cell: H46

Lognormal distribution with parameters:

Location	0,00	
Mean	10,79	(='Pax&Vehicle km+change'!N11/1000000)
Std. Dev.	0,36	(=H46*0,0333)

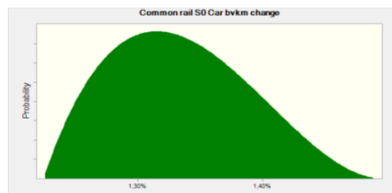


Assumption: Common rail S0 Car bvkm change

Cell: H59

Beta distribution with parameters:

Minimum	1,22%	(='Pax&Vehicle km+change'!\$AU\$7*0,9)
Maximum	1,50%	(='Pax&Vehicle km+change'!\$AU\$7*1,1)
Alpha	2	
Beta	3	

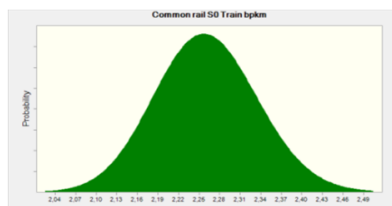


Assumption: Common rail S0 Train bpkm

Cell: E46

Lognormal distribution with parameters:

Location	0,00	
Mean	2,26	(='Pax&Vehicle km+change'!H14/1000000)
Std. Dev.	0,08	(=E46*0,0333)

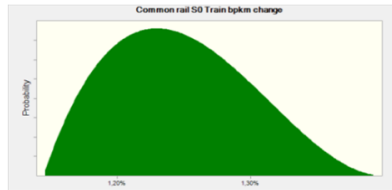


Assumption: Common rail S0 Train bpkm change

Cell: E59

Beta distribution with parameters:

Minimum	1,14%	(='Pax&Vehicle km+change'!\$AN\$7*0,9)
Maximum	1,40%	(='Pax&Vehicle km+change'!\$AN\$7*1,1)
Alpha	2	
Beta	3	

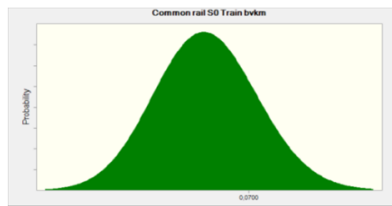


Assumption: Common rail S0 Train bvkm

Cell: F46

Lognormal distribution with parameters:

Location	0,0000	
Mean	0,0681	(='Pax&Vehicle km+change'!N14/10000000)
Std. Dev.	0,0023	(=F46*0,0333)

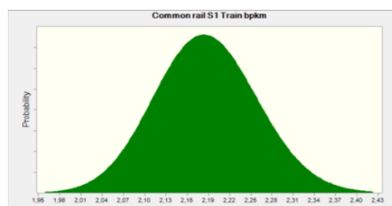


Assumption: Common rail S1 Train bpkm

Cell: E49

Lognormal distribution with parameters:

Location	0,00	
Mean	2,19	(='Pax&Vehicle km+change'!J14/10000000)
Std. Dev.	0,07	(=E49*0,0333)

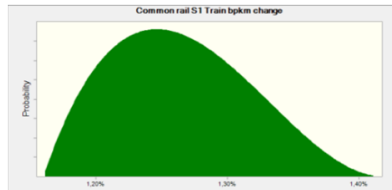


Assumption: Common rail S1 Train bpkm change

Cell: E62

Beta distribution with parameters:

Minimum	1,16%	(='Pax&Vehicle km+change'!AP7*0,9)
Maximum	1,42%	(='Pax&Vehicle km+change'!AP7*1,1)
Alpha	2	
Beta	3	

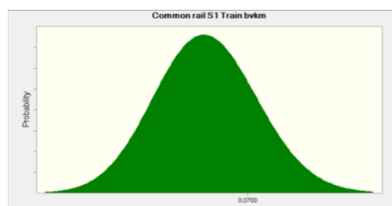


Assumption: Common rail S1 Train bvkm

Cell: F49

Lognormal distribution with parameters:

Location	0,0000	
Mean	0,0682	(='Pax&Vehicle km+change'!E52)
Std. Dev.	0,0023	(=F49*0,0333)

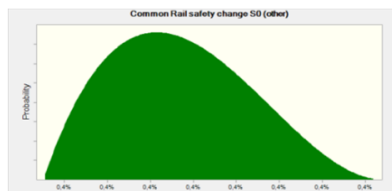


Assumption: Common Rail safety change S0 (other)

Cell: N23

Beta distribution with parameters:

Minimum	0,4%	(='-Safety S2 P3 HSR&Common rail'!C23*0
Maximum	0,4%	(='-Safety S2 P3 HSR&Common rail'!C23*1
Alpha	2	
Beta	3	

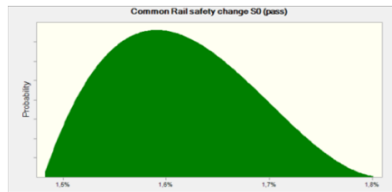


Assumption: Common Rail safety change S0 (pass)

Cell: H23

Beta distribution with parameters:

Minimum	1,5%	(='Safety S2 P3 HSR&Common rail'!C22*0
Maximum	1,8%	(='Safety S2 P3 HSR&Common rail'!C22*1
Alpha	2	
Beta	3	

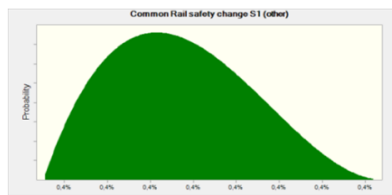


Assumption: Common Rail safety change S1 (other)

Cell: N33

Beta distribution with parameters:

Minimum	0,4%	(='Safety S2 P3 HSR&Common rail'!C23*0
Maximum	0,4%	(='Safety S2 P3 HSR&Common rail'!C23*1
Alpha	2	
Beta	3	

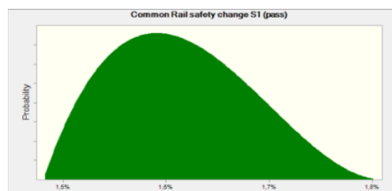


Assumption: Common Rail safety change S1 (pass)

Cell: H33

Beta distribution with parameters:

Minimum	1,5%	(='Safety S2 P3 HSR&Common rail'!C22*0
Maximum	1,8%	(='Safety S2 P3 HSR&Common rail'!C22*1
Alpha	2	
Beta	3	

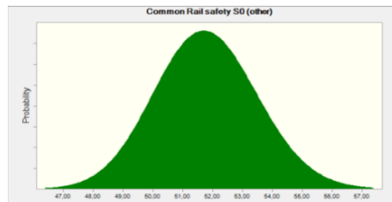


Assumption: Common Rail safety S0 (other)

Cell: K23

Lognormal distribution with parameters:

Location	0,00	
Mean	51,79	(='Safety S2 P3 HSR&Common rail'!C21)
Std. Dev.	1,72	(=K23*0,0333)



Assumption: Common Rail safety S0 (pass)

Cell: E23

Lognormal distribution with parameters:

Location	0,00	
Mean	0,11	(='Safety S2 P3 HSR&Common rail'!C20)
Std. Dev.	0,00	(=E23*0,03333)

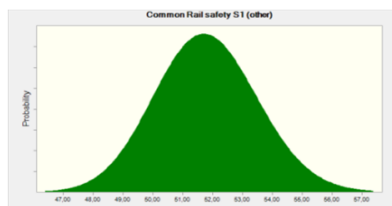


Assumption: Common Rail safety S1 (other)

Cell: K33

Lognormal distribution with parameters:

Location	0,00	
Mean	51,79	(='Safety S2 P3 HSR&Common rail'!C21)
Std. Dev.	1,72	(=K33*0,0333)

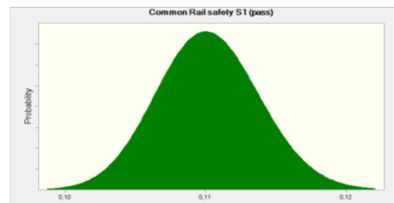


Assumption: Common Rail safety S1 (pass)

Cell: E33

Lognormal distribution with parameters:

Location	0,00	
Mean	0,11	(='Safety S2 P3 HSR&Common rail'!C20)
Std. Dev.	0,00	(=E33*0,03333)

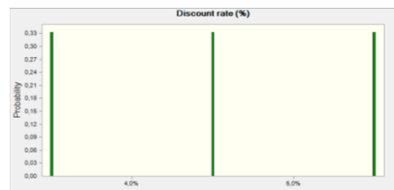


Assumption: Discount rate (%)

Cell: F72

Custom distribution with parameters:

Value	Probability
3,5%	0,33
4,5%	0,33
5,5%	0,33

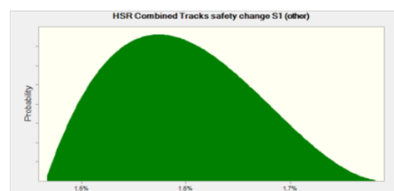


Assumption: HSR Combined Tracks safety change S1 (other)

Cell: N35

Beta distribution with parameters:

Minimum	1,5%	(='Safety S2 P3 HSR&Common rail'!C38*0
Maximum	1,8%	(='Safety S2 P3 HSR&Common rail'!C38*1
Alpha	2	
Beta	3	

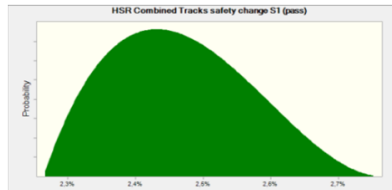


Assumption: HSR Combined Tracks safety change S1 (pass)

Cell: H35

Beta distribution with parameters:

Minimum	2,3%	(='Safety S2 P3 HSR&Common rail'!C35*0
Maximum	2,8%	(='Safety S2 P3 HSR&Common rail'!C35*1
Alpha	2	
Beta	3	

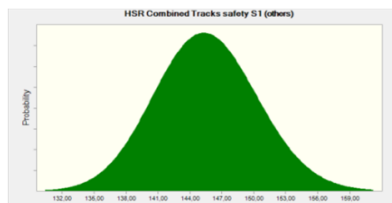


Assumption: HSR Combined Tracks safety S1 (others)

Cell: K35

Lognormal distribution with parameters:

Location	0,00	
Mean	145,54	(='Safety S2 P3 HSR&Common rail'!C32)
Std. Dev.	4,85	(=K35*0,0333)

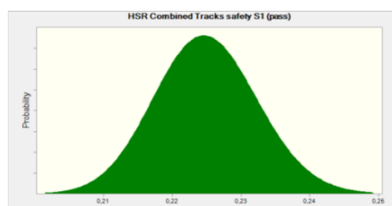


Assumption: HSR Combined Tracks safety S1 (pass)

Cell: E35

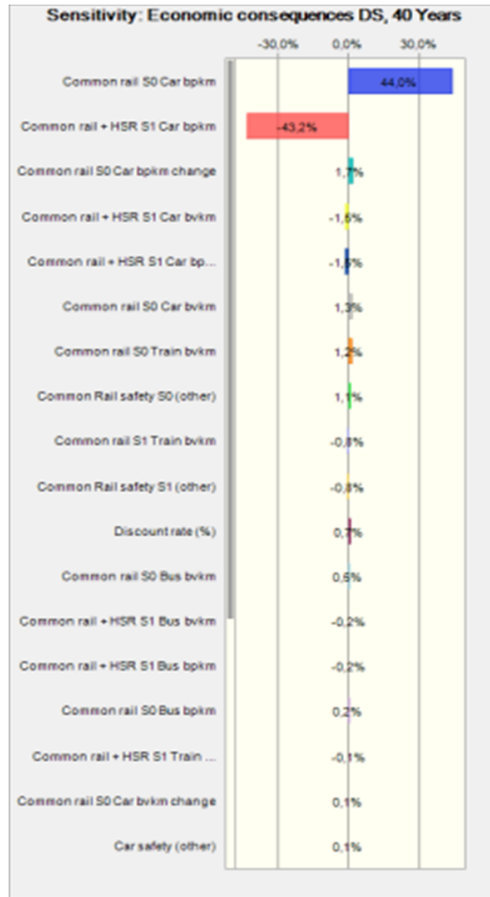
Lognormal distribution with parameters:

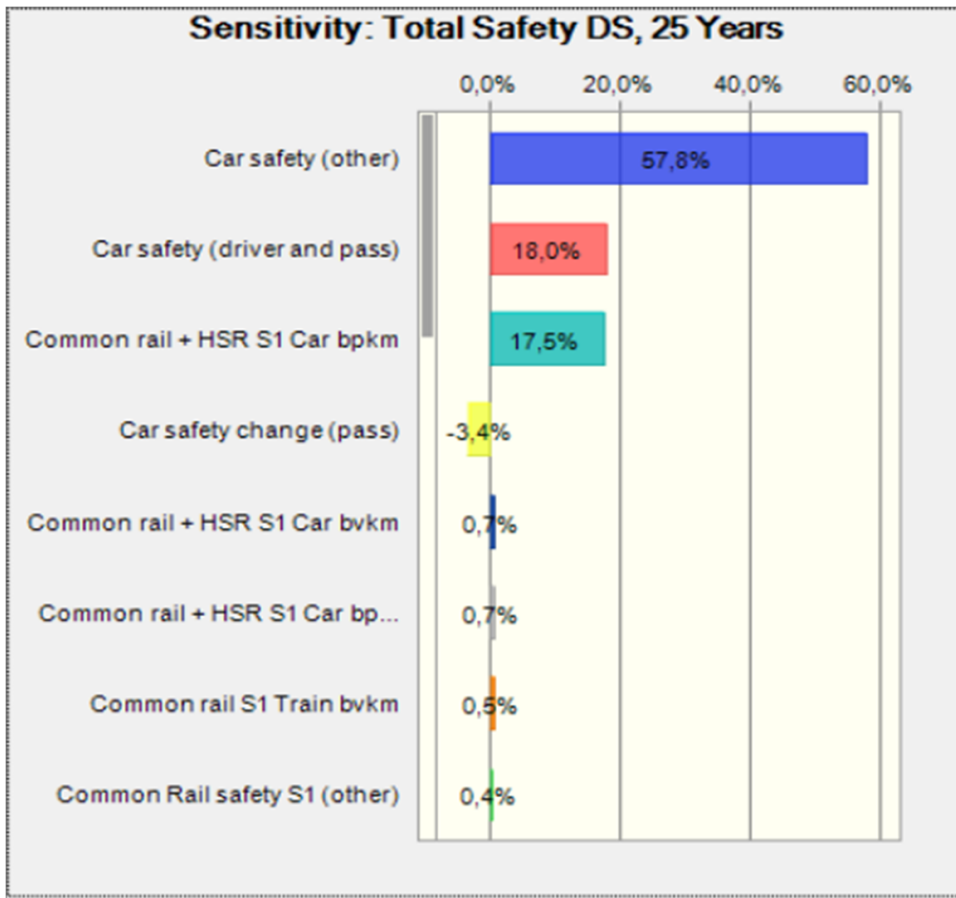
Location	0,00	
Mean	0,22	(='Safety S2 P3 HSR&Common rail'!C31)
Std. Dev.	0,01	(=E35*0,03333)

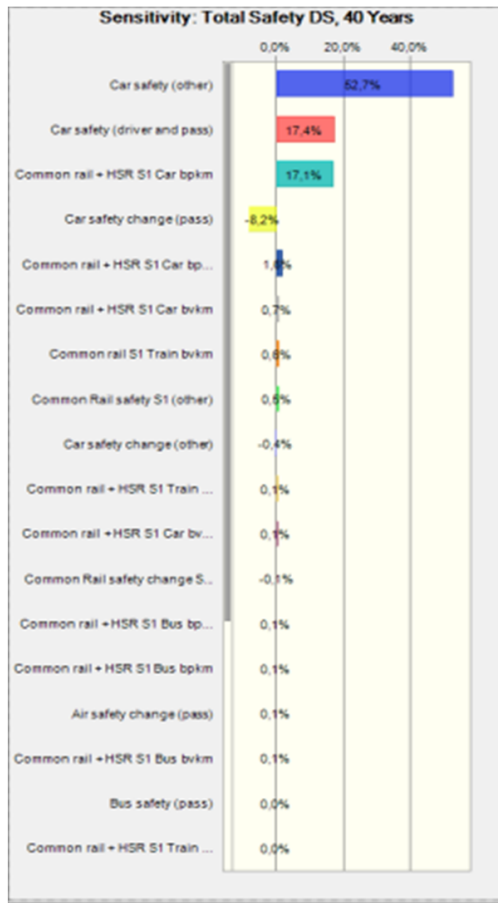


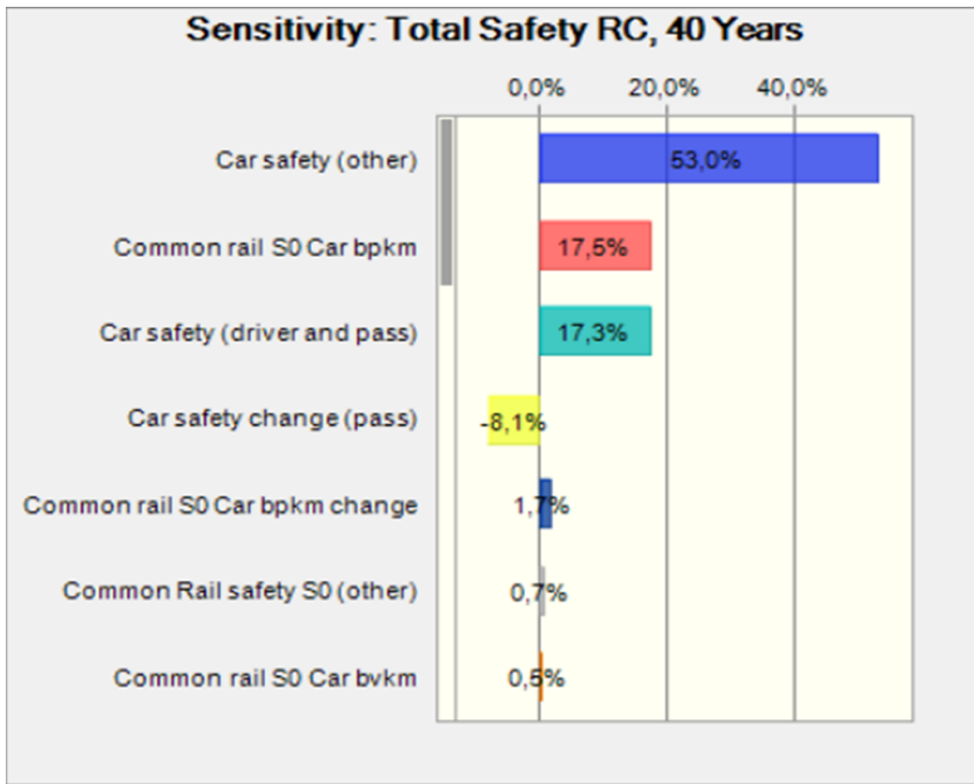
End of Assumptions

Sensitivity Charts









End of Sensitivity Charts