Motor other - Gross year end loss concept
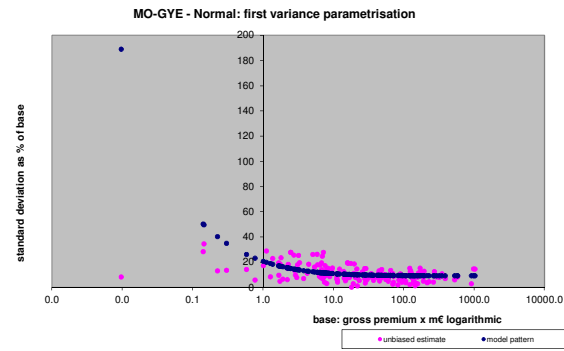
Motor other					Gross year end loss concept		MO-GYE		Motor other					Gross year end loss concept		MO-GYE
cfuesd	1.059		minimum	maximum	threshold		unbiased sigma		cfuesd	1.059		minimum	maximum	threshold		unbiased sigma
cvuesd	0.018		-5.66	10.94	3.25		0.108		cvuesd	0.018		-11.01	7.38	3.25		0.118
mean x	87						Normal		mean x	87						Lognormal
Minimise	1.111		specific	sample		standard				Minimise	-1.062		specific	sample		standard		
			parameters	size	mean	deviation	skewness	kurtosis		ln(sigma)	-2.191		parameters	size	mean	deviation	skewness	kurtosis
delta	0.889		185	1710	0.01	1.00	2.3	25.2		delta	0.947		185	1710	0.04	1.01	-0.9	20.5
sigma	0.102									sigma	0.112							
cfuesd	1.057		minimum	maximum	threshold		unbiased sigma		cfuesd	1.057		minimum	maximum	threshold		unbiased sigma
cvuesd	0.018		-3.28	3.92	3.24		0.094		cvuesd	0.018		-3.93	3.52	3.24		0.096
mean x	87						Normal		mean x	87						Lognormal
Minimise	0.893		specific	sample		standard				Minimise	-1.283		specific	sample		standard		
			parameters	size	mean	deviation	skewness	kurtosis		ln(sigma)	-2.399		parameters	size	mean	deviation	skewness	kurtosis
delta	0.945		175	1666	0.01	1.00	0.6	4.1		delta	0.957		175	1664	0.02	1.01	0.1	3.6
sigma	0.089									sigma	0.091							

cfuesd	1.058		minimum	maximum	threshold		unbiased sigma		cfuesd	1.057		minimum	maximum	threshold		unbiased sigma
cvuesd	0.018		-3.42	3.46	3.24		0.092		cvuesd	0.018		-3.55	3.04	3.24		0.095
mean x	87						Normal		mean x	87						Lognormal
Minimise	0.856		specific	sample		standard				Minimise	-1.294		specific	sample		standard		
			parameters	size	mean	deviation	skewness	kurtosis		ln(sigma)	-2.412		parameters	size	mean	deviation	skewness	kurtosis
delta	0.953		175	1655	0.01	1.00	0.5	3.7		delta	0.957		175	1661	0.02	1.01	0.1	3.5
sigma	0.087									sigma	0.090							

MO-GYE - Normal: first variance parametrisation

MO-GYE - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	10.73	9.47
model pattern	12.68	9.82

Legend: Normal VP1, LogNormal VP1, Perfect fit

Other motor/compliance analysis

Other motor/compliance analysis (ln)

Legend: policyholder view, company view

	Population average implied kappa	1.00			Population average implied kappa	1.00
policyholder view	50%	Kappa	0.99	policyholder view	50%	Kappa	0.99
policyholder view	75%	Kappa	1.00	policyholder view	75%	Kappa	1.00
policyholder view	90%	Kappa	1.03	policyholder view	90%	Kappa	1.02
policyholder view	95%	Kappa	1.07	policyholder view	95%	Kappa	1.06
company view	50%	Kappa	1.08	company view	50%	Kappa	1.07
company view	65%	Kappa	1.20	company view	65%	Kappa	1.18

Bar chart (% specific, % sample): IT 16.0%, UK 9.3%, FR 7.7%, ES 7.3%, NL 7.0%, BE 7.0%, DK 5.7%, AT 4.4%, FI 4.2%, NO 3.7%, IE 3.3%, MT 3.0%, HU 3.0%, SI 2.9%, RO 2.6%, LU 2.4%, PT 2.3%, SE 2.1%, LV 1.8%, IS 1.5%, LT 1.5%, PL 0.7%, SK 0.6%

Motor third party liability - Gross year end loss concept

Left block (Normal)

Motor third party liability				Gross year end loss concept	MTPL-GYE
cfuesd	1.057	minimum	maximum	threshold	unbiased sigma
cvuesd	0.018	-5.29	8.78	3.26	0.116
mean x	137				Normal
Minimise	**1.819**	specific parameters	sample size	standard deviation	kurtosis
				mean	skewness	
delta	0.858	188	1782	0.01	1.00	1.5	14.8
sigma	0.110						

cfuesd	1.055	minimum	maximum	threshold	unbiased sigma
cvuesd	0.018	-3.71	4.60	3.25	0.108
mean x	137				Normal
Minimise	**1.665**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	0.935	176	1734	0.00	1.00	0.4	4.6
sigma	0.103						

Right block (Lognormal)

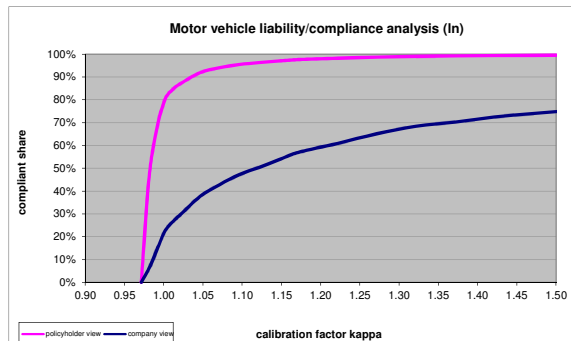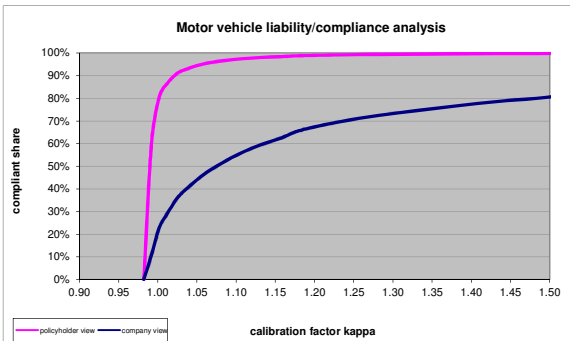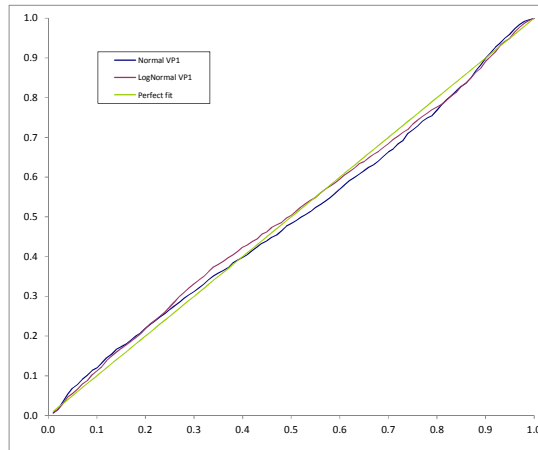| Motor third party liability				Gross year end loss concept	MTPL-GYE
cfuesd	1.057	minimum	maximum	threshold	unbiased sigma
cvuesd	0.018	-10.36	6.02	3.26	0.125
mean x	137				Lognormal
Minimise	**-1.126**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-2.134	188	1782	0.03	1.00	-1.1	15.4
delta	0.894						
sigma	0.118						

cfuesd	1.055	minimum	maximum	threshold	unbiased sigma
cvuesd	0.018	-4.67	3.45	3.25	0.107
mean x	137				Lognormal
Minimise	**-1.334**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-2.284	175	1720	0.02	1.00	-0.2	4.6
delta	0.938						
sigma	0.102						

Lower left (Normal)

cfuesd	1.056	minimum	maximum	threshold	unbiased sigma
cvuesd	0.018	-3.12	3.42	3.25	0.108
mean x	137				Normal
Minimise	**1.615**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	0.964	176	1721	0.00	1.00	0.3	3.7
sigma	0.102						

Lower right (Lognormal)

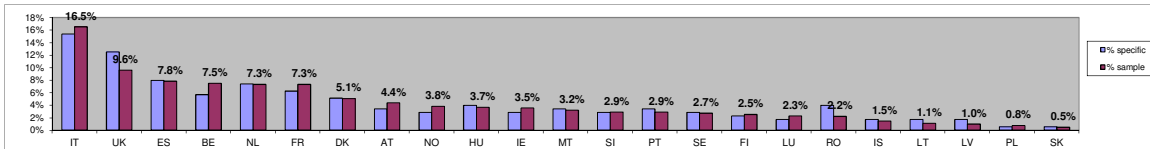| cfuesd	1.056	minimum	maximum	threshold	unbiased sigma
cvuesd	0.018	-4.39	3.53	3.25	0.101
mean x	138				Lognormal
Minimise	**-1.408**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-2.349	175	1704	0.01	1.00	0.0	3.9
delta	0.943						
sigma	0.095						

MTPL-GYE - Normal: first variance parametrisation

MTPL-GYE - Lognormal: first variance parametrisation
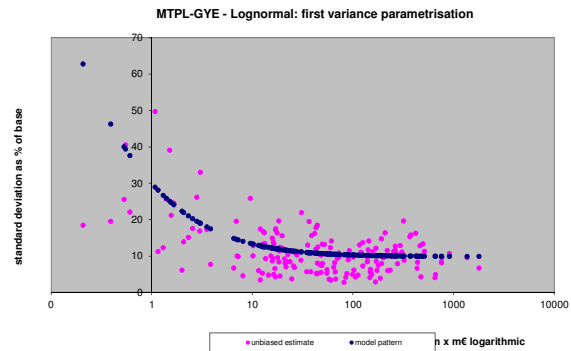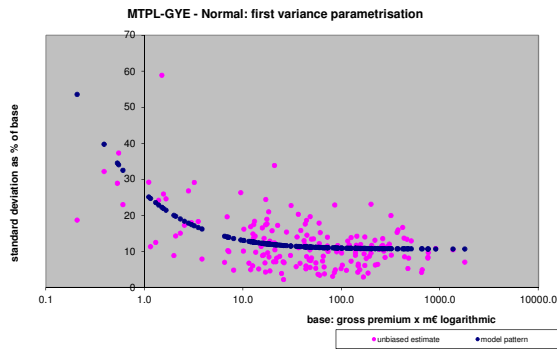
	mean	median
unbiased estimate	12.21	10.54
model pattern	12.92	11.13

Motor vehicle liability/compliance analysis

Motor vehicle liability/compliance analysis (ln)

	Population average implied kappa	1.01
policyholder view	50%	Kappa	0.99
policyholder view	75%	Kappa	1.00
policyholder view	90%	Kappa	1.02
policyholder view	95%	Kappa	1.06
company view	50%	Kappa	1.08
company view	65%	Kappa	1.18

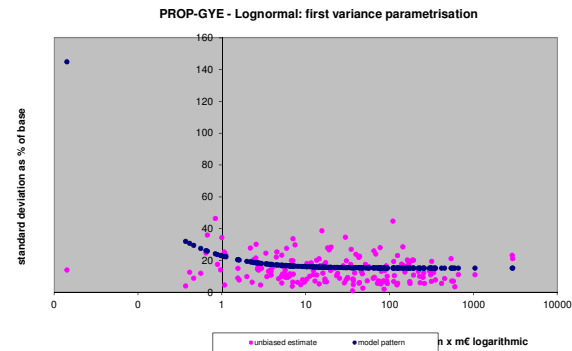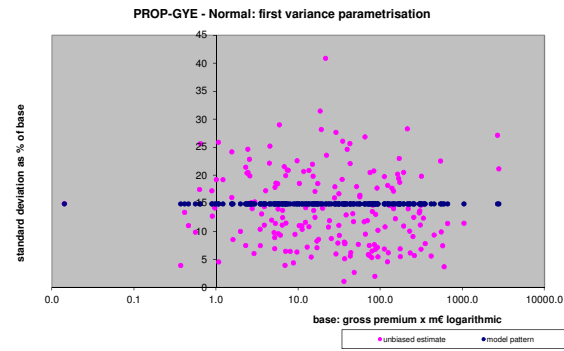|	Population average implied kappa	1.01
policyholder view	50%	Kappa	0.98
policyholder view	75%	Kappa	1.00
policyholder view	90%	Kappa	1.04
policyholder view	95%	Kappa	1.09
company view	50%	Kappa	1.12
company view	65%	Kappa	1.27

Fire and other damage to property - Gross year end loss concept

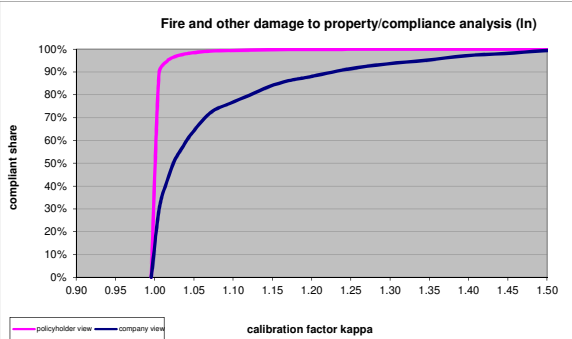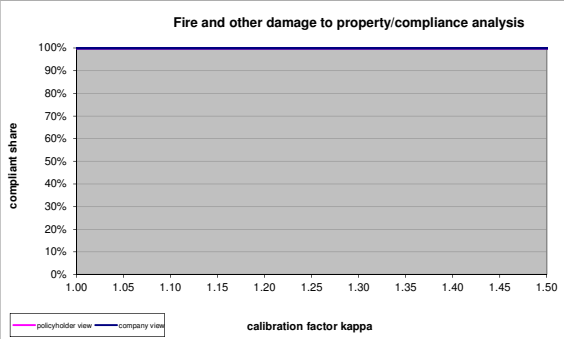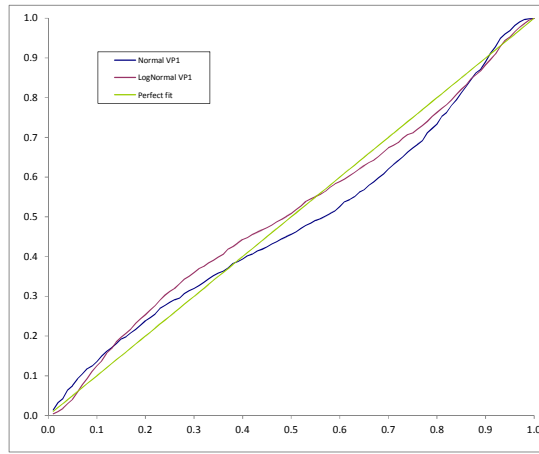| Fire and other damage to property				Gross year end loss concept		*PROP-GYE*
cfuesd	1.058	minimum	maximum	threshold		unbiased sigma
cvuesd	0.017	-4.45	10.79	3.27		0.259
mean x	140					Normal
Minimise	**1.875**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	1.000	196	1848	0.00	1.00	3.3	31.1
sigma	0.245						
cfuesd	1.057	minimum	maximum	threshold		unbiased sigma
cvuesd	0.018	-4.74	5.29	3.26		0.175
mean x	140					Normal
Minimise	**1.496**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	1.000	188	1797	0.00	1.00	0.9	6.7
sigma	0.165						

Fire and other damage to property				Gross year end loss concept		*PROP-GYE*
cfuesd	1.058	minimum	maximum	threshold		unbiased sigma
cvuesd	0.017	-7.85	5.99	3.27		0.249
mean x	140					Lognormal
Minimise	**-0.370**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-1.448	196	1848	0.08	1.01	-1.1	14.9
delta	0.995						
sigma	0.235						
cfuesd	1.057	minimum	maximum	threshold		unbiased sigma
cvuesd	0.018	-5.38	4.35	3.26		0.173
mean x	142					Lognormal
Minimise	**-0.666**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-1.812	187	1794	0.03	1.00	-0.1	5.9
delta	0.991						
sigma	0.163						

|						
cfuesd	1.058	minimum	maximum	threshold		unbiased sigma
cvuesd	0.018	-4.16	4.12	3.26		0.148
mean x	140					Normal
Minimise	**1.346**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	1.000	188	1767	0.00	1.00	0.7	4.8
sigma	0.140						

cfuesd	1.057	minimum	maximum	threshold		unbiased sigma
cvuesd	0.018	-4.42	3.75	3.26		0.151
mean x	138					Lognormal
Minimise	**-0.784**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-1.945	186	1769	0.02	1.00	0.0	4.5
delta	0.991						
sigma	0.143						

PROP-GYE - Normal: first variance parametrisation

PROP-GYE - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	13.79	12.77
model pattern	14.84	14.84

Fire and other damage to property/compliance analysis

Fire and other damage to property/compliance analysis (ln)

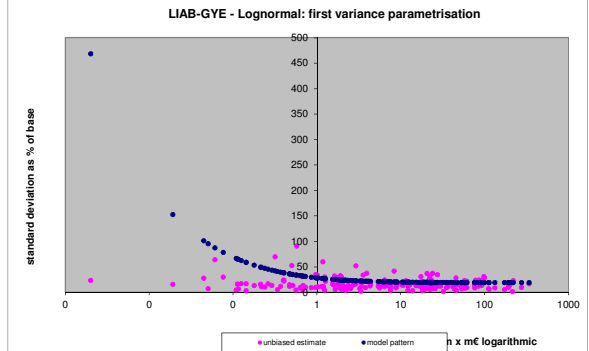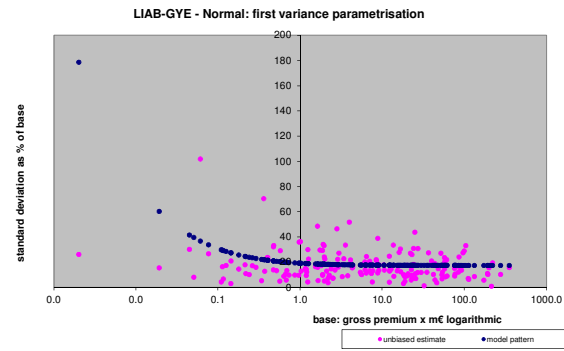|	Population average implied kappa		1.00
policyholder view	50%	Kappa	1.00
policyholder view	75%	Kappa	1.00
policyholder view	90%	Kappa	1.00
policyholder view	95%	Kappa	1.00
company view	50%	Kappa	1.00
company view	65%	Kappa	1.00

	Population average implied kappa		1.00
policyholder view	50%	Kappa	1.00
policyholder view	75%	Kappa	1.00
policyholder view	90%	Kappa	1.01
policyholder view	95%	Kappa	1.02
company view	50%	Kappa	1.02
company view	65%	Kappa	1.05
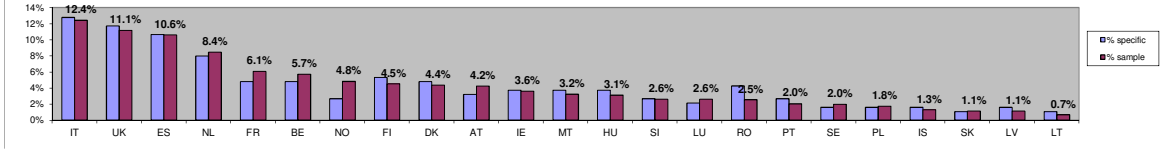
General liability - Gross year end loss concept

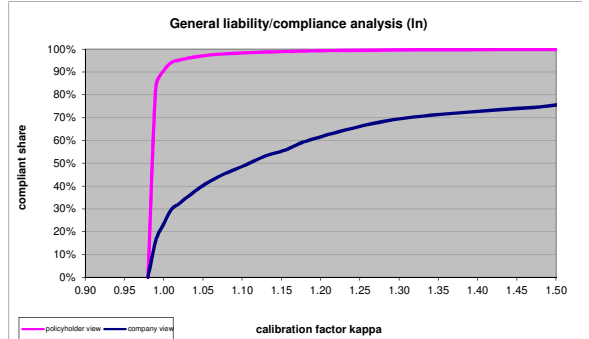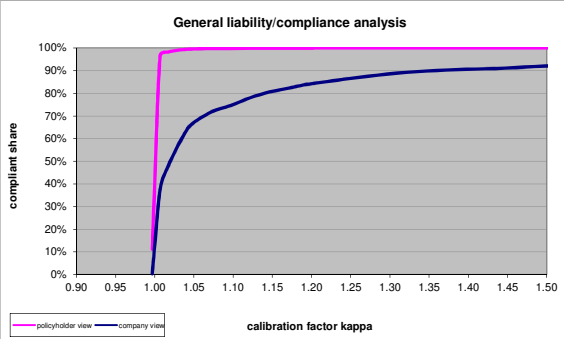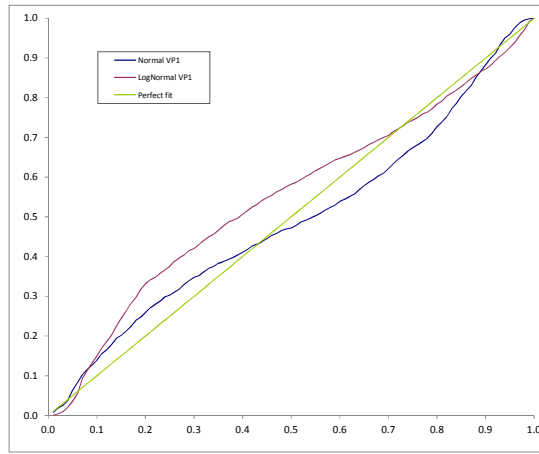| General liability					Gross year end loss concept		*LIAB-GYE*
cfuesd	1.059		minimum	maximum	threshold		unbiased sigma
cvuesd	0.018		-3.83	29.81	3.25		0.236
mean x	31						Normal
Minimise	1.106		specific	sample		standard		
			parameters	size	mean	deviation	skewness	kurtosis
delta	0.132		187	1718	0.02	1.00	15.8	462.8
sigma	0.222							
cfuesd	1.058		minimum	maximum	threshold		unbiased sigma
cvuesd	0.018		-3.74	9.04	3.24		0.187
mean x	30						Normal
Minimise	0.277		specific	sample		standard		
			parameters	size	mean	deviation	skewness	kurtosis
delta	0.969		180	1684	0.00	1.00	1.3	11.7
sigma	0.177							

General liability					Gross year end loss concept		*LIAB-GYE*
cfuesd	1.059		minimum	maximum	threshold		unbiased sigma
cvuesd	0.018		-7.98	9.03	3.25		0.211
mean x	31						Lognormal
Minimise	-0.001		specific	sample		standard		
ln(sigma)	-1.614		parameters	size	mean	deviation	skewness	kurtosis
delta	0.523		187	1718	0.24	1.05	-0.7	11.7
sigma	0.199							
cfuesd	1.059		minimum	maximum	threshold		unbiased sigma
cvuesd	0.018		-4.73	4.93	3.24		0.195
mean x	31						Lognormal
Minimise	-0.248		specific	sample		standard		
ln(sigma)	-1.691		parameters	size	mean	deviation	skewness	kurtosis
delta	0.886		180	1668	0.13	1.03	-0.9	6.5
sigma	0.184							

cfuesd	1.059		minimum	maximum	threshold		unbiased sigma
cvuesd	0.018		-4.06	4.67	3.24		0.173
mean x	31						Normal
Minimise	0.081		specific	sample		standard		
			parameters	size	mean	deviation	skewness	kurtosis
delta	0.993		179	1658	0.00	1.00	0.5	5.3
sigma	0.163							

cfuesd	1.059		minimum	maximum	threshold		unbiased sigma
cvuesd	0.019		-6.07	3.77	3.23		0.188
mean x	31						Lognormal
Minimise	-0.388		specific	sample		standard		
ln(sigma)	-1.727		parameters	size	mean	deviation	skewness	kurtosis
delta	0.960		178	1638	0.09	1.02	-0.8	6.5
sigma	0.178							

LIAB-GYE - Normal: first variance parametrisation

LIAB-GYE - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	16.90	13.66
model pattern	20.07	17.49

General liability/compliance analysis

General liability/compliance analysis (ln)

	Population average implied kappa		1.00
policyholder view	50%	Kappa	1.00
policyholder view	75%	Kappa	1.00
policyholder view	90%	Kappa	1.01
policyholder view	95%	Kappa	1.01
company view	50%	Kappa	1.02
company view	65%	Kappa	1.04

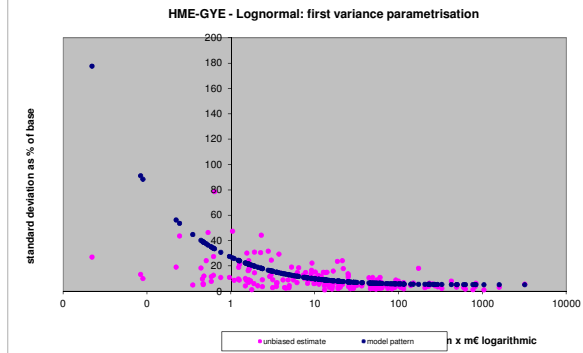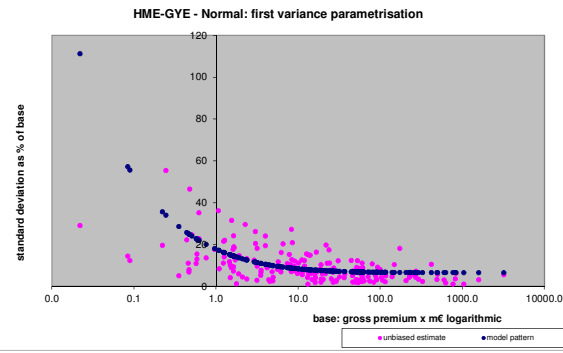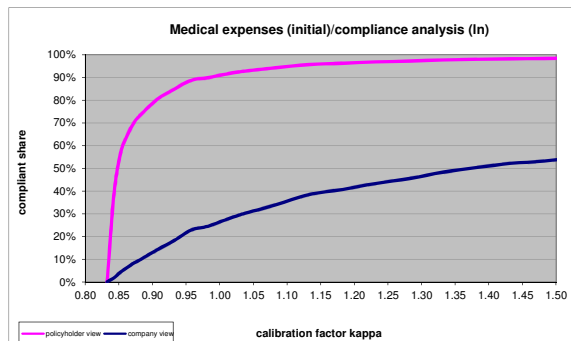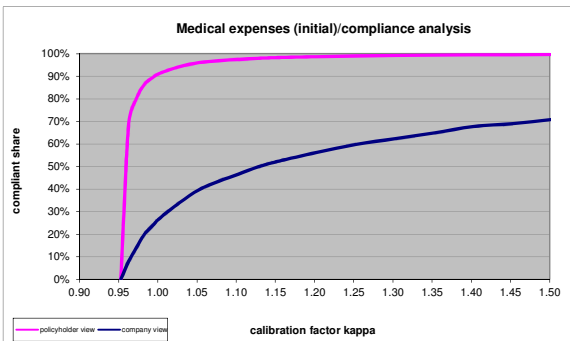|	Population average implied kappa		0.99
policyholder view	50%	Kappa	0.99
policyholder view	75%	Kappa	0.99
policyholder view	90%	Kappa	1.00
policyholder view	95%	Kappa	1.02
company view	50%	Kappa	1.11
company view	65%	Kappa	1.24

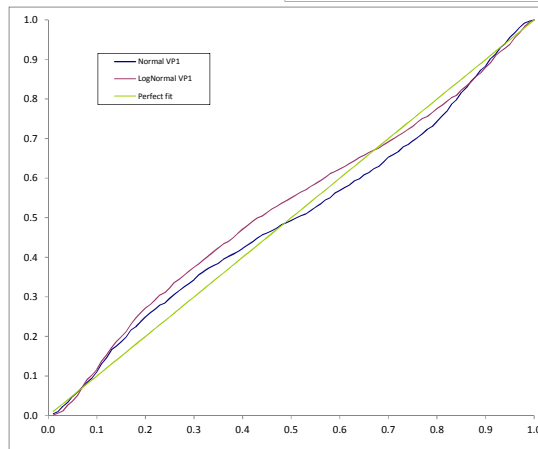## Medical expense - Gross year end loss concept

Medical expense — Gross year end loss concept (HME-GYE) — Normal (left block)

Medical expense				Gross year end loss concept	HME-GYE
cfuesd	1.064	minimum	maximum	threshold	unbiased sigma
cvuesd	0.017	-7.11	8.95	3.27	0.090
mean x	84				Normal
Minimise	**0.358**	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.916	217	1861	0.00	1.00	1.5	18.8
sigma	0.085						
cfuesd	1.060	minimum	maximum	threshold		unbiased sigma
cvuesd	0.018	-4.08	4.10	3.26		0.072
mean x	64					Normal
Minimise	**0.066**	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.903	195	1774	0.00	1.00	0.2	5.0
sigma	0.068						

Medical expense				Gross year end loss concept	HME-GYE
cfuesd	1.064	minimum	maximum	threshold	unbiased sigma
cvuesd	0.017	-24.45	5.15	3.27	0.113
mean x	84				Lognormal
Minimise	**-0.569**	specific	sample		standard	
ln(sigma)	-2.242	parameters	size	mean	deviation	skewness	kurtosis
delta	0.646	217	1861	0.14	1.04	-10.0	201.3
sigma	0.106						
cfuesd	1.060	minimum	maximum	threshold		unbiased sigma
cvuesd	0.018	-5.95	4.57	3.26		0.068
mean x	63					Lognormal
Minimise	**-1.159**	specific	sample		standard	
ln(sigma)	-2.744	parameters	size	mean	deviation	skewness	kurtosis
delta	0.683	195	1787	0.05	1.01	-0.6	6.7
sigma	0.064						

cfuesd	1.060	minimum	maximum	threshold	unbiased sigma
cvuesd	0.018	-4.01	3.60	3.25	0.068
mean x	64				Normal
Minimise	**-0.008**	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.907	194	1755	0.00	1.00	0.1	4.3
sigma	0.064						

cfuesd	1.060	minimum	maximum	threshold	unbiased sigma
cvuesd	0.018	-3.80	3.32	3.26	0.060
mean x	63				Lognormal
Minimise	**-1.282**	specific	sample		standard	
ln(sigma)	-2.871	parameters	size	mean	deviation	skewness	kurtosis
delta	0.693	194	1764	0.05	1.01	-0.4	4.5
sigma	0.057						

HME-GYE - Normal: first variance parametrisation

HME-GYE - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	9.61	7.00
model pattern	11.09	7.79

Medical expenses (initial)/compliance analysis

Medical expenses (initial)/compliance analysis (ln)

Population average implied kappa		0.98
policyholder view	50%	Kappa	0.96
policyholder view	75%	Kappa	0.97
policyholder view	90%	Kappa	1.00
policyholder view	95%	Kappa	1.04
company view	50%	Kappa	1.13
company view	65%	Kappa	1.36

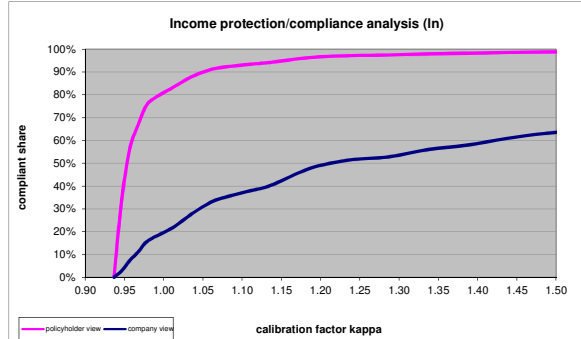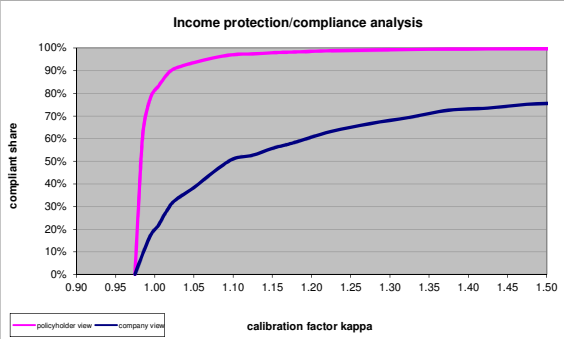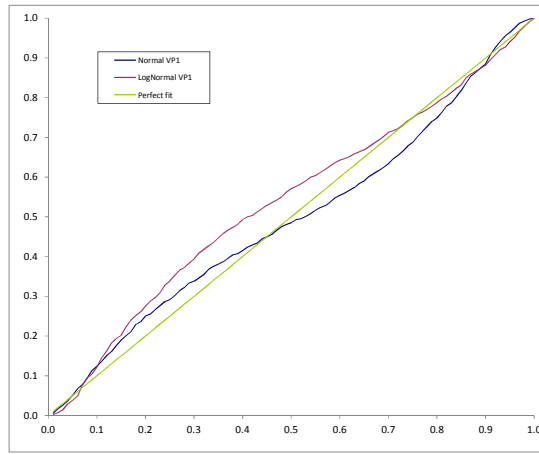| Population average implied kappa		0.93
policyholder view	50%	Kappa	0.85
policyholder view	75%	Kappa	0.89
policyholder view	90%	Kappa	0.98
policyholder view	95%	Kappa	1.11
company view	50%	Kappa	1.37
company view	65%	Kappa	1.98
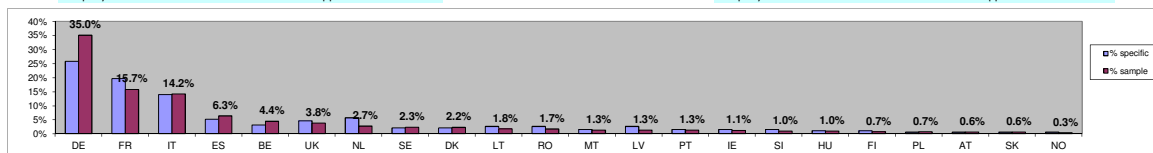
Income protection - Gross year end loss concept

Income protection				Gross year end loss concept		HIP-GYE
cfuesd	1.060	minimum	maximum	threshold		unbiased sigma
cvuesd	0.022	-5.64	7.13	3.15		0.114
mean x	35					Normal
Minimise	0.265	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.808	133	1210	0.01	1.00	0.5	13.6
sigma	0.107					
cfuesd	1.060	minimum	maximum	threshold		unbiased sigma
cvuesd	0.022	-5.00	4.65	3.14		0.101
mean x	35					Normal
Minimise	-0.061	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.943	127	1167	0.01	1.00	0.2	5.2
sigma	0.095					

Income protection				Gross year end loss concept		HIP-GYE
cfuesd	1.060	minimum	maximum	threshold		unbiased sigma
cvuesd	0.022	-14.86	2.69	3.15		0.144
mean x	35					Lognormal
Minimise	-0.167	specific	sample		standard	
ln(sigma)	-1.997	parameters	size	mean	deviation	skewness	kurtosis
delta	0.448	133	1210	0.23	1.04	-4.6	57.0
sigma	0.136					
cfuesd	1.059	minimum	maximum	threshold		unbiased sigma
cvuesd	0.022	-5.74	5.06	3.14		0.111
mean x	35					Lognormal
Minimise	-0.574	specific	sample		standard	
ln(sigma)	-2.256	parameters	size	mean	deviation	skewness	kurtosis
delta	0.842	128	1185	0.13	1.02	-0.4	7.5
sigma	0.105					

cfuesd	1.060	minimum	maximum	threshold		unbiased sigma
cvuesd	0.022	-3.10	3.48	3.13		0.094
mean x	35					Normal
Minimise	-0.145	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.950	127	1155	0.00	1.00	0.3	4.1
sigma	0.088					

cfuesd	1.060	minimum	maximum	threshold		unbiased sigma
cvuesd	0.022	-5.98	3.81	3.13		0.093
mean x	35					Lognormal
Minimise	-0.758	specific	sample		standard	
ln(sigma)	-2.431	parameters	size	mean	deviation	skewness	kurtosis
delta	0.877	128	1162	0.08	1.02	-0.4	5.1
sigma	0.088					

HIP-GYE - Normal: first variance parametrisation

HIP-GYE - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	11.62	9.84
model pattern	15.35	9.95

Income protection/compliance analysis

Income protection/compliance analysis (ln)

	Population average implied kappa		1.00
policyholder view	50%	Kappa	0.98
policyholder view	75%	Kappa	0.99
policyholder view	90%	Kappa	1.02
policyholder view	95%	Kappa	1.07
company view	50%	Kappa	1.10
company view	65%	Kappa	1.25

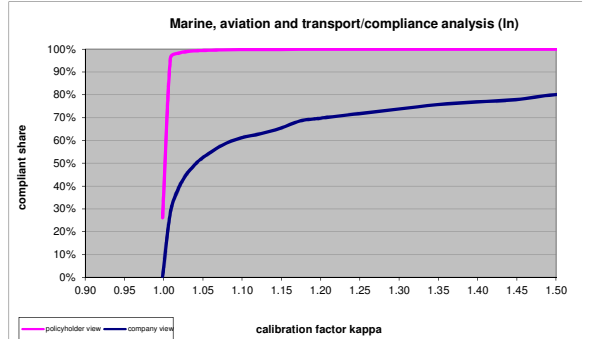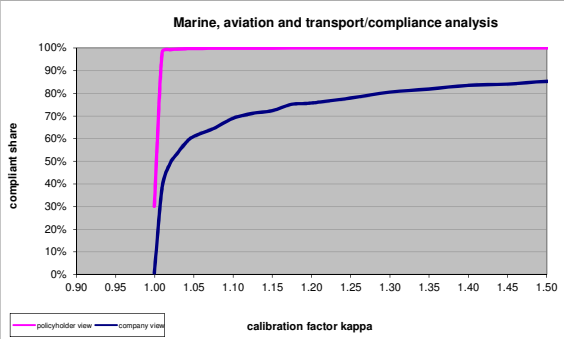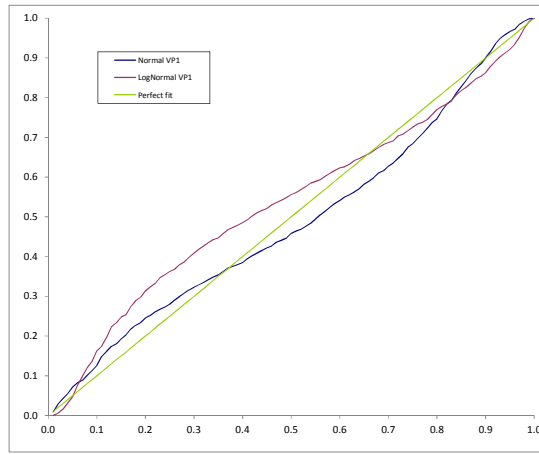|	Population average implied kappa		1.01
policyholder view	50%	Kappa	0.95
policyholder view	75%	Kappa	0.98
policyholder view	90%	Kappa	1.05
policyholder view	95%	Kappa	1.16
company view	50%	Kappa	1.22
company view	65%	Kappa	1.55

IT	FR	NL	ES	DK	SI	HU	UK	BE	AT	PT	MT	LU	SE	IE	IS	PL	LV	LT	NO	SK	RO
14.5%	12.7%	9.2%	9.2%	7.4%	4.8%	4.7%	4.2%	4.0%	3.8%	3.5%	3.5%	3.3%	3.2%	2.9%	2.1%	1.8%	1.5%	1.4%	1.2%	1.0%	0.3%

Marine, aviation and transport - Gross year end loss concept

Marine, aviation and transport				Gross year end loss concept		MAT-GYE
cfuesd	1.057	minimum	maximum	threshold		unbiased sigma
cvuesd	0.022	-14.42	9.31	3.14		0.299
mean x	59					Normal
Minimise	1.063	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.841	124	1179	0.01	1.00	0.8	62.5
sigma	0.283						

Marine, aviation and transport				Gross year end loss concept		MAT-GYE
cfuesd	1.057	minimum	maximum	threshold		unbiased sigma
cvuesd	0.022	-15.14	6.77	3.14		0.346
mean x	59					Lognormal
Minimise	0.337	specific	sample		standard	
ln(sigma)	-1.117	parameters	size	mean	deviation	skewness	kurtosis
delta	0.839	124	1179	0.31	1.05	-2.4	42.9
sigma	0.327						

cfuesd	1.057	minimum	maximum	threshold		unbiased sigma
cvuesd	0.022	-3.48	6.97	3.13		0.232
mean x	60					Normal
Minimise	0.182	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.997	120	1153	0.00	1.00	1.2	8.3
sigma	0.220						

cfuesd	1.057	minimum	maximum	threshold		unbiased sigma
cvuesd	0.022	-10.06	4.84	3.13		0.302
mean x	59					Lognormal
Minimise	0.019	specific	sample		standard	
ln(sigma)	-1.252	parameters	size	mean	deviation	skewness	kurtosis
delta	0.967	121	1156	0.16	1.02	-1.8	18.2
sigma	0.286						

cfuesd	1.058	minimum	maximum	threshold		unbiased sigma
cvuesd	0.022	-3.13	4.20	3.13		0.204
mean x	61					Normal
Minimise	0.014	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.998	120	1136	0.00	1.00	0.5	4.4
sigma	0.193						

cfuesd	1.057	minimum	maximum	threshold		unbiased sigma
cvuesd	0.022	-7.09	3.50	3.13		0.266
mean x	59					Lognormal
Minimise	-0.288	specific	sample		standard	
ln(sigma)	-1.378	parameters	size	mean	deviation	skewness	kurtosis
delta	0.997	119	1135	0.06	1.01	-1.1	8.4
sigma	0.252						

MAT-GYE - Normal: first variance parametrisation

MAT-GYE - Lognormal: first variance parametrisation
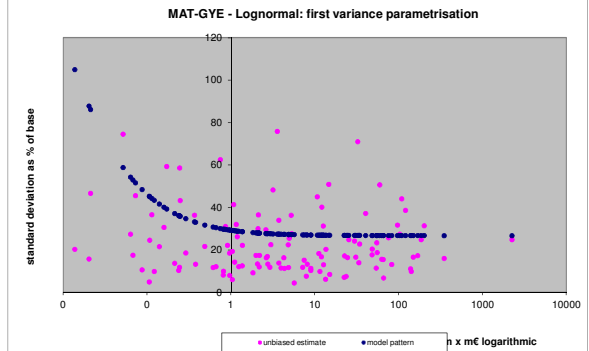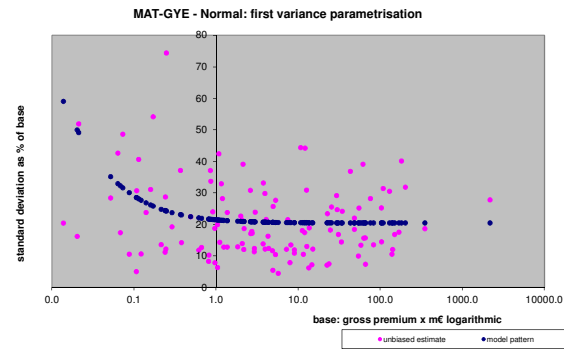
	mean	median
unbiased estimate	21.01	17.81
model pattern	22.57	20.61

Marine, aviation and transport/compliance analysis

Marine, aviation and transport/compliance analysis (ln)

	Population average implied kappa		1.00
policyholder view	50%	Kappa	1.00
policyholder view	75%	Kappa	1.01
policyholder view	90%	Kappa	1.01
policyholder view	95%	Kappa	1.01
company view	50%	Kappa	1.02
company view	65%	Kappa	1.08

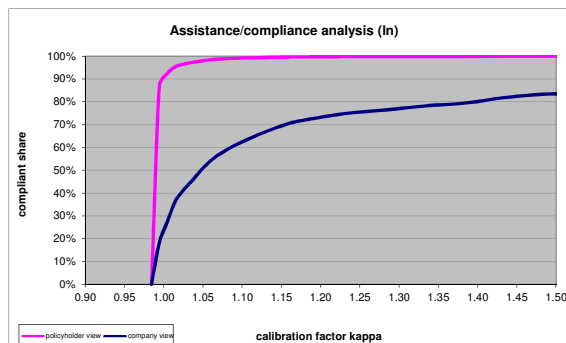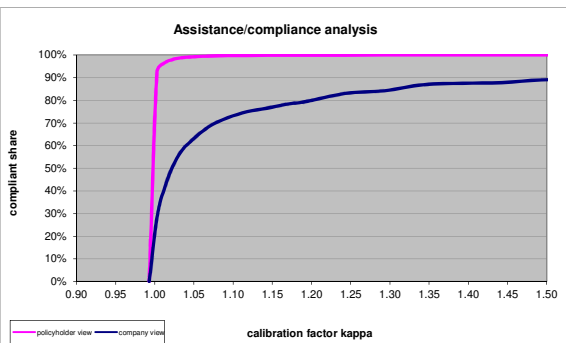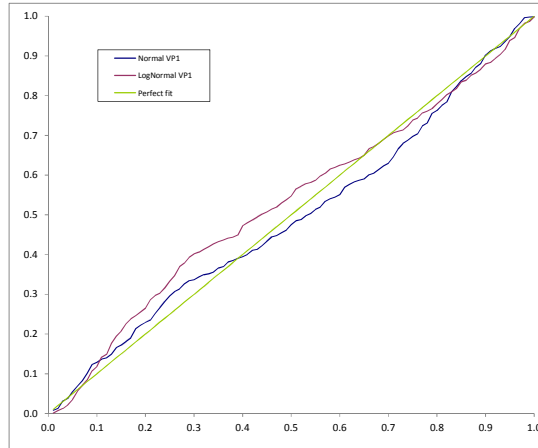|	Population average implied kappa		1.00
policyholder view	50%	Kappa	1.00
policyholder view	75%	Kappa	1.01
policyholder view	90%	Kappa	1.01
policyholder view	95%	Kappa	1.01
company view	50%	Kappa	1.04
company view	65%	Kappa	1.15
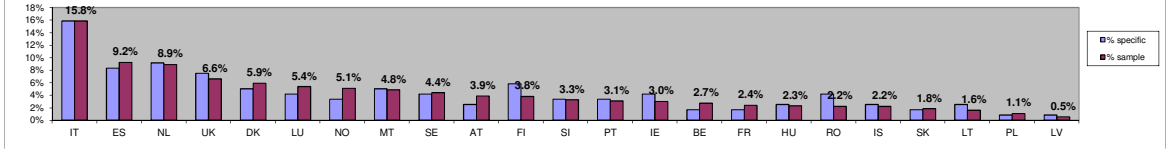
Assistance - Gross year end loss concept

Assistance				Gross year end loss concept			AS-GYE
cfuesd	1.072	minimum	maximum	threshold			unbiased sigma
cvuesd	0.035	-4.04	4.93	2.87			0.119
mean x	8						Normal
Minimise	-1.366	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.943	62	479	0.01	1.00	0.8	7.0
sigma	0.111						
cfuesd	1.068	minimum	maximum	threshold			unbiased sigma
cvuesd	0.036	-3.66	4.15	2.84			0.102
mean x	8						Normal
Minimise	-1.563	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.980	55	448	0.00	1.00	0.4	5.1
sigma	0.096						

Assistance				Gross year end loss concept			AS-GYE
cfuesd	1.072	minimum	maximum	threshold			unbiased sigma
cvuesd	0.035	-8.32	2.77	2.87			0.126
mean x	8						Lognormal
Minimise	-0.399	specific	sample		standard		
ln(sigma)	-2.141	parameters	size	mean	deviation	skewness	kurtosis
delta	0.876	62	479	0.11	1.01	-1.5	13.3
sigma	0.118						
cfuesd	1.068	minimum	maximum	threshold			unbiased sigma
cvuesd	0.035	-4.13	3.49	2.85			0.119
mean x	8						Lognormal
Minimise	-0.567	specific	sample		standard		
ln(sigma)	-2.191	parameters	size	mean	deviation	skewness	kurtosis
delta	0.959	55	452	0.07	1.01	-0.4	5.1
sigma	0.112						

cfuesd	1.068	minimum	maximum	threshold			unbiased sigma
cvuesd	0.036	-2.94	2.99	2.83			0.091
mean x	8						Normal
Minimise	-1.699	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.985	53	434	-0.01	1.00	0.3	3.9
sigma	0.085						

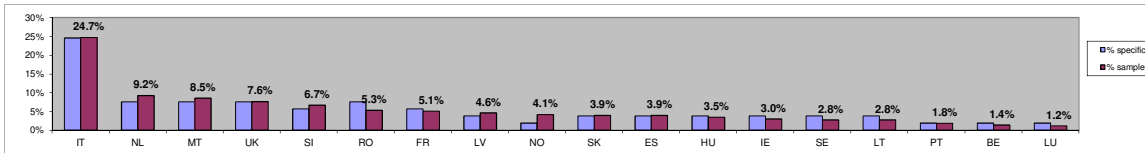|							
cfuesd	1.069	minimum	maximum	threshold			unbiased sigma
cvuesd	0.036	-3.93	3.06	2.83			0.098
mean x	8						Lognormal
Minimise	-0.755	specific	sample		standard		
ln(sigma)	-2.394	parameters	size	mean	deviation	skewness	kurtosis
delta	0.969	54	434	0.04	1.00	-0.5	4.5
sigma	0.091						

AS-GYE - Normal: first variance parametrisation

AS-GYE - Lognormal: first variance parametrisation
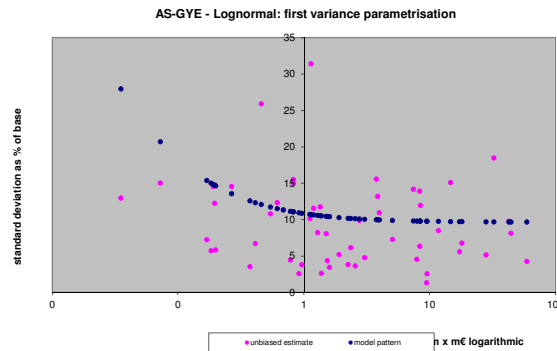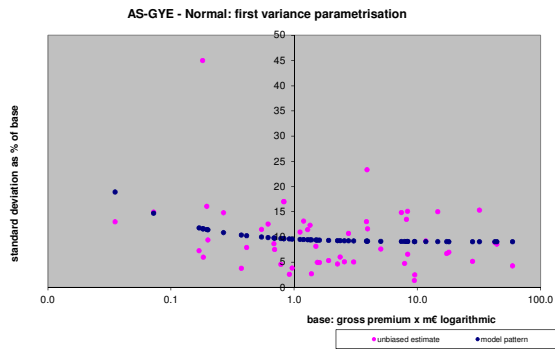
	mean	median
unbiased estimate	9.83	8.54
model pattern	9.83	9.32

Assistance/compliance analysis

Assistance/compliance analysis (ln)

	Population average implied kappa		1.00
policyholder view	50%	Kappa	1.00
policyholder view	75%	Kappa	1.00
policyholder view	90%	Kappa	1.00
policyholder view	95%	Kappa	1.01
company view	50%	Kappa	1.02
company view	65%	Kappa	1.06

	Population average implied kappa		0.99
policyholder view	50%	Kappa	0.99
policyholder view	75%	Kappa	0.99
policyholder view	90%	Kappa	1.00
policyholder view	95%	Kappa	1.01
company view	50%	Kappa	1.05
company view	65%	Kappa	1.12

IT 24.7% | NL 9.2% | MT 8.5% | UK 7.6% | SI 6.7% | RO 5.3% | FR 5.1% | LV 4.6% | NO 4.1% | SK 3.9% | ES 3.9% | HU 3.5% | IE 3.0% | SE 2.8% | LT 2.8% | PT 1.8% | BE 1.4% | LU 1.2%

Credit and suretyship - Gross year end loss concept

Credit and suretyship　　　　　　　Gross year end loss concept　　*CS-GYE*

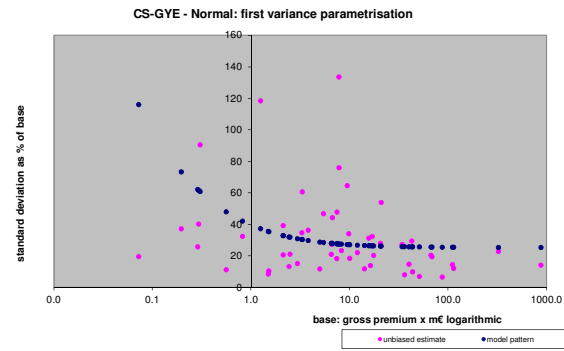|		minimum	maximum	threshold			unbiased sigma
cfuesd	1.066	-3.62	10.96	2.89			0.374
cvuesd	0.033						Normal
mean x	38						
Minimise	1.721	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	0.111	61	511	0.00	1.00	4.5	44.9
sigma	0.350						

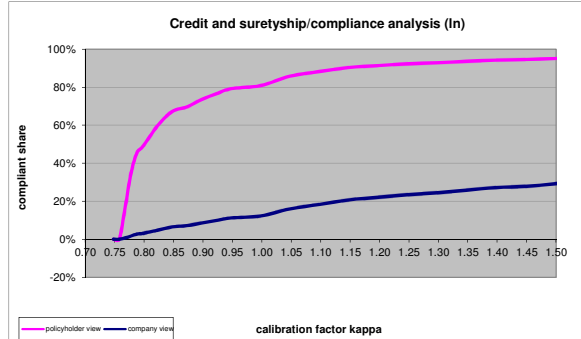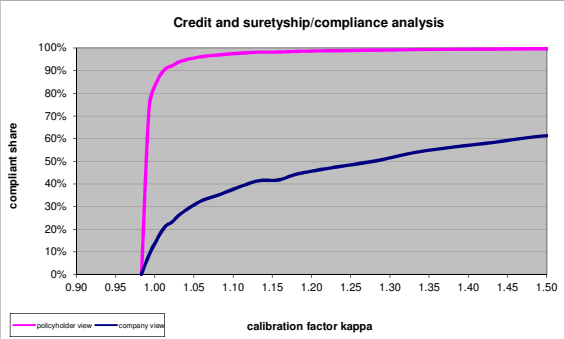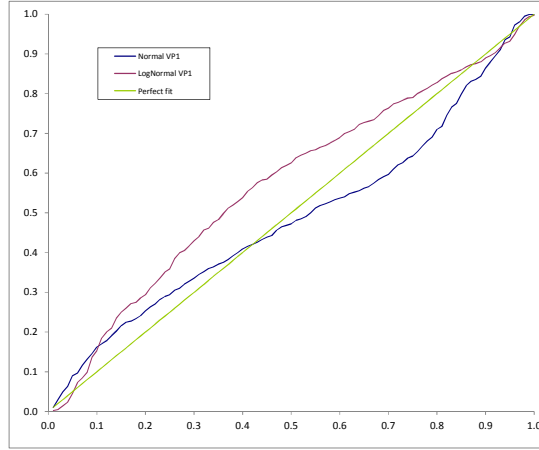|		minimum	maximum	threshold			unbiased sigma
cfuesd	1.062	-2.87	5.57	2.87			0.228
cvuesd	0.034						Normal
mean x	40						
Minimise	1.179	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	0.504	54	481	0.00	1.00	1.3	8.1
sigma	0.214						

		minimum	maximum	threshold			unbiased sigma
cfuesd	1.062	-4.32	5.54	2.85			0.256
cvuesd	0.035						Normal
mean x	41						
Minimise	0.839	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	0.966	52	461	0.00	1.00	1.0	7.7
sigma	0.241						

Credit and suretyship　　　　　　　Gross year end loss concept　　*CS-GYE*

		minimum	maximum	threshold			unbiased sigma
cfuesd	1.066	-6.65	3.96	2.89			0.484
cvuesd	0.033						Lognormal
mean x	38						
Minimise	0.677	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-0.789	61	511	0.41	1.11	-0.6	7.4
delta	0.022						
sigma	0.454						

		minimum	maximum	threshold			unbiased sigma
cfuesd	1.063	-5.29	4.17	2.86			0.283
cvuesd	0.034						Lognormal
mean x	41						
Minimise	0.273	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-1.323	54	477	0.23	1.05	-0.5	5.8
delta	0.371						
sigma	0.266						

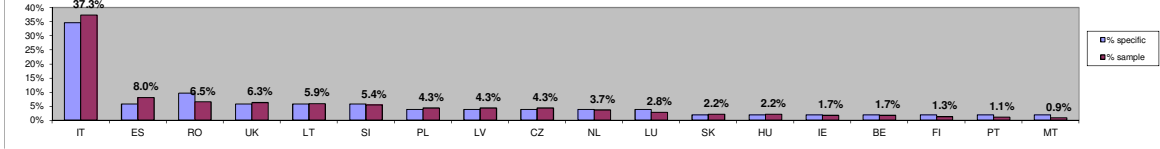|		minimum	maximum	threshold			unbiased sigma
cfuesd	1.062	-4.79	2.76	2.85			0.244
cvuesd	0.035						Lognormal
mean x	42						
Minimise	0.128	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-1.472	52	463	0.18	1.03	-0.3	4.5
delta	0.559						
sigma	0.229						

CS-GYE - Normal: first variance parametrisation

CS-GYE - Lognormal: first variance parametrisation
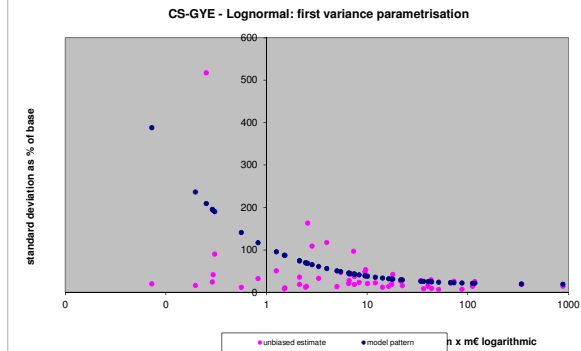
	mean	median
unbiased estimate	31.02	22.30
model pattern	33.06	27.39

Credit and suretyship/compliance analysis

Credit and suretyship/compliance analysis (ln)

	Population average implied kappa		1.01
policyholder view	50%	Kappa	0.99
policyholder view	75%	Kappa	0.99
policyholder view	90%	Kappa	1.01
policyholder view	95%	Kappa	1.04
company view	50%	Kappa	1.28
company view	65%	Kappa	1.69

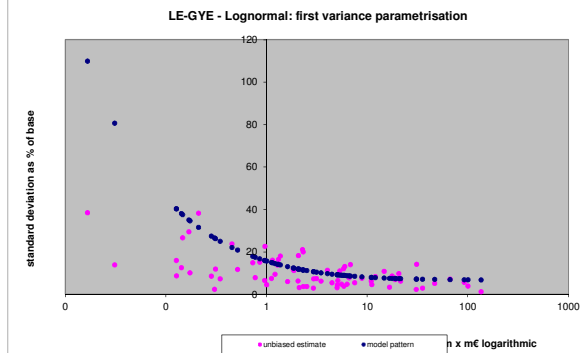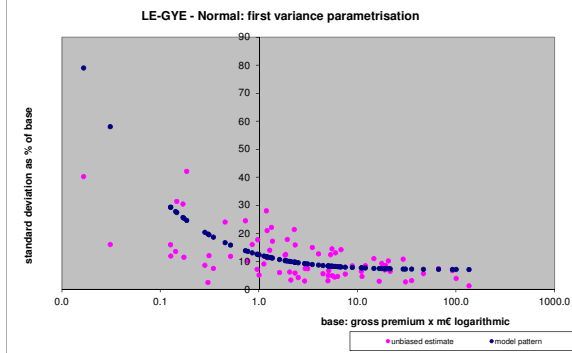|	Population average implied kappa		1.09
policyholder view	50%	Kappa	0.80
policyholder view	75%	Kappa	0.91
policyholder view	90%	Kappa	1.14
policyholder view	95%	Kappa	1.50
company view	50%	Kappa	2.94
company view	65%	Kappa	4.17

Legal expenses - Gross year end loss concept

Legal expenses				Gross year end loss concept		LE-GYE
cfuesd	1.061	minimum	maximum	threshold		unbiased sigma
cvuesd	0.028	-8.05	7.87	2.99		0.175
mean x	11					Normal
Minimise	-0.671	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.980	80	720	0.00	1.00	1.2	24.2
sigma	0.165					
cfuesd	1.060	minimum	maximum	threshold		unbiased sigma
cvuesd	0.028	-4.78	5.17	2.98		0.099
mean x	11					Normal
Minimise	-1.069	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.915	76	700	0.00	1.00	0.1	6.9
sigma	0.094					

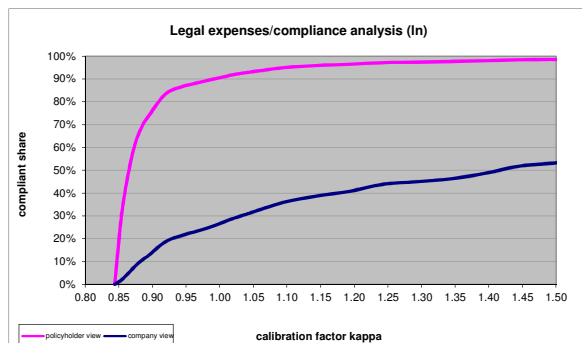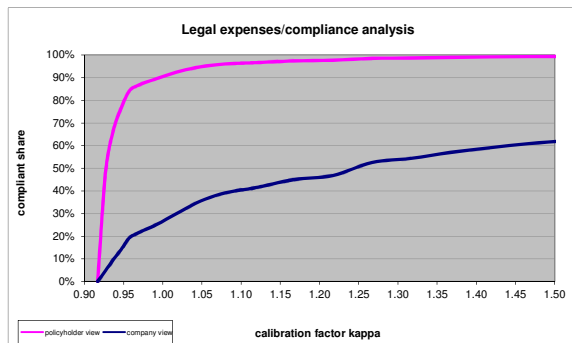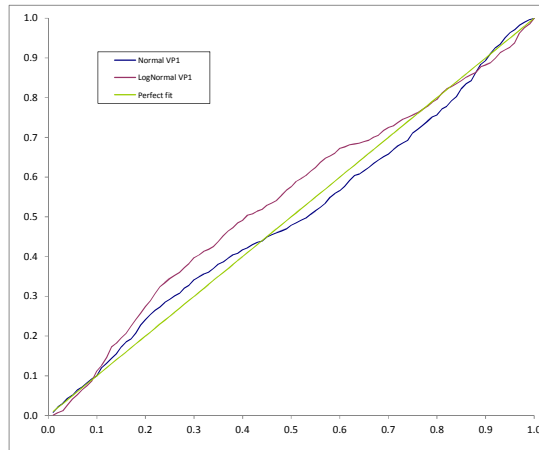| Legal expenses				Gross year end loss concept		LE-GYE
cfuesd	1.061	minimum	maximum	threshold		unbiased sigma
cvuesd	0.028	-14.31	3.97	2.99		0.272
mean x	11					Lognormal
Minimise	0.100	specific	sample		standard	
ln(sigma)	-1.362	parameters	size	mean	deviation	skewness	kurtosis
delta	0.985	80	720	0.22	1.04	-4.8	60.5
sigma	0.256					
cfuesd	1.060	minimum	maximum	threshold		unbiased sigma
cvuesd	0.028	-7.69	4.09	2.98		0.116
mean x	11					Lognormal
Minimise	-0.408	specific	sample		standard	
ln(sigma)	-2.210	parameters	size	mean	deviation	skewness	kurtosis
delta	0.832	76	700	0.12	1.02	-1.2	10.8
sigma	0.110					

cfuesd	1.060	minimum	maximum	threshold		unbiased sigma
cvuesd	0.029	-3.71	3.40	2.98		0.076
mean x	11					Normal
Minimise	-1.249	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.840	75	685	0.00	1.00	0.2	3.8
sigma	0.071					

cfuesd	1.060	minimum	maximum	threshold		unbiased sigma
cvuesd	0.029	-4.02	4.25	2.97		0.078
mean x	11					Lognormal
Minimise	-0.663	specific	sample		standard	
ln(sigma)	-2.608	parameters	size	mean	deviation	skewness	kurtosis
delta	0.712	74	679	0.08	1.02	-0.5	4.5
sigma	0.074					

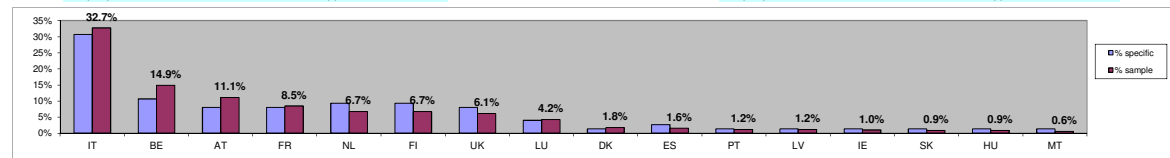LE-GYE - Normal: first variance parametrisation

LE-GYE - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	11.38	9.00
model pattern	13.08	9.43

Legal expenses/compliance analysis

Legal expenses/compliance analysis (ln)

	Population average implied kappa		0.97
policyholder view	50%	Kappa	0.93
policyholder view	75%	Kappa	0.95
policyholder view	90%	Kappa	1.00
policyholder view	95%	Kappa	1.05
company view	50%	Kappa	1.25
company view	65%	Kappa	1.64

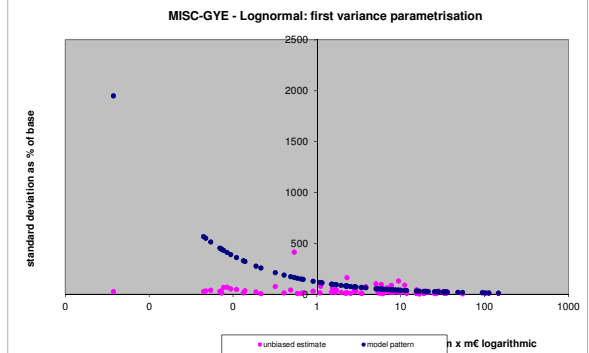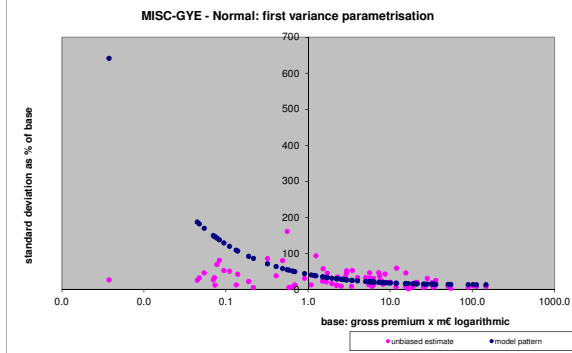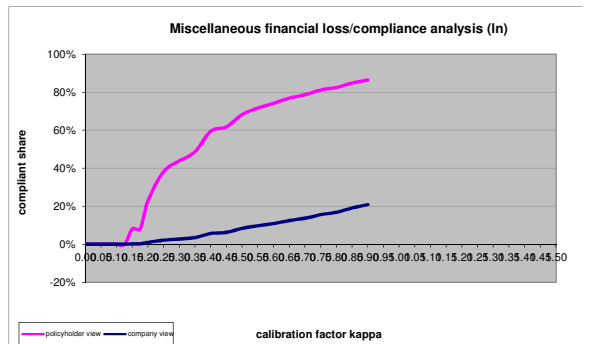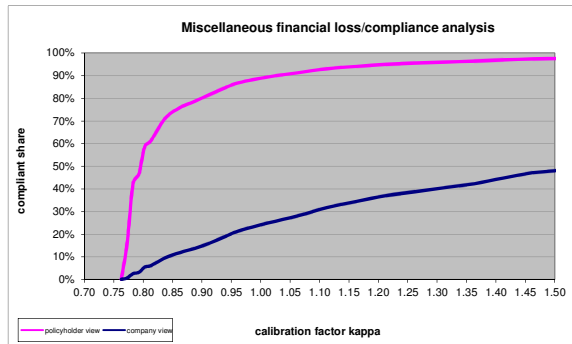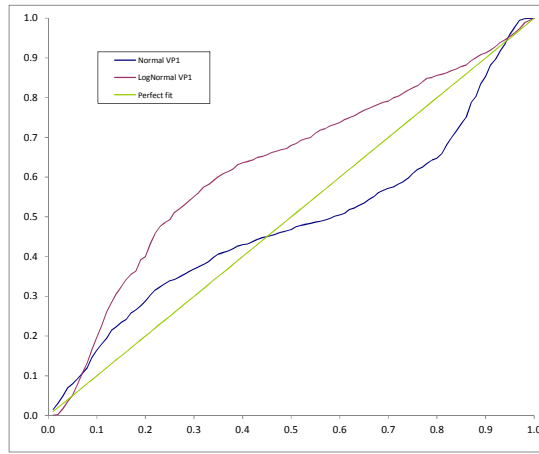|	Population average implied kappa		0.94
policyholder view	50%	Kappa	0.87
policyholder view	75%	Kappa	0.90
policyholder view	90%	Kappa	0.99
policyholder view	95%	Kappa	1.10
company view	50%	Kappa	1.42
company view	65%	Kappa	2.16

Miscellaneous financial loss - Gross year end loss concept

Miscellaneous financial loss				Gross year end loss concept		MISC-GYE
cfuesd	1.068	minimum	maximum	threshold		unbiased sigma
cvuesd	0.028	-6.17	19.39	3.00		0.478
mean x	15					Normal
Minimise	1.058	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.000	91	738	0.03	1.00	10.5	200.3
sigma	0.447					

cfuesd	1.064	minimum	maximum	threshold		unbiased sigma
cvuesd	0.028	-4.86	6.66	2.98		0.208
mean x	15					Normal
Minimise	0.224	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.112	82	703	0.03	1.00	2.2	14.7
sigma	0.195					

Miscellaneous financial loss				Gross year end loss concept		MISC-GYE
cfuesd	1.068	minimum	maximum	threshold		unbiased sigma
cvuesd	0.028	-15.96	3.82	3.00		1.006
mean x	15					Lognormal
Minimise	1.224	specific	sample		standard	
ln(sigma)	-0.060	parameters	size	mean	deviation	skewness	kurtosis
delta	0.000	91	738	0.68	1.22	-2.8	42.4
sigma	0.942					

cfuesd	1.064	minimum	maximum	threshold		unbiased sigma
cvuesd	0.028	-8.96	3.34	2.99		0.441
mean x	15					Lognormal
Minimise	0.770	specific	sample		standard	
ln(sigma)	-0.881	parameters	size	mean	deviation	skewness	kurtosis
delta	0.000	82	706	0.44	1.14	-1.2	12.8
sigma	0.414					

cfuesd	1.065	minimum	maximum	threshold		unbiased sigma
cvuesd	0.029	-3.98	5.57	2.97		0.154
mean x	15					Normal
Minimise	-0.223	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.581	80	679	0.01	1.00	1.3	8.6
sigma	0.145					

cfuesd	1.065	minimum	maximum	threshold		unbiased sigma
cvuesd	0.029	-5.19	4.02	2.98		0.302
mean x	16					Lognormal
Minimise	0.531	specific	sample		standard	
ln(sigma)	-1.259	parameters	size	mean	deviation	skewness	kurtosis
delta	0.000	81	693	0.35	1.10	-0.3	5.1
sigma	0.284					

MISC-GYE - Normal: first variance parametrisation

MISC-GYE - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	28.43	23.19
model pattern	51.93	24.29

Miscellaneous financial loss/compliance analysis

Miscellaneous financial loss/compliance analysis (ln)

Population average implied kappa		0.93
policyholder view	50%	Kappa	0.80
policyholder view	75%	Kappa	0.86
policyholder view	90%	Kappa	1.03
policyholder view	95%	Kappa	1.22
company view	50%	Kappa	1.56
company view	65%	Kappa	2.50

Population average implied kappa		0.83
policyholder view	50%	Kappa	0.36
policyholder view	75%	Kappa	0.62
policyholder view	90%	Kappa	1.48
policyholder view	95%	Kappa	1.00
company view	50%	Kappa	2.36
company view	65%	Kappa	3.10
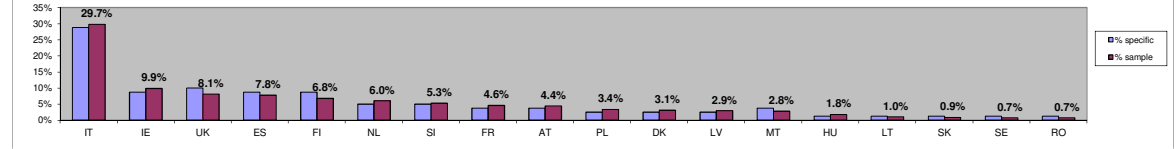
Workers' compensation - Gross year end loss concept

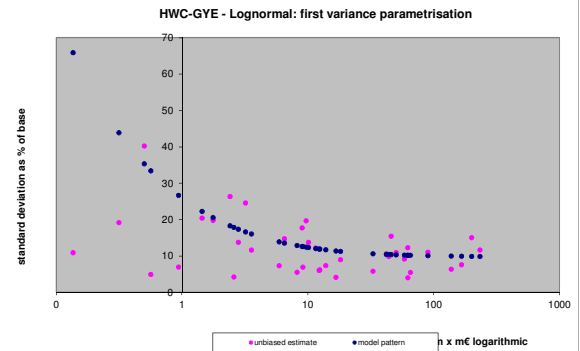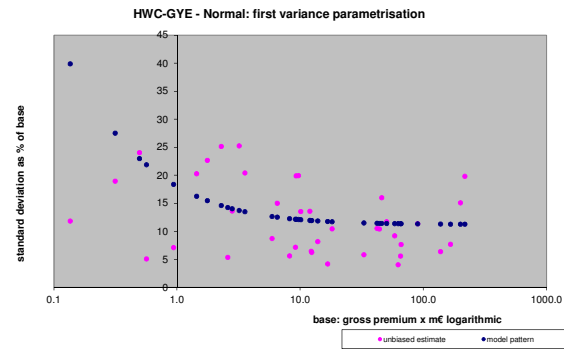| Workers' compensation				Gross year end loss concept			HWC-GYE
cfuesd	1.056	minimum	maximum	threshold			unbiased sigma
cvuesd	0.037	-4.37	4.50	2.82			0.178
mean x	37						Normal
Minimise	**0.712**	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.977	42	412	-0.01	1.00	1.0	7.3
sigma	0.168						
cfuesd	1.055	minimum	maximum	threshold			unbiased sigma
cvuesd	0.038	-3.54	3.76	2.80			0.136
mean x	36						Normal
Minimise	**0.482**	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.974	39	391	-0.01	1.00	0.4	5.0
sigma	0.129						

Workers' compensation				Gross year end loss concept			HWC-GYE
cfuesd	1.056	minimum	maximum	threshold			unbiased sigma
cvuesd	0.037	-8.61	3.50	2.82			0.178
mean x	37						Lognormal
Minimise	**-0.758**	specific	sample		standard		
ln(sigma)	-1.782	parameters	size	mean	deviation	skewness	kurtosis
delta	0.866	42	412	0.06	1.01	-2.1	22.7
sigma	0.168						
cfuesd	1.054	minimum	maximum	threshold			unbiased sigma
cvuesd	0.037	-4.19	3.69	2.80			0.139
mean x	35						Lognormal
Minimise	**-1.068**	specific	sample		standard		
ln(sigma)	-2.027	parameters	size	mean	deviation	skewness	kurtosis
delta	0.915	39	396	0.02	1.00	0.0	5.8
sigma	0.132						

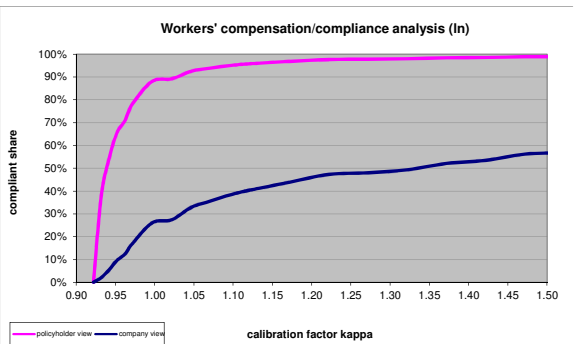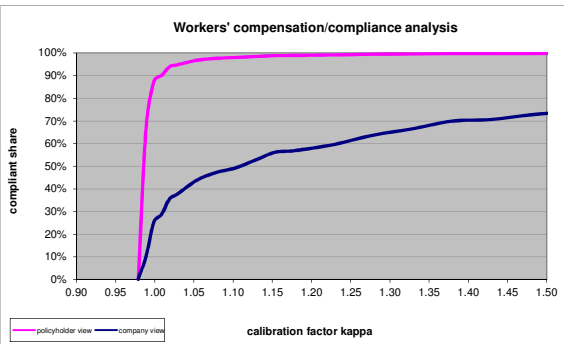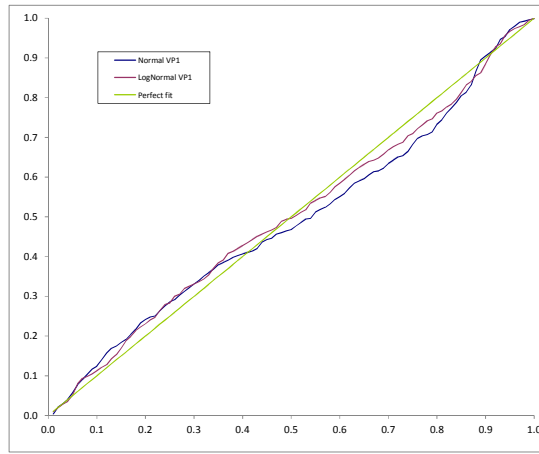|							
cfuesd	1.056	minimum	maximum	threshold			unbiased sigma
cvuesd	0.038	-3.31	3.08	2.79			0.114
mean x	36						Normal
Minimise	**0.347**	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.958	39	383	-0.01	1.00	0.2	4.0
sigma	0.108						

cfuesd	1.055	minimum	maximum	threshold			unbiased sigma
cvuesd	0.038	-3.14	3.44	2.80			0.105
mean x	35						Lognormal
Minimise	**-1.263**	specific	sample		standard		
ln(sigma)	-2.308	parameters	size	mean	deviation	skewness	kurtosis
delta	0.850	39	386	0.01	1.00	0.2	3.8
sigma	0.099						

HWC-GYE - Normal: first variance parametrisation

HWC-GYE - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	12.27	10.46
model pattern	14.03	11.90

Workers' compensation/compliance analysis

Workers' compensation/compliance analysis (ln)

	Population average implied kappa		1.00
policyholder view	50%	Kappa	0.99
policyholder view	75%	Kappa	0.99
policyholder view	90%	Kappa	1.01
policyholder view	95%	Kappa	1.03
company view	50%	Kappa	1.11
company view	65%	Kappa	1.30

	Population average implied kappa		0.99
policyholder view	50%	Kappa	0.94
policyholder view	75%	Kappa	0.97
policyholder view	90%	Kappa	1.03
policyholder view	95%	Kappa	1.10
company view	50%	Kappa	1.33
company view	65%	Kappa	1.88

Motor other - Gross current estimate loss concept

Motor other				Gross current estimate loss concept		MO-GCE		Motor other				Gross current estimate loss concept		MO-GCE
cfuesd	1.050	minimum	maximum	threshold		unbiased sigma		cfuesd	1.050	minimum	maximum	threshold		unbiased sigma
cvuesd	0.014	-5.09	10.71	3.38		0.103		cvuesd	0.014	-8.21	6.77	3.38		0.103
mean x	87					Normal		mean x	87					Lognormal
Minimise	1.190	specific	sample		standard			Minimise	-1.207	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis	ln(sigma)	-2.324	parameters	size	mean	deviation	skewness	kurtosis
delta	0.892	255	2733	0.01	1.00	1.7	16.3	delta	0.907	255	2733	0.03	1.01	-0.2	9.0
sigma	0.098							sigma	0.098						
cfuesd	1.049	minimum	maximum	threshold		unbiased sigma		cfuesd	1.049	minimum	maximum	threshold		unbiased sigma
cvuesd	0.014	-3.99	3.92	3.37		0.095		cvuesd	0.014	-4.52	3.75	3.37		0.095
mean x	87					Normal		mean x	88					Lognormal
Minimise	1.054	specific	sample		standard			Minimise	-1.327	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis	ln(sigma)	-2.405	parameters	size	mean	deviation	skewness	kurtosis
delta	0.939	246	2685	0.01	1.00	0.5	4.0	delta	0.936	246	2684	0.02	1.00	0.0	3.8
sigma	0.091							sigma	0.090						

cfuesd	1.049	minimum	maximum	threshold		unbiased sigma		cfuesd	1.050	minimum	maximum	threshold		unbiased sigma
cvuesd	0.014	-3.49	3.67	3.37		0.094		cvuesd	0.014	-4.54	3.36	3.37		0.095
mean x	88					Normal		mean x	88					Lognormal
Minimise	1.022	specific	sample		standard			Minimise	-1.360	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis	ln(sigma)	-2.402	parameters	size	mean	deviation	skewness	kurtosis
delta	0.952	245	2668	0.00	1.00	0.4	3.6	delta	0.955	246	2673	0.02	1.00	0.2	3.4
sigma	0.089							sigma	0.091						

MO-GCE - Normal: first variance parametrisation

MO-GCE - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	10.58	9.38
model pattern	12.19	9.82

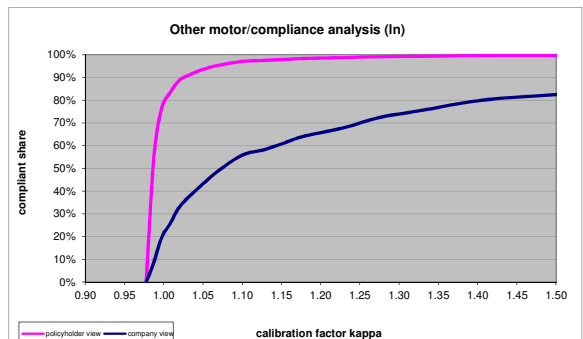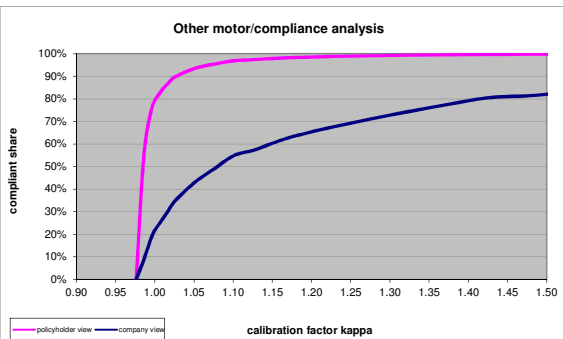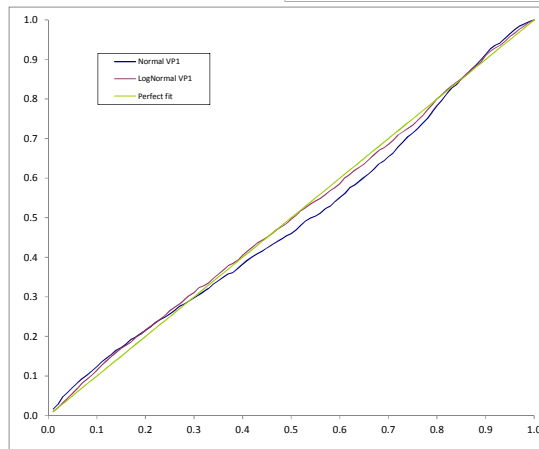Normal VP1 / LogNormal VP1 / Perfect fit

Other motor/compliance analysis

Other motor/compliance analysis (ln)

	Population average implied kappa		1.00
policyholder view	50%	Kappa	0.99
policyholder view	75%	Kappa	1.00
policyholder view	90%	Kappa	1.03
policyholder view	95%	Kappa	1.07
company view	50%	Kappa	1.08
company view	65%	Kappa	1.20

	Population average implied kappa		1.00
policyholder view	50%	Kappa	0.99
policyholder view	75%	Kappa	1.00
policyholder view	90%	Kappa	1.03
policyholder view	95%	Kappa	1.07
company view	50%	Kappa	1.07
company view	65%	Kappa	1.19

Motor third party liability - Gross current estimate loss concept

Left panel (Normal)

Motor third party liability				Gross current estimate loss concept		MTPL-GCE
cfuesd	1.047	minimum	maximum	threshold		unbiased sigma
cvuesd	0.014	-5.98	6.75	3.40		0.119
mean x	145					Normal
Minimise	1.901	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.930	261	2995	0.01	1.00	0.5	7.6
sigma	0.114						

cfuesd	1.046	minimum	maximum	threshold		unbiased sigma
cvuesd	0.014	-3.81	3.77	3.40		0.105
mean x	145					Normal
Minimise	1.795	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.924	251	2936	0.01	1.00	0.5	4.0
sigma	0.100						

cfuesd	1.046	minimum	maximum	threshold		unbiased sigma
cvuesd	0.014	-3.75	3.75	3.40		0.102
mean x	145					Normal
Minimise	1.771	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.922	251	2927	0.01	1.00	0.5	3.8
sigma	0.098						

Right panel (Lognormal)

Motor third party liability				Gross current estimate loss concept		MTPL-GCE
cfuesd	1.047	minimum	maximum	threshold		unbiased sigma
cvuesd	0.014	-8.73	4.94	3.40		0.125
mean x	145					Lognormal
Minimise	-1.237	specific	sample		standard	
ln(sigma)	-2.124	parameters	size	mean	deviation	skewness	kurtosis
delta	0.947	261	2995	0.03	1.00	-0.9	11.4
sigma	0.120						

cfuesd	1.046	minimum	maximum	threshold		unbiased sigma
cvuesd	0.014	-4.38	3.60	3.40		0.104
mean x	145					Lognormal
Minimise	-1.371	specific	sample		standard	
ln(sigma)	-2.310	parameters	size	mean	deviation	skewness	kurtosis
delta	0.910	251	2941	0.02	1.00	0.0	3.9
sigma	0.099						

cfuesd	1.046	minimum	maximum	threshold		unbiased sigma
cvuesd	0.014	-3.47	3.77	3.40		0.101
mean x	145					Lognormal
Minimise	-1.398	specific	sample		standard	
ln(sigma)	-2.342	parameters	size	mean	deviation	skewness	kurtosis
delta	0.907	251	2930	0.02	1.00	0.1	3.5
sigma	0.096						

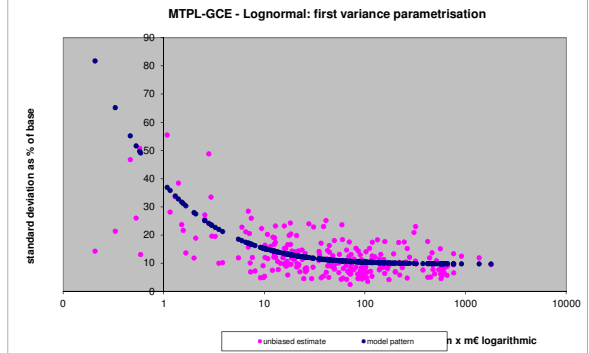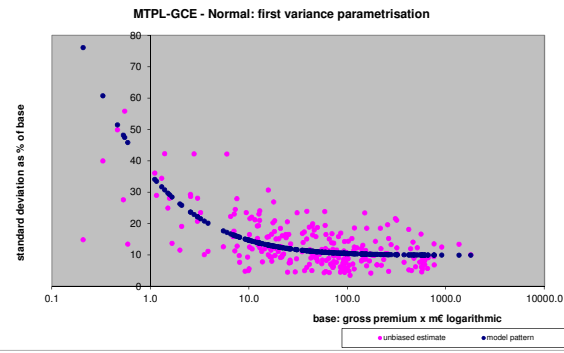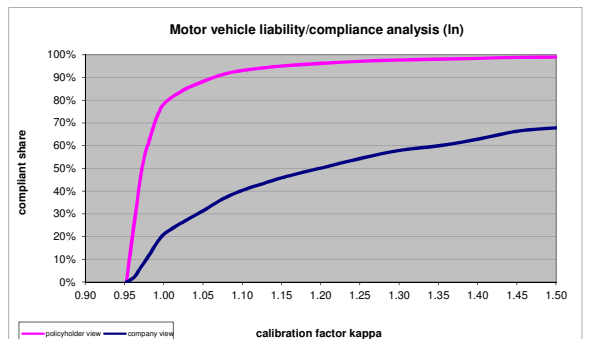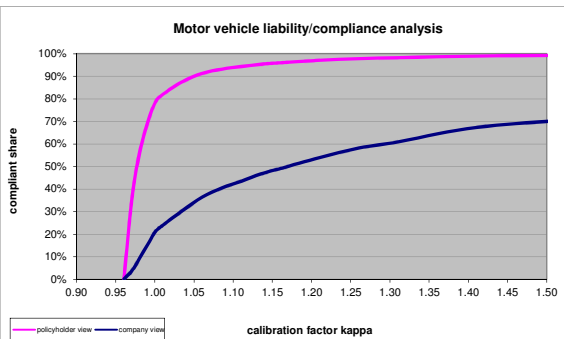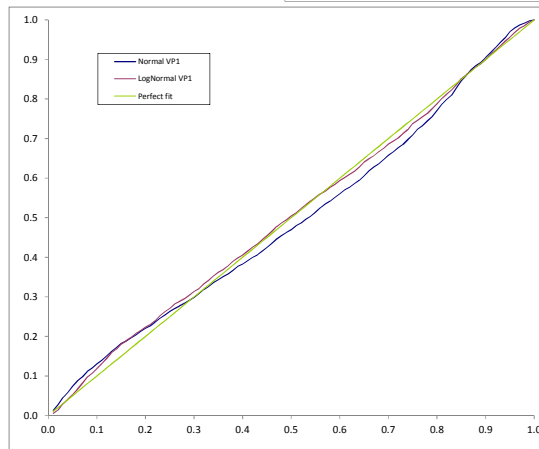MTPL-GCE - Normal: first variance parametrisation

MTPL-GCE - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	13.39	11.39
model pattern	13.51	10.85

Legend: Normal VP1, LogNormal VP1, Perfect fit

Motor vehicle liability/compliance analysis

Population average implied kappa			1.01
policyholder view	50%	Kappa	0.98
policyholder view	75%	Kappa	1.00
policyholder view	90%	Kappa	1.05
policyholder view	95%	Kappa	1.13
company view	50%	Kappa	1.17
company view	65%	Kappa	1.37

Motor vehicle liability/compliance analysis (ln)

Population average implied kappa			1.02
policyholder view	50%	Kappa	0.97
policyholder view	75%	Kappa	0.99
policyholder view	90%	Kappa	1.06
policyholder view	95%	Kappa	1.15
company view	50%	Kappa	1.20
company view	65%	Kappa	1.43

Country bar chart (% specific / % sample): DE 36.8% (26%), IT 9.9%, UK 6.7%, NL 4.6%, ES 4.6%, BE 4.5%, DK 3.6%, FR 3.6%, AT 3.2%, HU 2.6%, IE 2.4%, NO 2.3%, MT 1.9%, SI 1.8%, LU 1.7%, PT 1.7%, SE 1.5%, FI 1.5%, RO 1.3%, IS 0.9%, LV 0.8%, LT 0.8%, PL 0.4%, BG 0.3%, SK 0.3%, CZ 0.2%
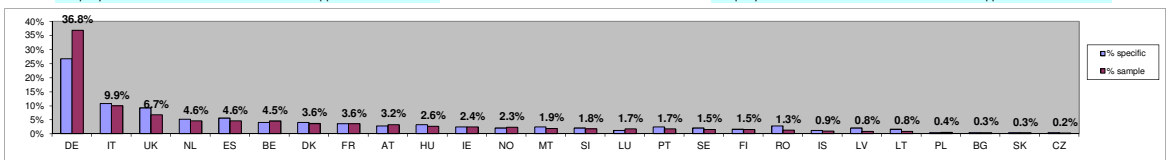
Fire and other damage to property - Gross current estimate loss concept

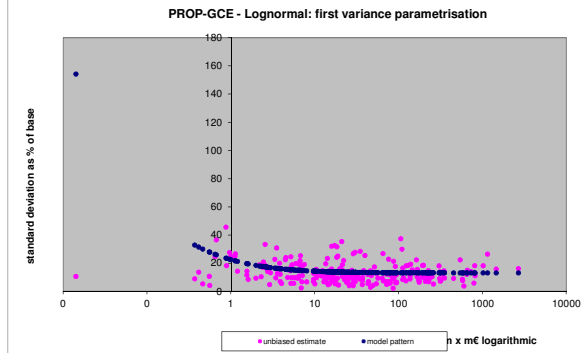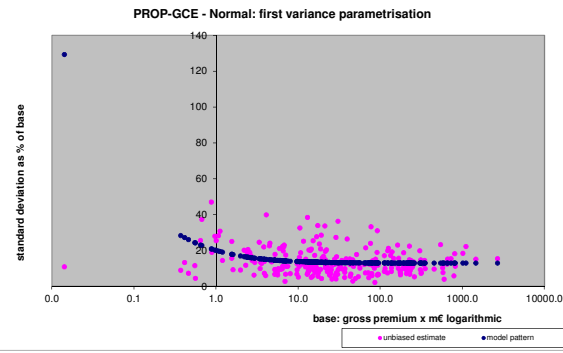| Fire and other damage to property				Gross current estimate loss concept			_PROP-GCE_
cfuesd	1.051	minimum	maximum	threshold			unbiased sigma
cvuesd	0.014	-3.82	19.98	3.39			0.222
mean x	120						Normal
Minimise	1.884	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.992	270	2840	0.00	1.00	5.4	79.8
sigma	0.211						

Fire and other damage to property				Gross current estimate loss concept			_PROP-GCE_
cfuesd	1.051	minimum	maximum	threshold			unbiased sigma
cvuesd	0.014	-7.48	8.40	3.39			0.204
mean x	120						Lognormal
Minimise	-0.536	specific	sample		standard		
ln(sigma)	-1.642	parameters	size	mean	deviation	skewness	kurtosis
delta	0.986	270	2840	0.05	1.00	-1.0	15.5
sigma	0.194						

cfuesd	1.051	minimum	maximum	threshold			unbiased sigma
cvuesd	0.014	-4.26	6.07	3.38			0.148
mean x	120						Normal
Minimise	1.513	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.987	261	2786	0.00	1.00	1.1	7.7
sigma	0.141						

cfuesd	1.050	minimum	maximum	threshold			unbiased sigma
cvuesd	0.014	-5.55	4.35	3.38			0.147
mean x	121						Lognormal
Minimise	-0.818	specific	sample		standard		
ln(sigma)	-1.969	parameters	size	mean	deviation	skewness	kurtosis
delta	0.983	259	2766	0.03	1.00	0.0	6.2
sigma	0.140						

cfuesd	1.051	minimum	maximum	threshold			unbiased sigma
cvuesd	0.014	-4.06	3.94	3.38			0.129
mean x	121						Normal
Minimise	1.376	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.988	261	2751	0.00	1.00	0.7	4.8
sigma	0.123						

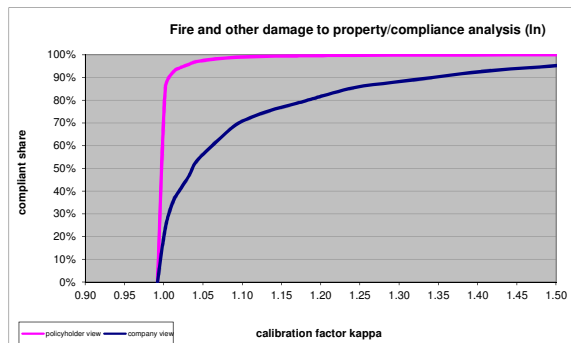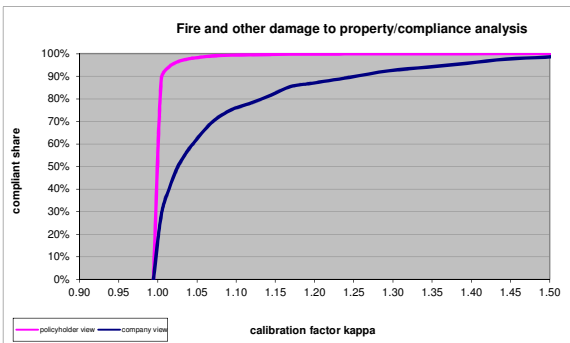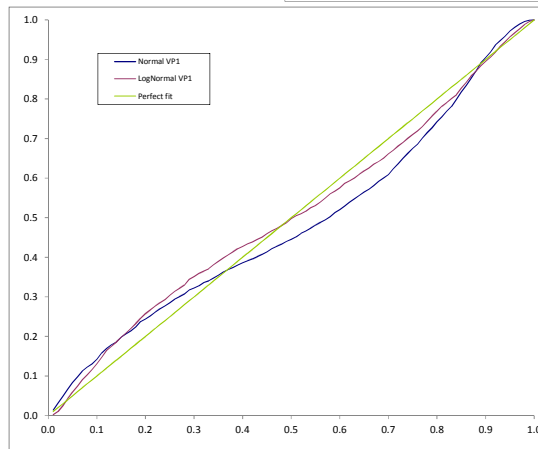| cfuesd	1.051	minimum	maximum	threshold			unbiased sigma
cvuesd	0.014	-4.53	3.63	3.38			0.130
mean x	122						Lognormal
Minimise	-0.926	specific	sample		standard		
ln(sigma)	-2.092	parameters	size	mean	deviation	skewness	kurtosis
delta	0.984	258	2732	0.02	1.00	0.0	4.6
sigma	0.123						

PROP-GCE - Normal: first variance parametrisation

PROP-GCE - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	13.51	11.85
model pattern	14.42	13.21

Legend: Normal VP1; LogNormal VP1; Perfect fit

Fire and other damage to property/compliance analysis

Fire and other damage to property/compliance analysis (ln)

Population average implied kappa			1.00
policyholder view	50%	Kappa	1.00
policyholder view	75%	Kappa	1.00
policyholder view	90%	Kappa	1.01
policyholder view	95%	Kappa	1.02
company view	50%	Kappa	1.03
company view	65%	Kappa	1.06

Population average implied kappa			1.00
policyholder view	50%	Kappa	1.00
policyholder view	75%	Kappa	1.00
policyholder view	90%	Kappa	1.01
policyholder view	95%	Kappa	1.03
company view	50%	Kappa	1.04
company view	65%	Kappa	1.08

General liability - Gross current estimate loss concept

General liability				Gross current estimate loss concept		LIAB-GCE
cfuesd	1.049	minimum	maximum	threshold		unbiased sigma
cvuesd	0.014	-5.43	30.78	3.40		0.264
mean x	51					Normal
Minimise	0.976	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.997	273	3009	0.00	1.00	11.2	316.8
sigma	0.252					

General liability				Gross current estimate loss concept		LIAB-GCE
cfuesd	1.049	minimum	maximum	threshold		unbiased sigma
cvuesd	0.014	-17.51	10.65	3.40		0.263
mean x	51					Lognormal
Minimise	-0.247	specific	sample		standard	
ln(sigma)	-1.382	parameters	size	mean	deviation	skewness	kurtosis
delta	0.993	273	3009	0.13	1.01	-4.2	74.2
sigma	0.251					

cfuesd	1.048	minimum	maximum	threshold		unbiased sigma
cvuesd	0.014	-4.24	5.94	3.40		0.171
mean x	51					Normal
Minimise	0.558	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.996	263	2956	0.00	1.00	1.1	8.0
sigma	0.163					

cfuesd	1.048	minimum	maximum	threshold		unbiased sigma
cvuesd	0.014	-5.90	4.55	3.40		0.175
mean x	51					Lognormal
Minimise	-0.601	specific	sample		standard	
ln(sigma)	-1.792	parameters	size	mean	deviation	skewness	kurtosis
delta	0.992	262	2951	0.06	1.00	-0.4	6.6
sigma	0.167					

cfuesd	1.049	minimum	maximum	threshold		unbiased sigma
cvuesd	0.014	-3.59	4.49	3.39		0.144
mean x	52					Normal
Minimise	0.387	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.996	263	2911	0.00	1.00	0.7	5.5
sigma	0.137					

cfuesd	1.048	minimum	maximum	threshold		unbiased sigma
cvuesd	0.014	-4.75	3.77	3.40		0.157
mean x	51					Lognormal
Minimise	-0.694	specific	sample		standard	
ln(sigma)	-1.898	parameters	size	mean	deviation	skewness	kurtosis
delta	0.992	262	2916	0.05	1.00	-0.2	5.3
sigma	0.150					

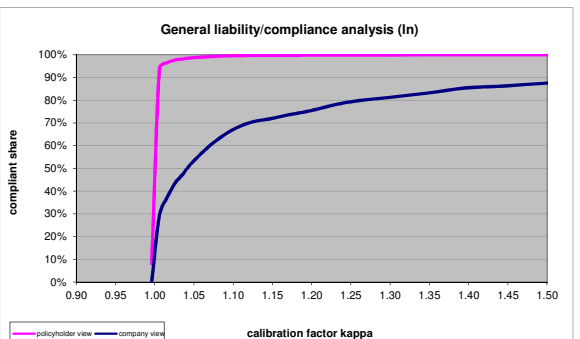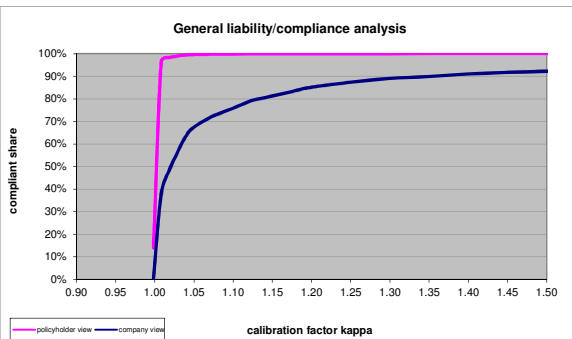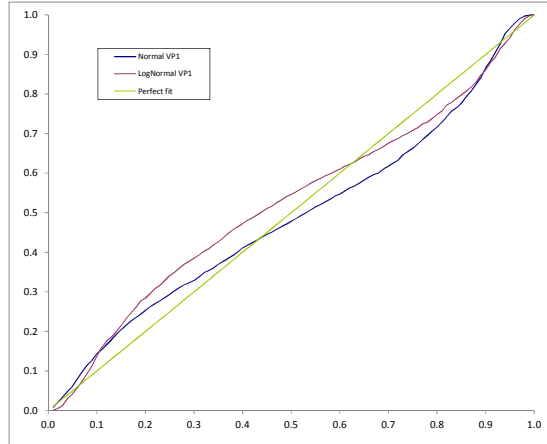LIAB-GCE - Normal: first variance parametrisation

LIAB-GCE - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	14.14	11.18
model pattern	15.98	14.46

General liability/compliance analysis

General liability/compliance analysis (ln)

Population average implied kappa   1.00

policyholder view	50%	Kappa	1.00
policyholder view	75%	Kappa	1.01
policyholder view	90%	Kappa	1.01
policyholder view	95%	Kappa	1.01
company view	50%	Kappa	1.02
company view	65%	Kappa	1.04

Population average implied kappa   1.00

policyholder view	50%	Kappa	1.00
policyholder view	75%	Kappa	1.00
policyholder view	90%	Kappa	1.01
policyholder view	95%	Kappa	1.01
company view	50%	Kappa	1.04
company view	65%	Kappa	1.09

DE 38.4% · IT 9.3% · UK 5.2% · NL 5.2% · ES 4.2% · IE 4.1% · DK 3.6% · FR 3.3% · AT 3.1% · BE 3.0% · NO 2.7% · LU 2.0% · SI 2.0% · FI 1.8% · HU 1.8% · SE 1.7% · MT 1.3% · RO 1.1% · LV 1.1% · PL 1.1% · IS 0.9% · LT 0.9% · PT 0.8% · SK 0.7% · BG 0.3% · CZ 0.2%

Medical expense - Gross current estimate loss concept

Medical expense				Gross current estimate loss concept		_HME-GCE_
cfuesd	1.061	minimum	maximum	threshold		unbiased sigma
cvuesd	0.019	-4.44	11.96	3.23		0.105
mean x	80					Normal
Minimise	0.141	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.960	181	1625	0.00	1.00	2.0	22.8
sigma	0.099					

Medical expense				Gross current estimate loss concept		_HME-GCE_
cfuesd	1.061	minimum	maximum	threshold		unbiased sigma
cvuesd	0.019	-6.68	6.69	3.23		0.098
mean x	80					Lognormal
Minimise	-0.886	specific	sample		standard	
ln(sigma)	-2.381	parameters	size	mean	deviation	skewness	kurtosis
delta	0.916	181	1625	0.06	1.01	-0.9	11.0
sigma	0.092					

cfuesd	1.056	minimum	maximum	threshold		unbiased sigma
cvuesd	0.019	-4.14	4.49	3.22		0.079
mean x	56					Normal
Minimise	-0.149	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.925	159	1546	0.00	1.00	0.2	4.8
sigma	0.075					

cfuesd	1.056	minimum	maximum	threshold		unbiased sigma
cvuesd	0.019	-4.44	3.82	3.22		0.073
mean x	56					Lognormal
Minimise	-1.102	specific	sample		standard	
ln(sigma)	-2.666	parameters	size	mean	deviation	skewness	kurtosis
delta	0.843	159	1538	0.06	1.01	-0.4	4.6
sigma	0.070					

cfuesd	1.056	minimum	maximum	threshold		unbiased sigma
cvuesd	0.019	-3.47	3.82	3.22		0.075
mean x	57					Normal
Minimise	-0.211	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.927	159	1533	0.00	1.00	0.2	4.2
sigma	0.071					

cfuesd	1.057	minimum	maximum	threshold		unbiased sigma
cvuesd	0.019	-3.90	3.46	3.21		0.071
mean x	56					Lognormal
Minimise	-1.162	specific	sample		standard	
ln(sigma)	-2.699	parameters	size	mean	deviation	skewness	kurtosis
delta	0.866	159	1525	0.05	1.01	-0.3	4.0
sigma	0.067					

HME-GCE - Normal: first variance parametrisation

HME-GCE - Lognormal: first variance parametrisation
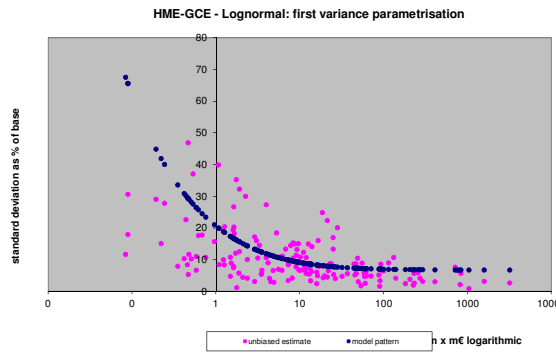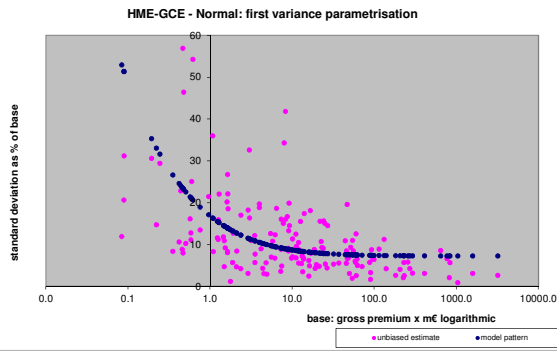
	mean	median
unbiased estimate	11.31	8.76
model pattern	11.80	8.74

Medical expenses (initial)/compliance analysis
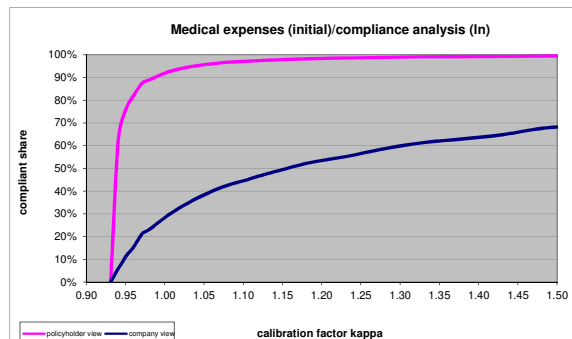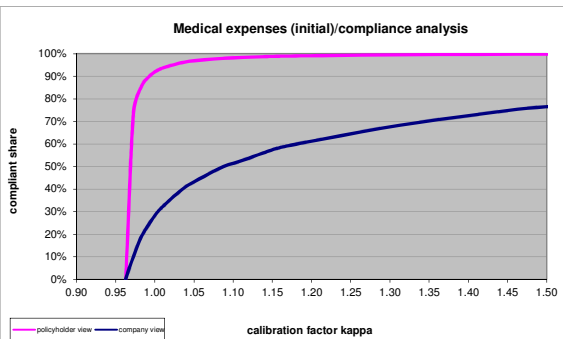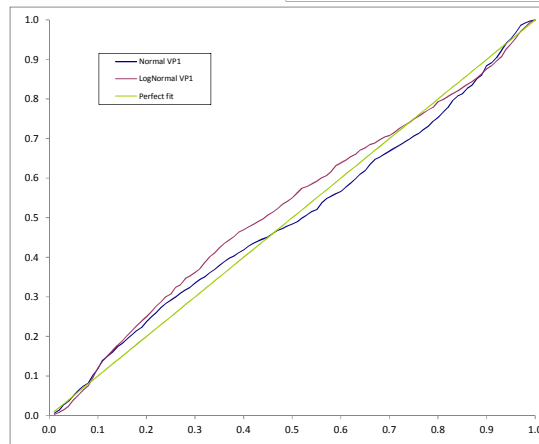

Medical expenses (initial)/compliance analysis (ln)

Population average implied kappa		0.98
policyholder view	50%	Kappa	0.97
policyholder view	75%	Kappa	0.97
policyholder view	90%	Kappa	0.99
policyholder view	95%	Kappa	1.02
company view	50%	Kappa	1.09
company view	65%	Kappa	1.26

Population average implied kappa		0.96
policyholder view	50%	Kappa	0.94
policyholder view	75%	Kappa	0.95
policyholder view	90%	Kappa	0.99
policyholder view	95%	Kappa	1.04
company view	50%	Kappa	1.16
company view	65%	Kappa	1.43
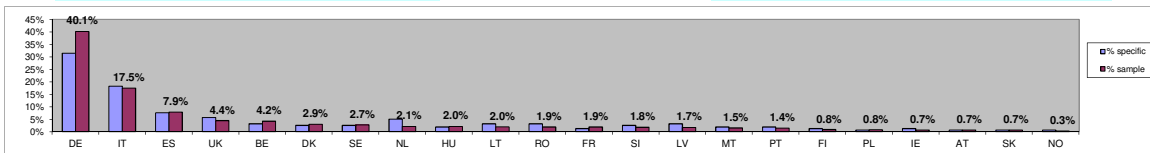
Income protection - Gross current estimate loss concept

Income protection				Gross current estimate loss concept		*HIP-GCE*
cfuesd	1.048	minimum	maximum	threshold		unbiased sigma
cvuesd	0.016	-6.83	11.16	3.32		0.115
mean x	43					Normal
Minimise	**0.321**	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.947	200	2226	0.01	1.00	1.5	21.8
sigma	0.110						
cfuesd	1.048	minimum	maximum	threshold		unbiased sigma
cvuesd	0.016	-4.24	4.61	3.31		0.087
mean x	41					Normal
Minimise	**0.061**	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.930	192	2170	0.01	1.00	0.5	5.8
sigma	0.083						

Income protection				Gross current estimate loss concept		*HIP-GCE*
cfuesd	1.048	minimum	maximum	threshold		unbiased sigma
cvuesd	0.016	-14.74	7.62	3.32		0.113
mean x	43					Lognormal
Minimise	**-0.504**	specific	sample		standard	
ln(sigma)	-2.231	parameters	size	mean	deviation	skewness	kurtosis
delta	0.809	200	2226	0.11	1.01	-2.8	44.3
sigma	0.107						
cfuesd	1.047	minimum	maximum	threshold		unbiased sigma
cvuesd	0.016	-5.06	3.92	3.31		0.091
mean x	40					Lognormal
Minimise	**-0.764**	specific	sample		standard	
ln(sigma)	-2.444	parameters	size	mean	deviation	skewness	kurtosis
delta	0.877	192	2179	0.06	1.01	-0.5	6.2
sigma	0.087						

cfuesd	1.048	minimum	maximum	threshold		unbiased sigma
cvuesd	0.016	-3.43	4.12	3.31		0.077
mean x	41					Normal
Minimise	**-0.045**	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.919	192	2144	0.01	1.00	0.4	4.6
sigma	0.073						

cfuesd	1.048	minimum	maximum	threshold		unbiased sigma
cvuesd	0.016	-4.45	3.85	3.31		0.082
mean x	40					Lognormal
Minimise	**-0.857**	specific	sample		standard	
ln(sigma)	-2.543	parameters	size	mean	deviation	skewness	kurtosis
delta	0.879	192	2154	0.06	1.01	-0.3	5.1
sigma	0.079						

HIP-GCE - Normal: first variance parametrisation

HIP-GCE - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	10.52	7.61
model pattern	12.90	8.70
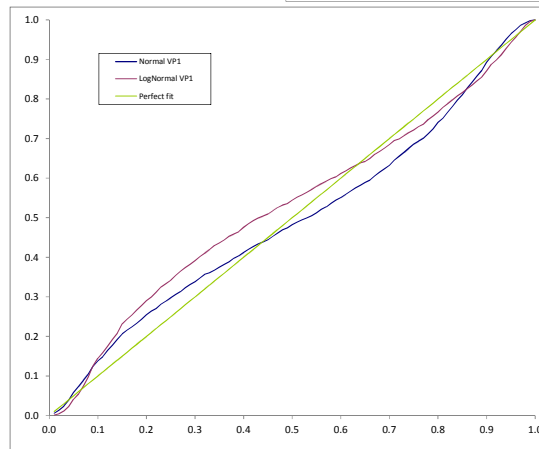
Income protection/compliance analysis

Income protection/compliance analysis (ln)

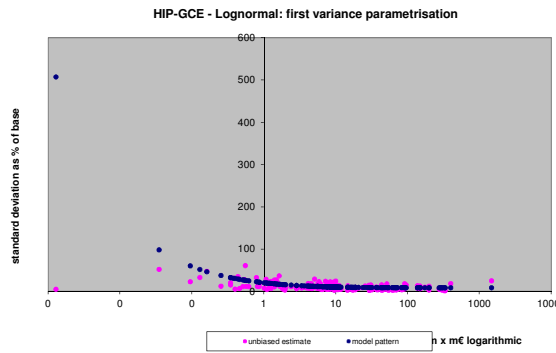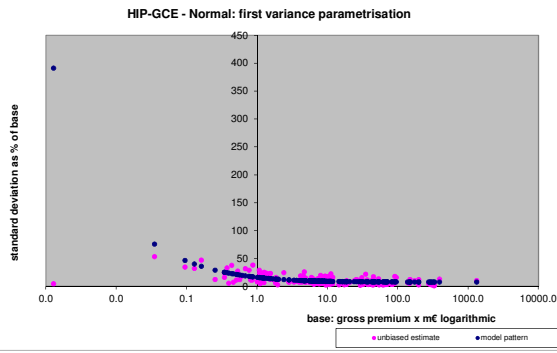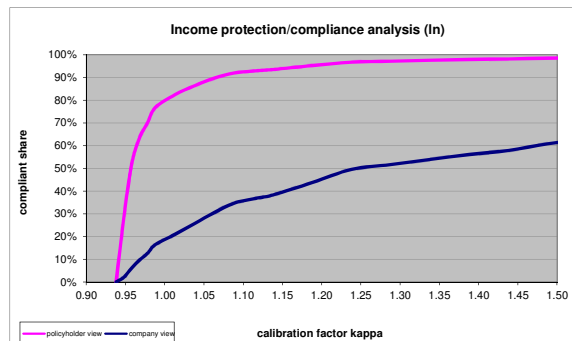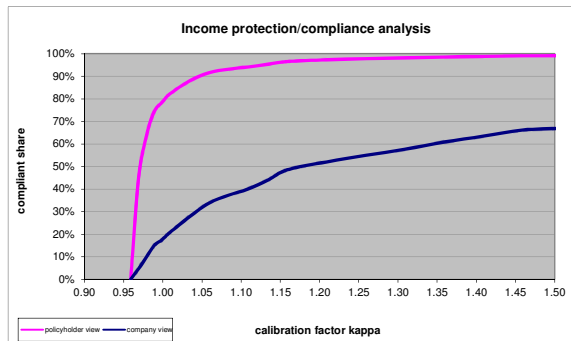| Population average implied kappa			1.01
policyholder view	50%	Kappa	0.97
policyholder view	75%	Kappa	0.99
policyholder view	90%	Kappa	1.05
policyholder view	95%	Kappa	1.13
company view	50%	Kappa	1.18
company view	65%	Kappa	1.44

Population average implied kappa			1.01
policyholder view	50%	Kappa	0.96
policyholder view	75%	Kappa	0.99
policyholder view	90%	Kappa	1.07
policyholder view	95%	Kappa	1.18
company view	50%	Kappa	1.25
company view	65%	Kappa	1.61

Marine, aviation and transport - Gross current estimate loss concept

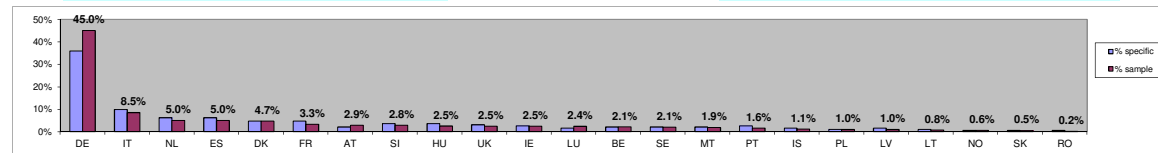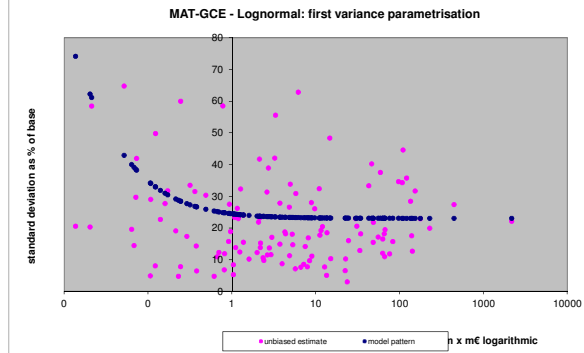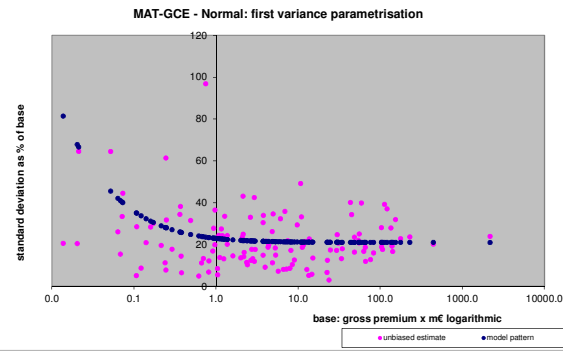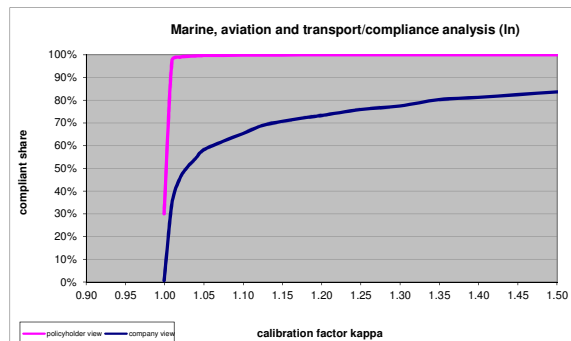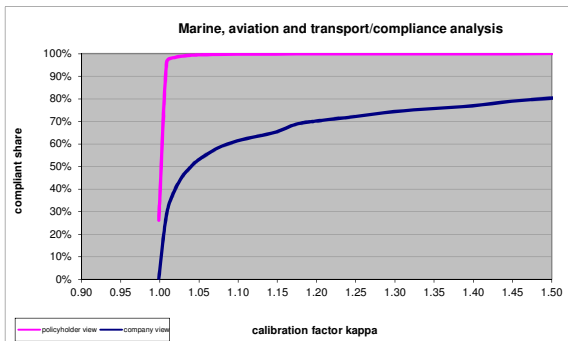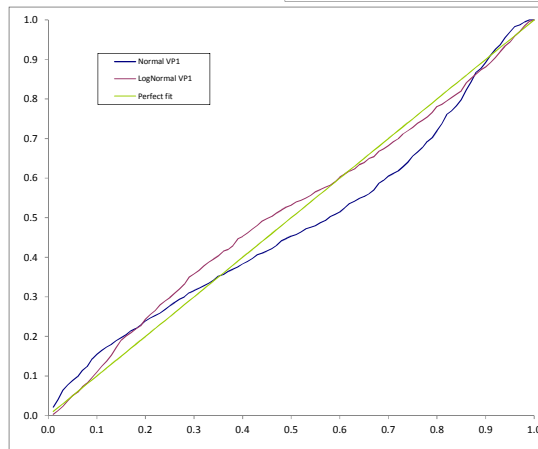| Marine, aviation and transport				Gross current estimate loss concept			MAT-GCE
cfuesd	1.055	minimum	maximum	threshold			unbiased sigma
cvuesd	0.021	-2.19	27.33	3.17			0.331
mean x	61						Normal
Minimise	1.509	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.541	133	1307	0.03	1.00	16.8	434.4
sigma	0.314						
cfuesd	1.055	minimum	maximum	threshold			unbiased sigma
cvuesd	0.021	-2.74	13.15	3.16			0.260
mean x	62						Normal
Minimise	0.483	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.986	129	1286	0.01	1.00	3.6	34.7
sigma	0.247						

Marine, aviation and transport				Gross current estimate loss concept			MAT-GCE
cfuesd	1.055	minimum	maximum	threshold			unbiased sigma
cvuesd	0.021	-5.44	9.12	3.17			0.364
mean x	61						Lognormal
Minimise	-0.040	specific	sample		standard		
ln(sigma)	-1.064	parameters	size	mean	deviation	skewness	kurtosis
delta	0.999	133	1307	0.12	1.03	0.2	12.3
sigma	0.345						
cfuesd	1.055	minimum	maximum	threshold			unbiased sigma
cvuesd	0.021	-4.88	3.89	3.16			0.272
mean x	63						Lognormal
Minimise	-0.290	specific	sample		standard		
ln(sigma)	-1.355	parameters	size	mean	deviation	skewness	kurtosis
delta	0.998	127	1263	0.05	1.01	-0.5	6.2
sigma	0.258						

cfuesd	1.055	minimum	maximum	threshold			unbiased sigma
cvuesd	0.021	-3.50	5.79	3.16			0.209
mean x	62						Normal
Minimise	0.120	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.997	129	1269	0.00	1.00	1.2	6.5
sigma	0.198						

cfuesd	1.055	minimum	maximum	threshold			unbiased sigma
cvuesd	0.021	-4.42	3.59	3.15			0.230
mean x	64						Lognormal
Minimise	-0.434	specific	sample		standard		
ln(sigma)	-1.524	parameters	size	mean	deviation	skewness	kurtosis
delta	0.998	125	1238	0.03	1.00	-0.1	4.2
sigma	0.218						

MAT-GCE - Normal: first variance parametrisation

MAT-GCE - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	21.97	19.42
model pattern	24.44	21.38

Marine, aviation and transport/compliance analysis

Marine, aviation and transport/compliance analysis (ln)

Population average implied kappa			1.00
policyholder view	50%	Kappa	1.00
policyholder view	75%	Kappa	1.01
policyholder view	90%	Kappa	1.01
policyholder view	95%	Kappa	1.01
company view	50%	Kappa	1.04
company view	65%	Kappa	1.15

Population average implied kappa			1.00
policyholder view	50%	Kappa	1.00
policyholder view	75%	Kappa	1.01
policyholder view	90%	Kappa	1.01
policyholder view	95%	Kappa	1.01
company view	50%	Kappa	1.03
company view	65%	Kappa	1.10
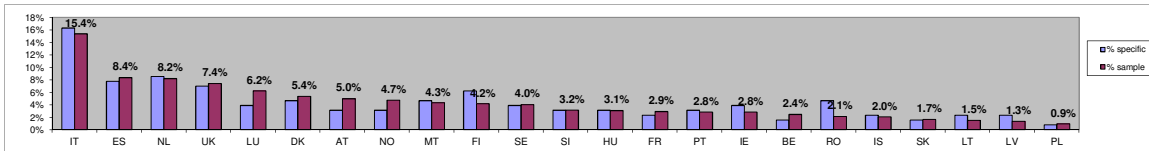
Assistance - Gross current estimate loss concept

Assistance					Gross current estimate loss concept	AS-GCE
cfuesd	1.071	minimum	maximum	threshold		unbiased sigma
cvuesd	0.033	-4.97	6.29	2.89		0.139
mean x	8					Normal
Minimise	-1.354	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	0.986	67	524	0.00	1.00	0.5	8.6
sigma	0.130					

cfuesd	1.068	minimum	maximum	threshold		unbiased sigma
cvuesd	0.034	-4.10	3.63	2.87		0.107
mean x	9					Normal
Minimise	-1.550	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	0.980	60	494	0.00	1.00	0.3	5.2
sigma	0.100					

cfuesd	1.068	minimum	maximum	threshold		unbiased sigma
cvuesd	0.034	-3.66	3.64	2.87		0.089
mean x	9					Normal
Minimise	-1.720	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	0.978	59	480	0.00	1.00	0.3	4.6
sigma	0.083					

Assistance					Gross current estimate loss concept	AS-GCE
cfuesd	1.071	minimum	maximum	threshold		unbiased sigma
cvuesd	0.033	-7.53	3.01	2.89		0.184
mean x	8					Lognormal
Minimise	-0.286	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-1.761	67	524	0.11	1.01	-2.3	16.4
sigma	0.172					

cfuesd	1.067	minimum	maximum	threshold		unbiased sigma
cvuesd	0.034	-4.55	3.11	2.88		0.117
mean x	9					Lognormal
Minimise	-0.625	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-2.209	60	495	0.06	1.01	-0.5	4.9
sigma	0.110					

cfuesd	1.069	minimum	maximum	threshold		unbiased sigma
cvuesd	0.034	-3.68	2.83	2.87		0.104
mean x	9					Lognormal
Minimise	-0.726	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-2.334	60	487	0.05	1.00	-0.3	3.9
sigma	0.097					

AS-GCE – Normal: first variance parametrisation

AS-GCE - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	10.01	7.73
model pattern	10.08	9.33

Assistance/compliance analysis

Assistance/compliance analysis (ln)

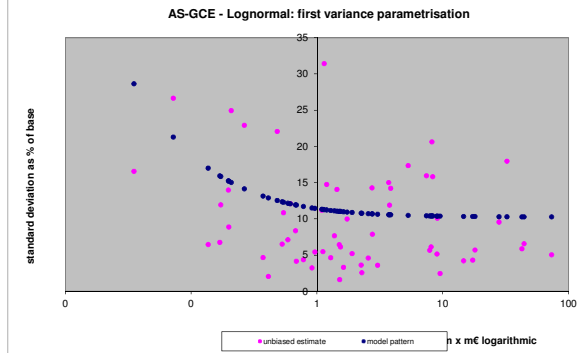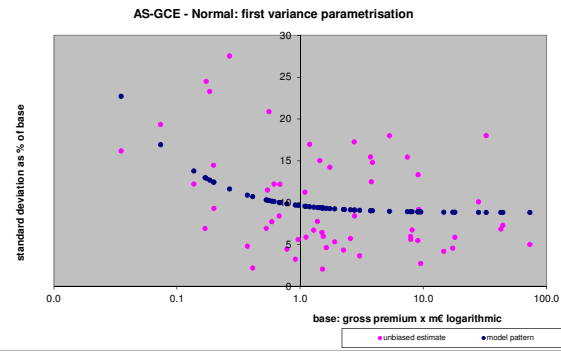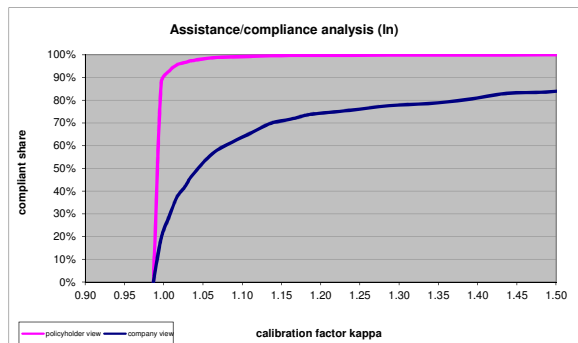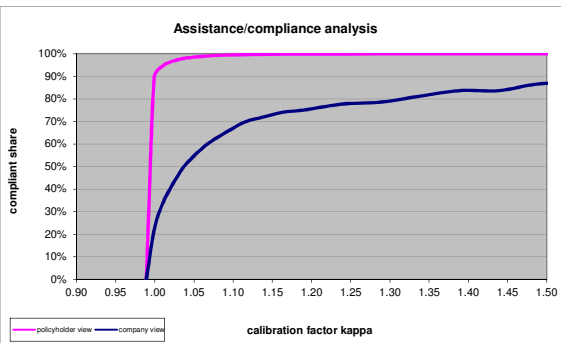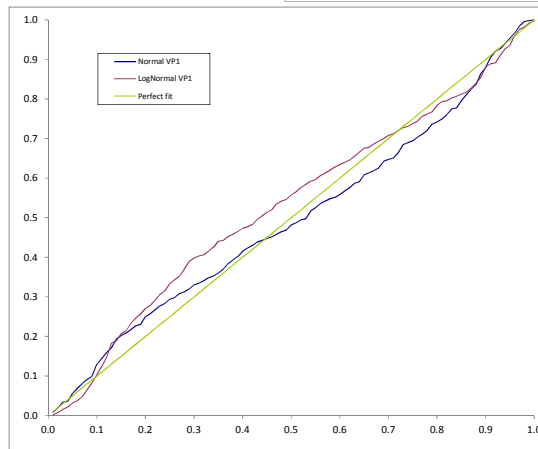|	Population average implied kappa	1.00	
policyholder view	50%	Kappa	0.99
policyholder view	75%	Kappa	1.00
policyholder view	90%	Kappa	1.00
policyholder view	95%	Kappa	1.01
company view	50%	Kappa	1.04
company view	65%	Kappa	1.09

	Population average implied kappa	0.99	
policyholder view	50%	Kappa	0.99
policyholder view	75%	Kappa	1.00
policyholder view	90%	Kappa	1.00
policyholder view	95%	Kappa	1.01
company view	50%	Kappa	1.04
company view	65%	Kappa	1.11
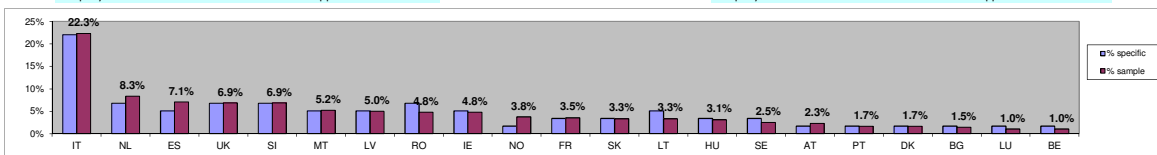
Credit and suretyship - Gross current estimate loss concept

Credit and suretyship				Gross current estimate loss concept			CS-GCE
cfuesd	1.061	minimum	maximum	threshold			unbiased sigma
cvuesd	0.031	-2.70	10.62	2.93			0.679
mean x	41						Normal
Minimise	1.476	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	1.000	64	580	0.00	1.00	4.0	34.1
sigma	0.640						
cfuesd	1.058	minimum	maximum	threshold			unbiased sigma
cvuesd	0.032	-2.73	5.71	2.91			0.405
mean x	43						Normal
Minimise	1.064	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	1.000	59	555	0.00	1.00	1.6	8.4
sigma	0.383						

Credit and suretyship				Gross current estimate loss concept			CS-GCE
cfuesd	1.061	minimum	maximum	threshold			unbiased sigma
cvuesd	0.031	-7.59	3.22	2.93			0.476
mean x	41						Lognormal
Minimise	0.640	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-0.802	64	580	0.36	1.09	-1.0	9.3
sigma	0.448						
cfuesd	1.058	minimum	maximum	threshold			unbiased sigma
cvuesd	0.032	-5.57	3.38	2.91			0.361
mean x	42						Lognormal
Minimise	0.452	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-1.075	59	555	0.27	1.08	-0.4	5.4
sigma	0.341						

cfuesd	1.058	minimum	maximum	threshold			unbiased sigma
cvuesd	0.032	-3.67	4.15	2.90			0.301
mean x	44						Normal
Minimise	0.808	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	1.000	57	535	0.00	1.00	1.0	5.5
sigma	0.285						

cfuesd	1.060	minimum	maximum	threshold			unbiased sigma
cvuesd	0.032	-6.37	3.29	2.91			0.312
mean x	43						Lognormal
Minimise	0.341	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-1.222	59	544	0.25	1.06	-0.4	5.7
sigma	0.295						

CS-GCE - Normal: first variance parametrisation

CS-GCE - Lognormal: first variance parametrisation
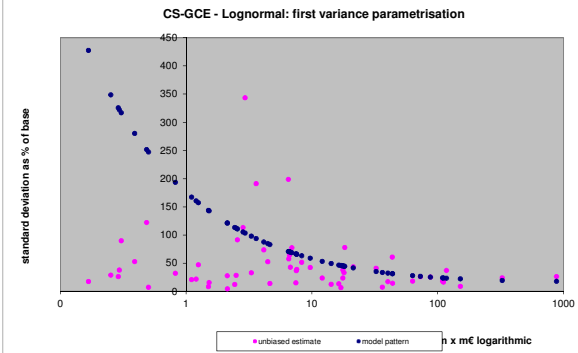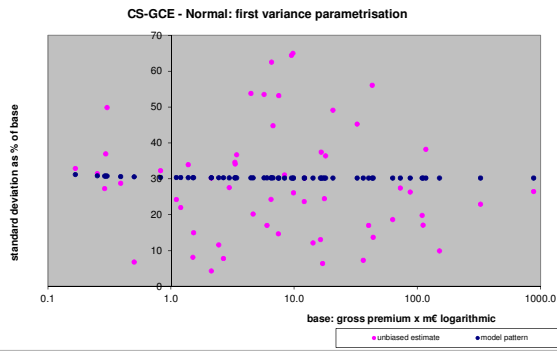
	mean	median
unbiased estimate	28.80	27.21
model pattern	30.24	30.16

Credit and suretyship/compliance analysis

Credit and suretyship/compliance analysis (ln)

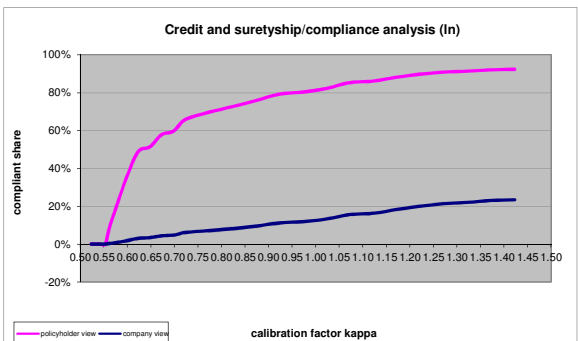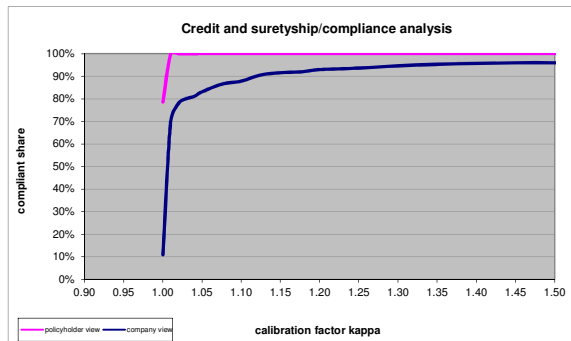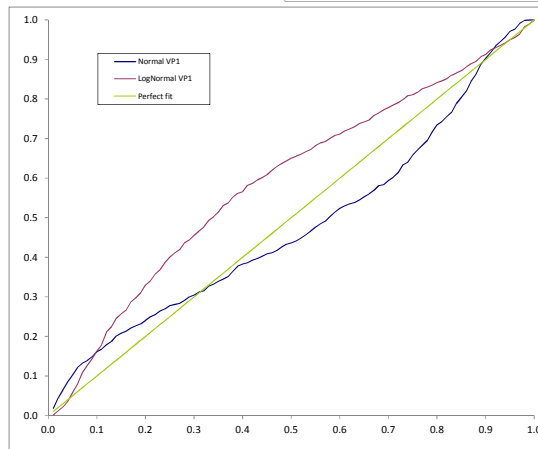| Population average implied kappa			1.00
policyholder view	50%	Kappa	1.00
policyholder view	75%	Kappa	1.00
policyholder view	90%	Kappa	1.01
policyholder view	95%	Kappa	1.01
company view	50%	Kappa	1.01
company view	65%	Kappa	1.01

Population average implied kappa			1.16
policyholder view	50%	Kappa	0.63
policyholder view	75%	Kappa	0.86
policyholder view	90%	Kappa	1.24
policyholder view	95%	Kappa	1.00
company view	50%	Kappa	3.57
company view	65%	Kappa	4.78

Legal expenses - Gross current estimate loss concept

Legal expenses   Gross current estimate loss concept   LE-GCE

		minimum	maximum	threshold			unbiased sigma
cfuesd	1.052	-3.03	9.91	3.14			0.158
cvuesd	0.022						Normal
mean x	34						
Minimise	0.036	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	0.997	114	1183	0.00	1.00	3.1	28.6
sigma	0.150						

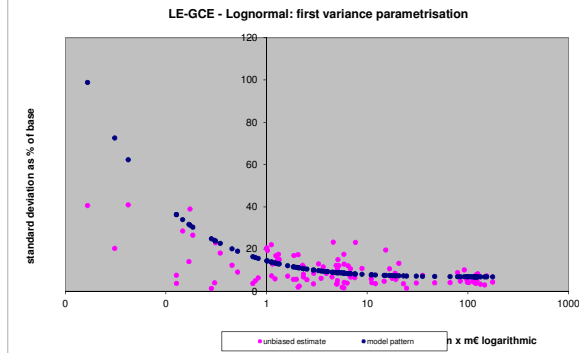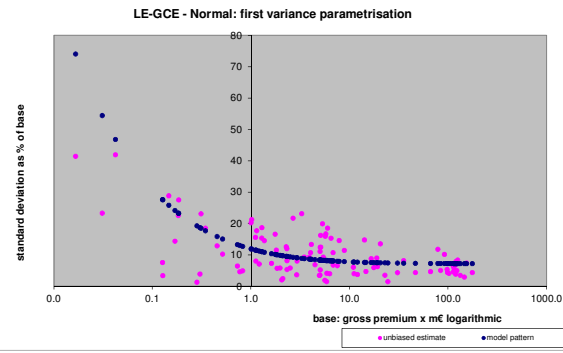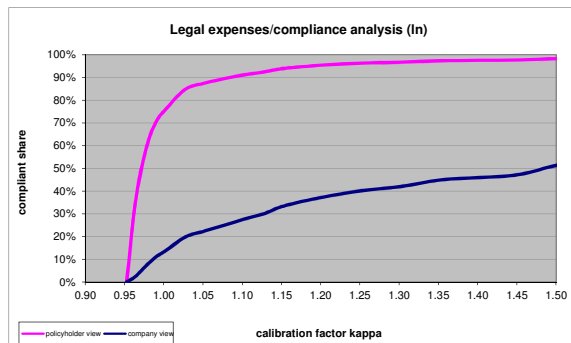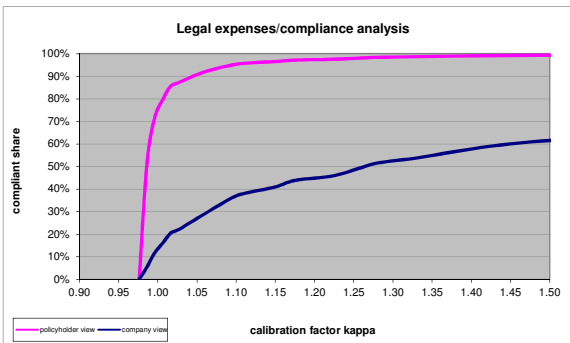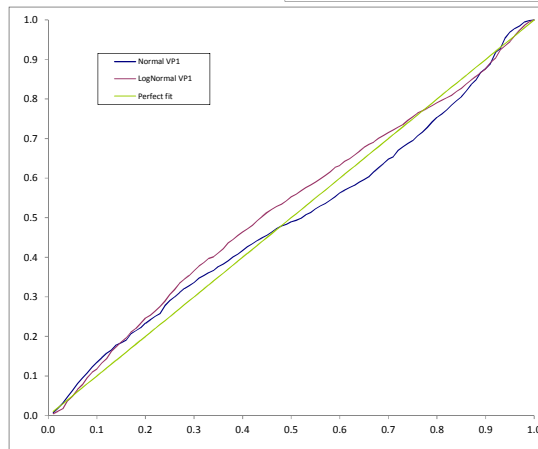|		minimum	maximum	threshold			unbiased sigma
cfuesd	1.051	-3.85	6.19	3.13			0.094
cvuesd	0.022						Normal
mean x	35						
Minimise	-0.291	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	0.974	108	1149	0.01	1.00	0.9	7.7
sigma	0.089						

		minimum	maximum	threshold			unbiased sigma
cfuesd	1.051	-3.80	4.25	3.13			0.073
cvuesd	0.022						Normal
mean x	35						
Minimise	-0.460	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	0.953	107	1128	0.01	1.00	0.4	4.6
sigma	0.070						

Legal expenses   Gross current estimate loss concept   LE-GCE

		minimum	maximum	threshold			unbiased sigma
cfuesd	1.052	-8.52	6.34	3.14			0.131
cvuesd	0.022						Lognormal
mean x	34						
Minimise	-0.599	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-2.083	114	1183	0.09	1.01	-0.5	14.8
sigma	0.125						

		minimum	maximum	threshold			unbiased sigma
cfuesd	1.051	-5.84	4.81	3.13			0.086
cvuesd	0.022						Lognormal
mean x	35						
Minimise	-0.918	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-2.508	108	1144	0.08	1.01	-0.2	6.7
sigma	0.081						

		minimum	maximum	threshold			unbiased sigma
cfuesd	1.052	-4.38	4.28	3.13			0.070
cvuesd	0.022						Lognormal
mean x	36						
Minimise	-1.065	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-2.710	107	1124	0.07	1.01	0.0	4.2
sigma	0.067						

LE-GCE - Normal: first variance parametrisation

LE-GCE - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	10.12	7.90
model pattern	11.39	8.29

Legal expenses/compliance analysis

Legal expenses/compliance analysis (ln)

	Population average implied kappa		1.02
policyholder view	50%	Kappa	0.99
policyholder view	75%	Kappa	1.00
policyholder view	90%	Kappa	1.05
policyholder view	95%	Kappa	1.10
company view	50%	Kappa	1.26
company view	65%	Kappa	1.63

	Population average implied kappa		1.04
policyholder view	50%	Kappa	0.97
policyholder view	75%	Kappa	1.00
policyholder view	90%	Kappa	1.08
policyholder view	95%	Kappa	1.19
company view	50%	Kappa	1.49
company view	65%	Kappa	2.18
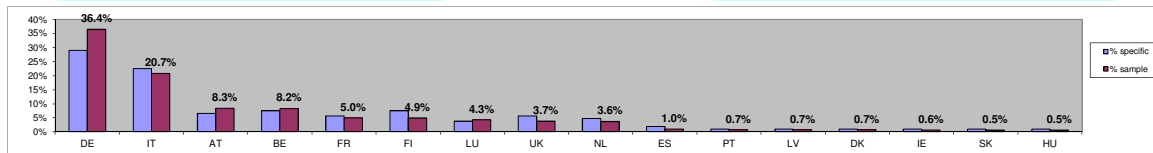
DE 36.4%, IT 20.7%, AT 8.3%, BE 8.2%, FR 5.0%, FI 4.9%, LU 4.3%, UK 3.7%, NL 3.6%, ES 1.0%, PT 0.7%, LV 0.7%, DK 0.7%, IE 0.6%, SK 0.5%, HU 0.5%

Miscellaneous financial loss - Gross current estimate loss concept

Miscellaneous financial loss				Gross current estimate loss concept		MISC-GCE
cfuesd	1.068	minimum	maximum	threshold		unbiased sigma
cvuesd	0.026	-4.15	10.32	3.04		0.244
mean x	14					Normal
Minimise	0.336	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
		104	849	0.01	1.00	3.7	31.8
delta	0.014					
sigma	0.229					
cfuesd	1.063	minimum	maximum	threshold		unbiased sigma
cvuesd	0.027	-5.41	7.25	3.02		0.179
mean x	14					Normal
Minimise	-0.181	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
		92	799	0.00	1.00	1.4	12.8
delta	0.631					
sigma	0.168					

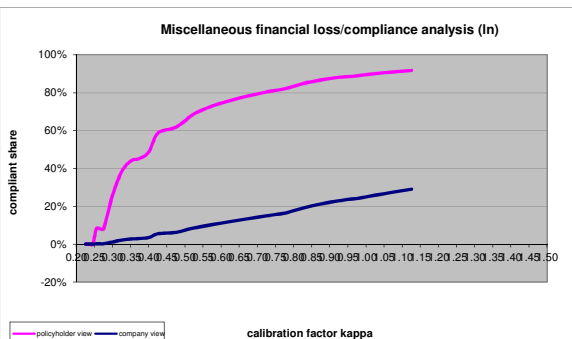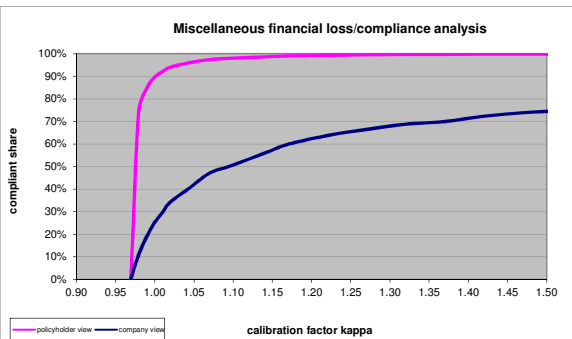| Miscellaneous financial loss				Gross current estimate loss concept		MISC-GCE
cfuesd	1.068	minimum	maximum	threshold		unbiased sigma
cvuesd	0.026	-11.51	2.82	3.04		0.405
mean x	14					Lognormal
Minimise	0.751	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-0.969	104	849	0.40	1.14	-1.7	17.7
delta	0.000					
sigma	0.379					
cfuesd	1.063	minimum	maximum	threshold		unbiased sigma
cvuesd	0.027	-7.48	3.45	3.02		0.302
mean x	14					Lognormal
Minimise	0.526	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-1.258	91	798	0.33	1.09	-0.7	8.0
delta	0.000					
sigma	0.284					

cfuesd	1.064	minimum	maximum	threshold		unbiased sigma
cvuesd	0.027	-4.58	4.76	3.01		0.173
mean x	14					Normal
Minimise	-0.563	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
		90	776	0.00	1.00	0.8	6.1
delta	0.939					
sigma	0.162					

cfuesd	1.063	minimum	maximum	threshold		unbiased sigma
cvuesd	0.027	-4.55	3.73	3.02		0.211
mean x	14					Lognormal
Minimise	0.316	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-1.618	89	781	0.25	1.08	-0.2	4.4
delta	0.051					
sigma	0.198					

MISC-GCE - Normal: first variance parametrisation

MISC-GCE - Lognormal: first variance parametrisation
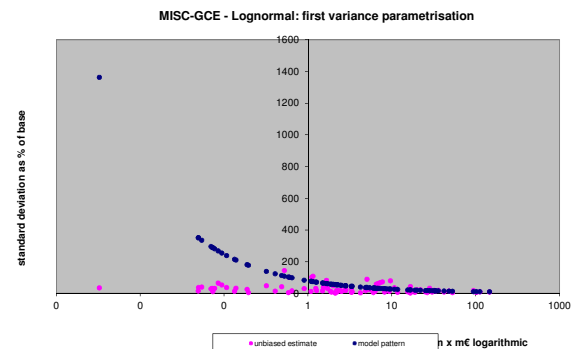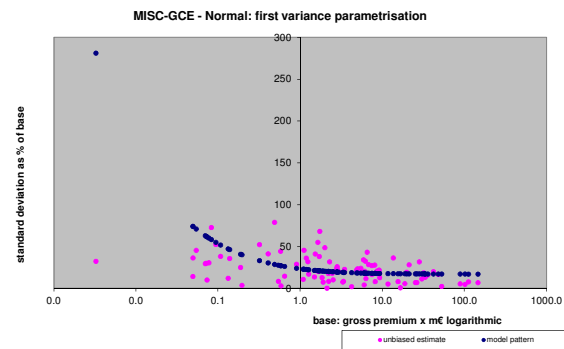
	mean	median
unbiased estimate	22.72	19.84
model pattern	28.31	19.23
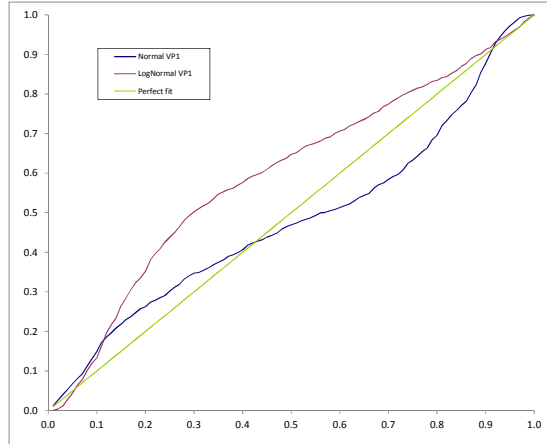
Miscellaneous financial loss/compliance analysis

Miscellaneous financial loss/compliance analysis (ln)

Population average implied kappa		0.99
policyholder view	50%	Kappa	0.98
policyholder view	75%	Kappa	0.98
policyholder view	90%	Kappa	1.00
policyholder view	95%	Kappa	1.03
company view	50%	Kappa	1.09
company view	65%	Kappa	1.24

Population average implied kappa		0.81
policyholder view	50%	Kappa	0.40
policyholder view	75%	Kappa	0.61
policyholder view	90%	Kappa	1.02
policyholder view	95%	Kappa	1.00
company view	50%	Kappa	2.22
company view	65%	Kappa	3.00
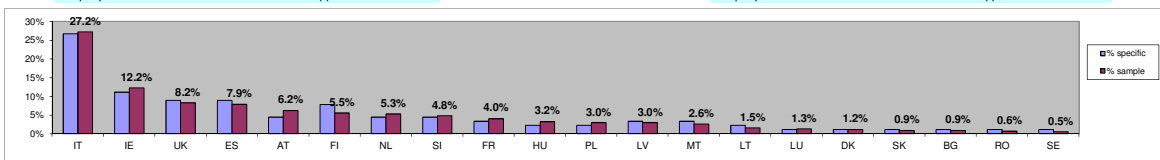
Workers' compensation - Gross current estimate loss concept

Workers' compensation				Gross current estimate loss concept			HWC-GCE
cfuesd	1.055	minimum	maximum	threshold			unbiased sigma
cvuesd	0.036	-1.94	6.67	2.84			0.366
mean x	36						Normal
Minimise	1.277	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.999	44	438	0.00	1.00	2.1	12.7
sigma	0.347						
cfuesd	1.054	minimum	maximum	threshold			unbiased sigma
cvuesd	0.036	-2.71	3.97	2.82			0.250
mean x	35						Normal
Minimise	0.974	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.993	41	419	0.00	1.00	0.7	4.6
sigma	0.237						

Workers' compensation				Gross current estimate loss concept			HWC-GCE
cfuesd	1.055	minimum	maximum	threshold			unbiased sigma
cvuesd	0.036	-3.82	4.04	2.84			0.338
mean x	36						Lognormal
Minimise	-0.331	specific	sample		standard		
ln(sigma)	-1.139	parameters	size	mean	deviation	skewness	kurtosis
delta	0.984	44	438	0.07	1.01	0.1	4.6
sigma	0.320						
cfuesd	1.053	minimum	maximum	threshold			unbiased sigma
cvuesd	0.036	-3.10	3.19	2.82			0.278
mean x	35						Lognormal
Minimise	-0.497	specific	sample		standard		
ln(sigma)	-1.333	parameters	size	mean	deviation	skewness	kurtosis
delta	0.984	41	422	0.05	1.00	0.0	3.8
sigma	0.264						

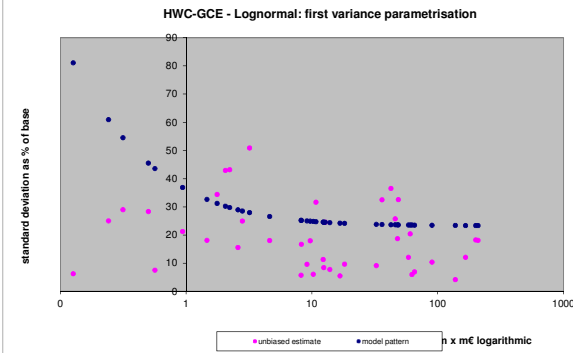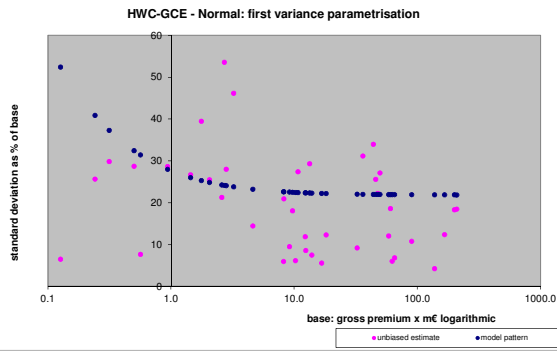|							
cfuesd	1.054	minimum	maximum	threshold			unbiased sigma
cvuesd	0.037	-3.14	3.38	2.82			0.219
mean x	36						Normal
Minimise	0.891	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.983	41	414	-0.01	1.00	0.5	4.0
sigma	0.208						

cfuesd	1.054	minimum	maximum	threshold			unbiased sigma
cvuesd	0.037	-3.13	3.26	2.82			0.236
mean x	36						Lognormal
Minimise	-0.577	specific	sample		standard		
ln(sigma)	-1.496	parameters	size	mean	deviation	skewness	kurtosis
delta	0.961	41	416	0.04	1.00	-0.1	3.4
sigma	0.224						

HWC-GCE - Normal: first variance parametrisation

HWC-GCE - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	19.49	18.39
model pattern	24.71	22.30

Workers' compensation/compliance analysis

Workers' compensation/compliance analysis (ln)

Population average implied kappa			1.00
policyholder view	50%	Kappa	1.00
policyholder view	75%	Kappa	1.00
policyholder view	90%	Kappa	1.00
policyholder view	95%	Kappa	1.01
company view	50%	Kappa	1.04
company view	65%	Kappa	1.13

Population average implied kappa			1.00
policyholder view	50%	Kappa	0.99
policyholder view	75%	Kappa	0.99
policyholder view	90%	Kappa	1.01
policyholder view	95%	Kappa	1.03
company view	50%	Kappa	1.10
company view	65%	Kappa	1.29

Motor other - Reserve risk

Motor other					Reserve risk		MO-GRR
cfuesd	1.062	minimum	maximum	threshold			unbiased sigma
cvuesd	0.019	-9.03	21.35	3.22			0.559
mean x	71						Normal
Minimise	1.771	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.817	176	1549	0.04	1.00	9.4	195.0
sigma	0.526						
cfuesd	1.059	minimum	maximum	threshold			unbiased sigma
cvuesd	0.019	-5.01	9.33	3.21			0.176
mean x	73						Normal
Minimise	0.633	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.835	160	1486	0.07	1.00	2.8	24.6
sigma	0.166						

Motor other					Reserve risk		MO-GRR
cfuesd	1.062	minimum	maximum	threshold			unbiased sigma
cvuesd	0.019	-20.69	5.17	3.22			0.703
mean x	71						Lognormal
Minimise	0.820	specific	sample		standard		
ln(sigma)	-0.413	parameters	size	mean	deviation	skewness	kurtosis
delta	0.296	176	1549	0.61	1.12	-6.1	103.5
sigma	0.662						
cfuesd	1.059	minimum	maximum	threshold			unbiased sigma
cvuesd	0.019	-9.96	10.67	3.21			0.205
mean x	69						Lognormal
Minimise	-0.266	specific	sample		standard		
ln(sigma)	-1.644	parameters	size	mean	deviation	skewness	kurtosis
delta	0.686	161	1494	0.25	1.04	-0.7	32.1
sigma	0.193						

cfuesd	1.060	minimum	maximum	threshold			unbiased sigma
cvuesd	0.020	-4.30	5.82	3.20			0.138
mean x	72						Normal
Minimise	0.232	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.909	159	1456	0.05	1.00	1.3	9.4
sigma	0.130						

cfuesd	1.060	minimum	maximum	threshold			unbiased sigma
cvuesd	0.020	-5.27	5.40	3.20			0.144
mean x	67						Lognormal
Minimise	-0.840	specific	sample		standard		
ln(sigma)	-1.992	parameters	size	mean	deviation	skewness	kurtosis
delta	0.894	160	1469	0.16	1.03	0.4	7.6
sigma	0.136						

MO-GRR - Normal: first variance parametrisation

MO-GRR - Lognormal: first variance parametrisation
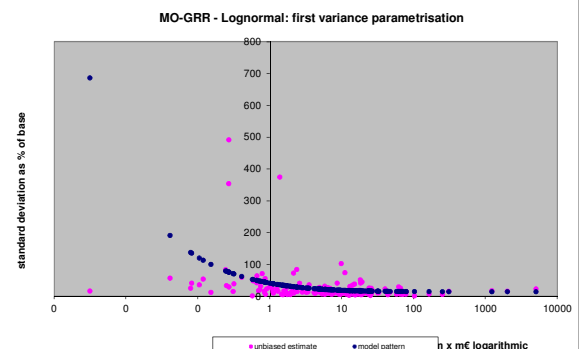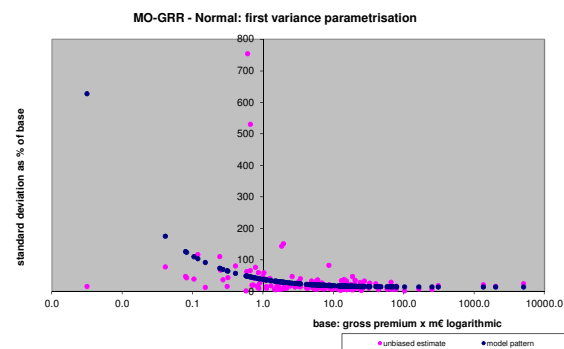
	mean	median
unbiased estimate	30.40	14.71
model pattern	31.26	19.06
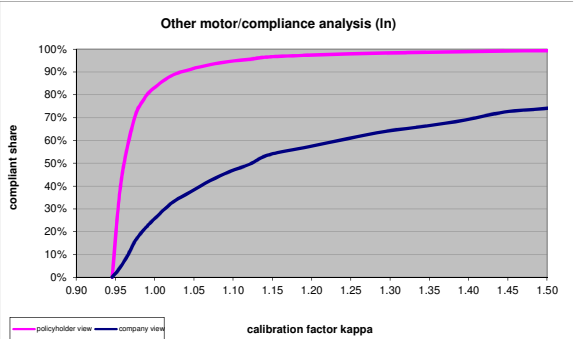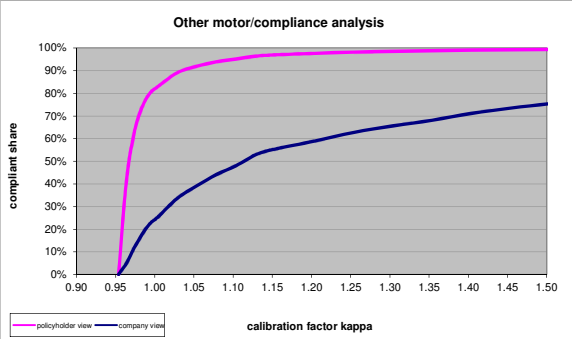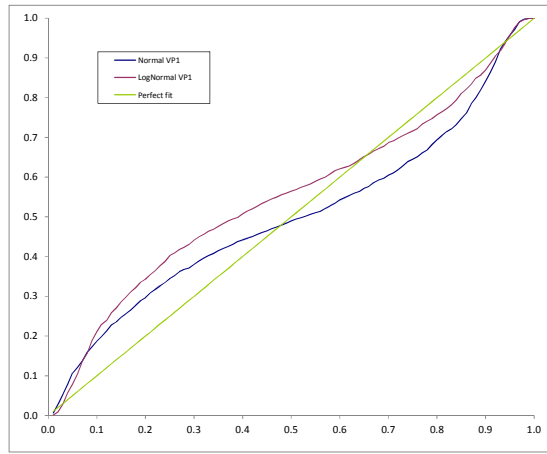
Other motor/compliance analysis

Other motor/compliance analysis (ln)

	Population average implied kappa		1.00
policyholder view	50%	Kappa	0.97
policyholder view	75%	Kappa	0.99
policyholder view	90%	Kappa	1.04
policyholder view	95%	Kappa	1.10
company view	50%	Kappa	1.11
company view	65%	Kappa	1.29

	Population average implied kappa		1.00
policyholder view	50%	Kappa	0.96
policyholder view	75%	Kappa	0.98
policyholder view	90%	Kappa	1.04
policyholder view	95%	Kappa	1.11
company view	50%	Kappa	1.12
company view	65%	Kappa	1.32
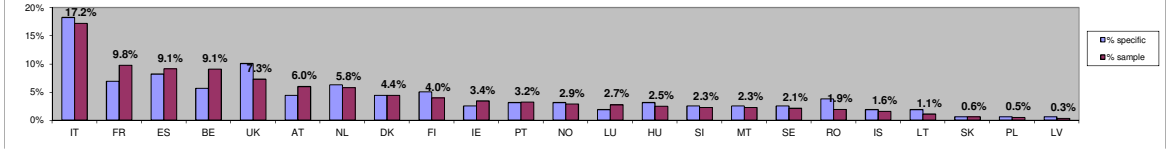
Motor third party liability - Reserve risk

Left block:

Motor third party liability					Reserve risk	MTPL-GRR
cfuesd	1.060	minimum	maximum	threshold		unbiased sigma
cvuesd	0.018	-2.88	19.24	3.25		0.572
mean x	215					Normal
Minimise	4.031	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.000	187	1703	0.07	1.00	14.7	243.2
sigma	0.540					

cfuesd	1.056	minimum	maximum	threshold		unbiased sigma
cvuesd	0.018	-10.90	11.05	3.23		0.149
mean x	221					Normal
Minimise	2.593	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.612	170	1643	0.03	1.00	0.9	35.7
sigma	0.141					

cfuesd	1.057	minimum	maximum	threshold		unbiased sigma
cvuesd	0.019	-4.53	5.34	3.23		0.086
mean x	220					Normal
Minimise	2.012	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.666	169	1605	0.04	1.00	0.7	8.1
sigma	0.082					

Right block:

Motor third party liability					Reserve risk	MTPL-GRR
cfuesd	1.060	minimum	maximum	threshold		unbiased sigma
cvuesd	0.018	-33.22	6.38	3.25		0.343
mean x	215					Lognormal
Minimise	-0.097	specific	sample		standard	
ln(sigma)	-1.129	parameters	size	mean	deviation	skewness	kurtosis
delta	0.000	187	1703	0.32	1.07	-17.5	557.0
sigma	0.323					

cfuesd	1.056	minimum	maximum	threshold		unbiased sigma
cvuesd	0.018	-8.35	7.56	3.23		0.135
mean x	219					Lognormal
Minimise	-1.205	specific	sample		standard	
ln(sigma)	-2.060	parameters	size	mean	deviation	skewness	kurtosis
delta	0.796	170	1638	0.10	1.02	-0.3	17.4
sigma	0.128					

cfuesd	1.058	minimum	maximum	threshold		unbiased sigma
cvuesd	0.019	-4.62	4.38	3.23		0.083
mean x	220					Lognormal
Minimise	-1.605	specific	sample		standard	
ln(sigma)	-2.541	parameters	size	mean	deviation	skewness	kurtosis
delta	0.709	170	1600	0.07	1.01	0.1	6.3
sigma	0.079					

MTPL-GRR - Normal: first variance parametrisation

MTPL-GRR - Lognormal: first variance parametrisation
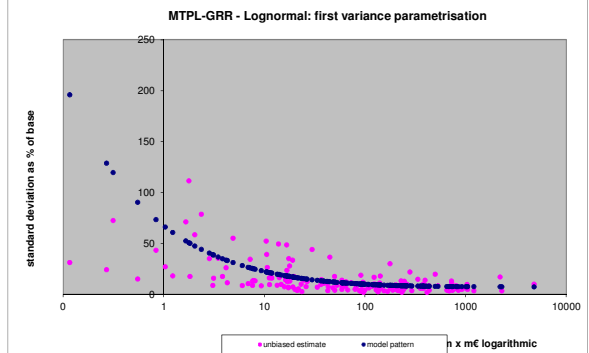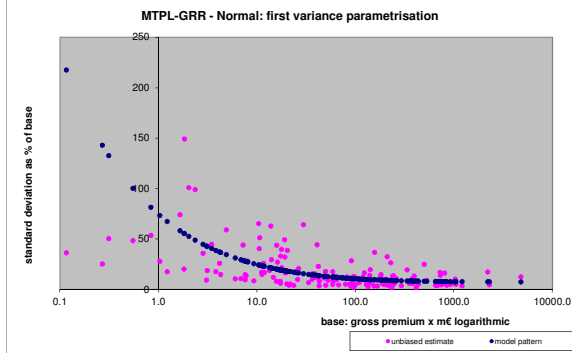
	mean	median
unbiased estimate	17.57	11.56
model pattern	19.60	11.45

Motor vehicle liability/compliance analysis

Motor vehicle liability/compliance analysis (ln)

	Population average implied kappa		1.17
policyholder view	50%	Kappa	0.94
policyholder view	75%	Kappa	1.06
policyholder view	90%	Kappa	1.36
policyholder view	95%	Kappa	1.71
company view	50%	Kappa	1.92
company view	65%	Kappa	2.70

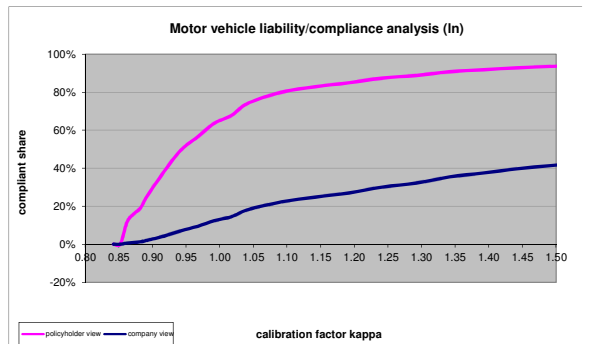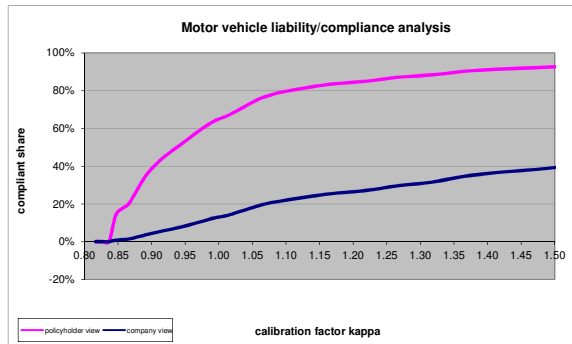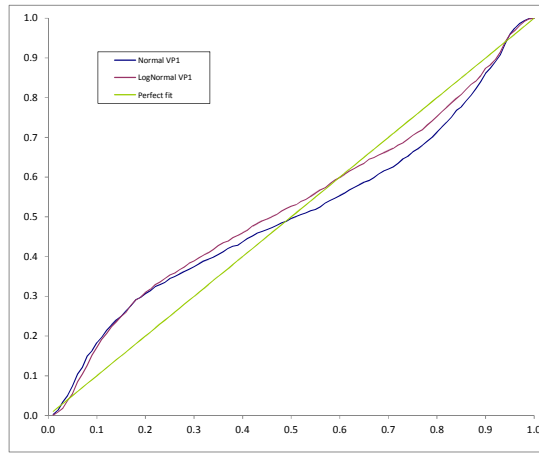|	Population average implied kappa		1.15
policyholder view	50%	Kappa	0.94
policyholder view	75%	Kappa	1.05
policyholder view	90%	Kappa	1.32
policyholder view	95%	Kappa	1.64
company view	50%	Kappa	1.81
company view	65%	Kappa	2.62
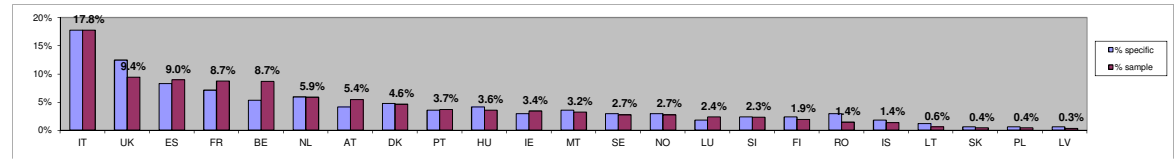
Fire and other damage to property - Reserve risk

Fire and other damage to property						Reserve risk	PROP-GRR
cfuesd	1.063	minimum	maximum	threshold			unbiased sigma
cvuesd	0.018	-3.78	34.56	3.26			0.498
mean x	137						Normal
Minimise	**2.820**	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.213	206	1805	0.04	1.00	24.9	811.9
sigma	0.468						
cfuesd	1.059	minimum	maximum	threshold			unbiased sigma
cvuesd	0.018	-7.97	13.79	3.25			0.192
mean x	119						Normal
Minimise	**1.561**	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.689	190	1750	0.05	1.00	3.6	53.4
sigma	0.181						

Fire and other damage to property						Reserve risk	PROP-GRR
cfuesd	1.063	minimum	maximum	threshold			unbiased sigma
cvuesd	0.018	-24.94	8.58	3.26			0.330
mean x	137						Lognormal
Minimise	**0.177**	specific	sample		standard		
ln(sigma)	-1.171	parameters	size	mean	deviation	skewness	kurtosis
delta	0.528	206	1805	0.38	1.07	-7.2	177.1
sigma	0.310						
cfuesd	1.060	minimum	maximum	threshold			unbiased sigma
cvuesd	0.018	-17.13	6.72	3.25			0.146
mean x	118						Lognormal
Minimise	**-0.738**	specific	sample		standard		
ln(sigma)	-1.984	parameters	size	mean	deviation	skewness	kurtosis
delta	0.770	189	1733	0.16	1.02	-2.6	57.0
sigma	0.138						

		minimum	maximum	threshold			unbiased sigma
cfuesd	1.060	-10.87	6.01	3.25			0.133
cvuesd	0.018						Normal
mean x	119						
Minimise	**0.883**	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.913	189	1719	0.02	1.00	0.1	18.9
sigma	0.125						

		minimum	maximum	threshold			unbiased sigma
cfuesd	1.060	-7.48	5.76	3.24			0.119
cvuesd	0.018						Lognormal
mean x	114						
Minimise	**-1.183**	specific	sample		standard		
ln(sigma)	-2.188	parameters	size	mean	deviation	skewness	kurtosis
delta	0.933	188	1701	0.08	1.01	0.0	9.1
sigma	0.112						

PROP-GRR - Normal: first variance parametrisation

PROP-GRR - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	34.97	13.42
model pattern	32.24	17.22

Fire and other damage to property/compliance analysis

Fire and other damage to property/compliance analysis (ln)

		Population average implied kappa	1.01
policyholder view	50%	Kappa	0.97
policyholder view	75%	Kappa	0.98
policyholder view	90%	Kappa	1.04
policyholder view	95%	Kappa	1.13
company view	50%	Kappa	1.18
company view	65%	Kappa	1.36

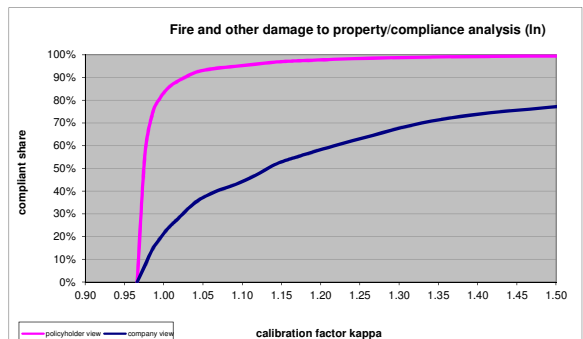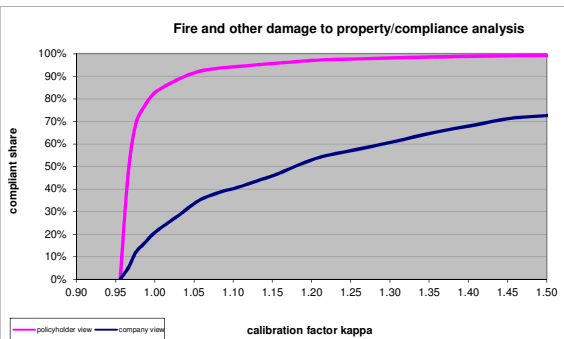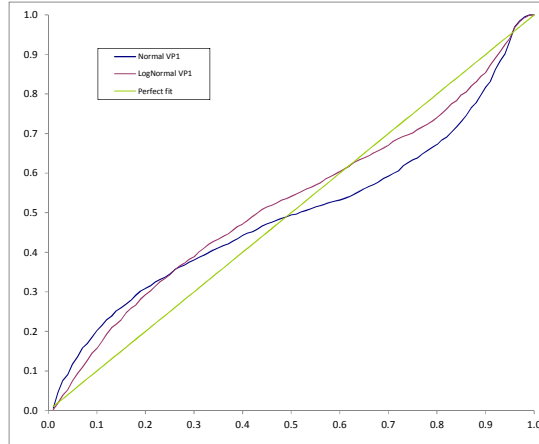|		Population average implied kappa	1.00
policyholder view	50%	Kappa	0.97
policyholder view	75%	Kappa	0.99
policyholder view	90%	Kappa	1.03
policyholder view	95%	Kappa	1.09
company view	50%	Kappa	1.13
company view	65%	Kappa	1.27

General liability - Reserve risk

General liability					Reserve risk	*LIAB-GRR*
cfuesd	1.063	minimum	maximum	threshold		unbiased sigma
cvuesd	0.018	-3.56	13.90	3.24		0.201
mean x	173					Normal
Minimise	1.171	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.938	194	1689	0.06	1.00	4.9	52.4
sigma	0.189					

General liability					Reserve risk	*LIAB-GRR*
cfuesd	1.063	minimum	maximum	threshold		unbiased sigma
cvuesd	0.018	-19.53	8.10	3.24		0.193
mean x	173					Lognormal
Minimise	-0.472	specific	sample		standard	
ln(sigma)	-1.707	parameters	size	mean	deviation	skewness	kurtosis
delta	0.891	194	1689	0.20	1.07	-4.1	78.2
sigma	0.181					

		minimum	maximum	threshold		unbiased sigma
cfuesd	1.059	-4.83	5.94	3.23		0.140
cvuesd	0.019					Normal
mean x	170					
Minimise	0.800	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.959	174	1608	0.05	1.00	0.8	8.8
sigma	0.133					

		minimum	maximum	threshold		unbiased sigma
cfuesd	1.059	-8.87	5.17	3.23		0.123
cvuesd	0.019					Lognormal
mean x	155					
Minimise	-0.934	specific	sample		standard	
ln(sigma)	-2.154	parameters	size	mean	deviation	skewness	kurtosis
delta	0.886	175	1611	0.17	1.04	0.0	9.9
sigma	0.116					

		minimum	maximum	threshold		unbiased sigma
cfuesd	1.060	-4.08	4.00	3.22		0.111
cvuesd	0.019					Normal
mean x	157					
Minimise	0.566	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.952	174	1575	0.05	1.00	0.6	5.4
sigma	0.104					

		minimum	maximum	threshold		unbiased sigma
cfuesd	1.060	-4.83	4.49	3.22		0.104
cvuesd	0.019					Lognormal
mean x	139					
Minimise	-1.181	specific	sample		standard	
ln(sigma)	-2.321	parameters	size	mean	deviation	skewness	kurtosis
delta	0.920	171	1567	0.15	1.03	0.4	5.7
sigma	0.098					

LIAB-GRR - Normal: first variance parametrisation

LIAB-GRR - Lognormal: first variance parametrisation
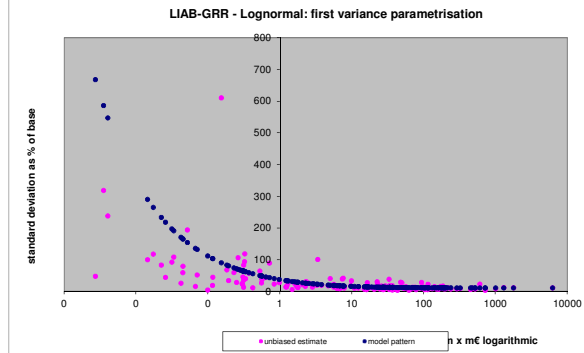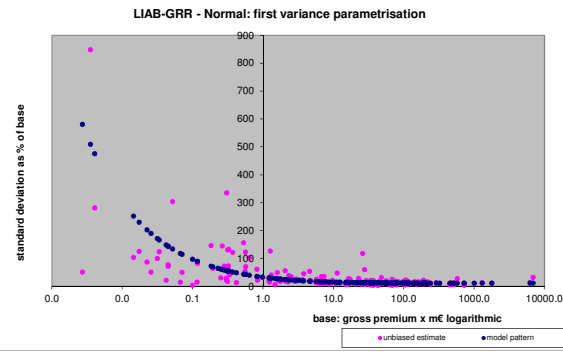
	mean	median
unbiased estimate	39.35	16.37
model pattern	40.35	13.08

General liability/compliance analysis

General liability/compliance analysis (ln)

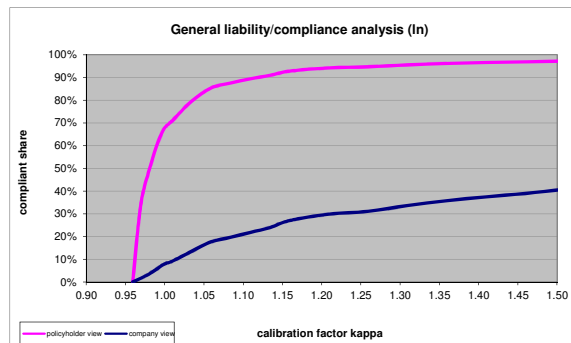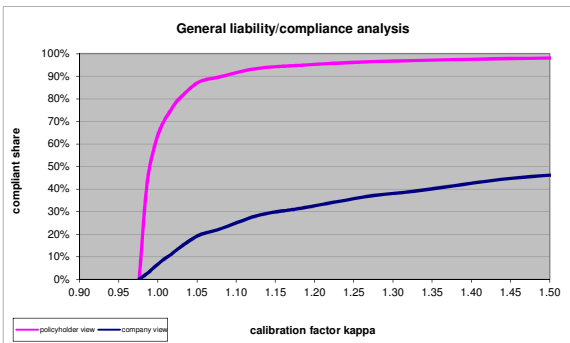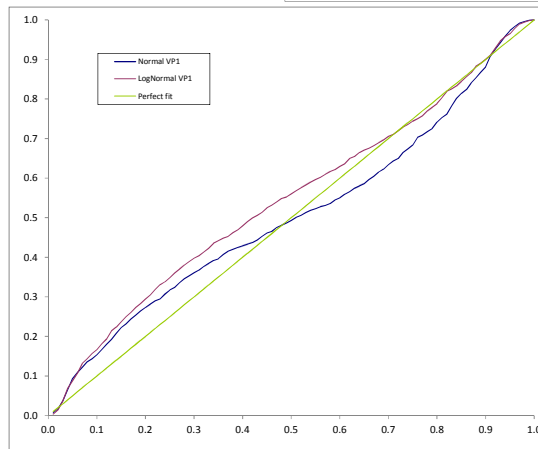|	Population average implied kappa		1.05
policyholder view	50%	Kappa	0.99
policyholder view	75%	Kappa	1.02
policyholder view	90%	Kappa	1.08
policyholder view	95%	Kappa	1.19
company view	50%	Kappa	1.60
company view	65%	Kappa	2.26

	Population average implied kappa		1.08
policyholder view	50%	Kappa	0.98
policyholder view	75%	Kappa	1.02
policyholder view	90%	Kappa	1.12
policyholder view	95%	Kappa	1.28
company view	50%	Kappa	1.83
company view	65%	Kappa	2.59
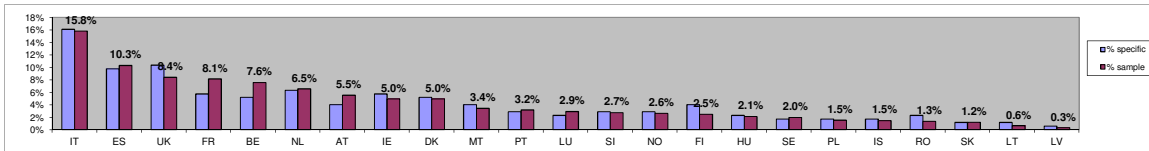
Medical expense - Reserve risk

Medical expense					Reserve risk	HME-GRR
cfuesd	1.078	minimum	maximum	threshold		unbiased sigma
cvuesd	0.026	-15.97	16.25	3.05		0.844
mean x	46					Normal
Minimise	2.288	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.000	120	868	0.00	1.00	-2.4	190.8
sigma	0.783					

Medical expense					Reserve risk	HME-GRR
cfuesd	1.078	minimum	maximum	threshold		unbiased sigma
cvuesd	0.026	-17.22	5.52	3.05		2.123
mean x	46					Lognormal
Minimise	1.373	specific	sample		standard	
ln(sigma)	0.678	parameters	size	mean	deviation	skewness	kurtosis
delta	0.000	120	868	0.93	1.27	-2.7	43.7
sigma	1.970					

cfuesd	1.069	minimum	maximum	threshold		unbiased sigma
cvuesd	0.027	-4.94	16.92	3.03		0.247
mean x	37					Normal
Minimise	0.576	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.727	100	804	0.05	1.00	7.6	113.2
sigma	0.231					

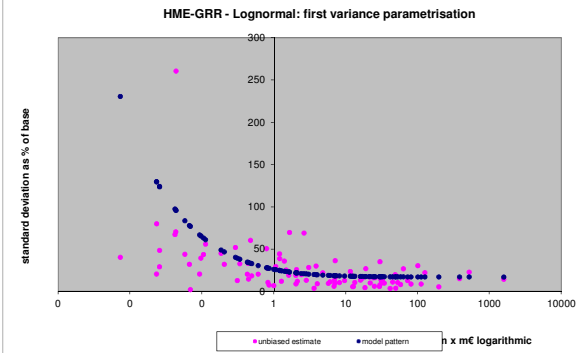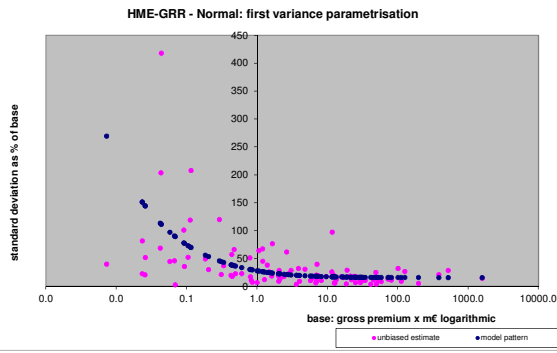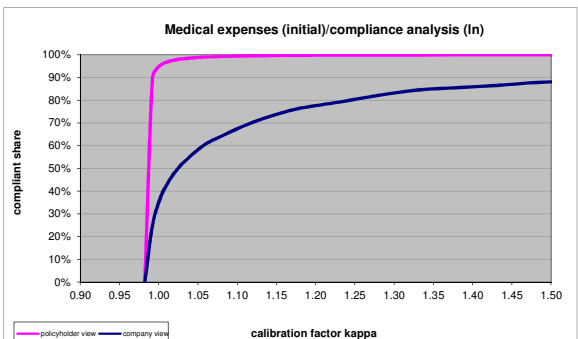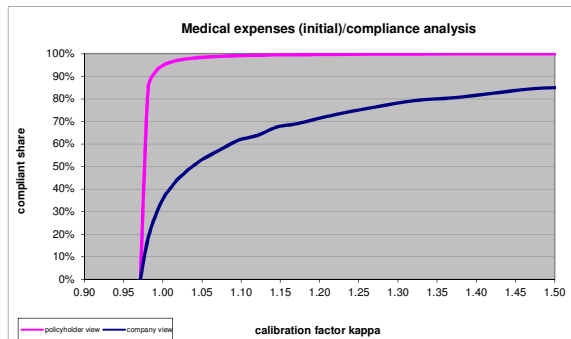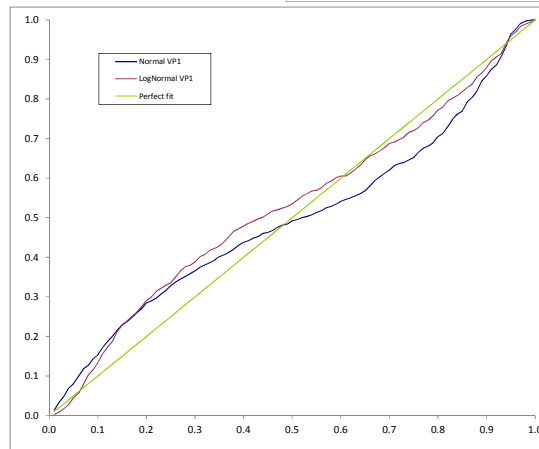|						
cfuesd	1.069	minimum	maximum	threshold		unbiased sigma
cvuesd	0.027	-7.16	8.35	3.03		0.255
mean x	38					Lognormal
Minimise	-0.465	specific	sample		standard	
ln(sigma)	-1.433	parameters	size	mean	deviation	skewness	kurtosis
delta	0.949	100	806	0.20	1.05	0.7	16.8
sigma	0.239					

cfuesd	1.070	minimum	maximum	threshold		unbiased sigma
cvuesd	0.027	-5.84	6.17	3.02		0.158
mean x	37					Normal
Minimise	-0.259	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.943	99	787	0.03	1.00	0.8	9.1
sigma	0.147					

cfuesd	1.069	minimum	maximum	threshold		unbiased sigma
cvuesd	0.027	-4.48	4.44	3.02		0.169
mean x	38					Lognormal
Minimise	-0.890	specific	sample		standard	
ln(sigma)	-1.844	parameters	size	mean	deviation	skewness	kurtosis
delta	0.964	97	780	0.07	1.02	0.0	5.3
sigma	0.158					

HME-GRR - Normal: first variance parametrisation

HME-GRR - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	34.60	18.80
model pattern	36.86	19.23

Medical expenses (initial)/compliance analysis

Medical expenses (initial)/compliance analysis (ln)

		Population average implied kappa	0.98
policyholder view	50%	Kappa	0.98
policyholder view	75%	Kappa	0.98
policyholder view	90%	Kappa	0.99
policyholder view	95%	Kappa	1.00
company view	50%	Kappa	1.04
company view	65%	Kappa	1.13

		Population average implied kappa	0.99
policyholder view	50%	Kappa	0.99
policyholder view	75%	Kappa	0.99
policyholder view	90%	Kappa	0.99
policyholder view	95%	Kappa	1.00
company view	50%	Kappa	1.02
company view	65%	Kappa	1.08

Income protection - Reserve risk

Income protection					Reserve risk	HIP-GRR
cfuesd	1.084	minimum	maximum	threshold		unbiased sigma
cvuesd	0.018	-3.56	38.92	3.26		0.462
mean x	55					Normal
Minimise	1.975	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.012	268	1806	0.04	1.00	33.0	1273.4
sigma	0.426						

Income protection					Reserve risk	HIP-GRR
cfuesd	1.084	minimum	maximum	threshold		unbiased sigma
cvuesd	0.018	#NUM!	#NUM!	3.26		0.089
mean x	55					Lognormal
Minimise	#NUM!	specific	sample		standard	
ln(sigma)	-2.496	parameters	size	mean	deviation	skewness	kurtosis
delta	0.881	268	1806	#NUM!	#NUM!	#NUM!	#NUM!
sigma	0.082						

		minimum	maximum	threshold		unbiased sigma
cfuesd	1.079	-6.27	12.90	3.25		0.155
cvuesd	0.018					Normal
mean x	44					
Minimise	0.328	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.853	246	1740	0.05	1.00	3.1	36.8
sigma	0.144						

		minimum	maximum	threshold		unbiased sigma
cfuesd	1.081	-3.81	3.16	3.23		0.088
cvuesd	0.019					Lognormal
mean x	41					
Minimise	-1.369	specific	sample		standard	
ln(sigma)	-2.505	parameters	size	mean	deviation	skewness	kurtosis
delta	0.857	237	1643	0.08	1.02	0.1	3.9
sigma	0.082						

		minimum	maximum	threshold		unbiased sigma
cfuesd	1.080	-4.73	4.88	3.25		0.111
cvuesd	0.018					Normal
mean x	43					
Minimise	-0.047	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.868	244	1708	0.05	1.00	0.6	6.6
sigma	0.103						

		minimum	maximum	threshold		unbiased sigma
cfuesd	1.081	-3.74	3.21	3.23		0.084
cvuesd	0.019					Lognormal
mean x	41					
Minimise	-1.397	specific	sample		standard	
ln(sigma)	-2.550	parameters	size	mean	deviation	skewness	kurtosis
delta	0.847	235	1629	0.08	1.02	0.1	3.7
sigma	0.078						

HIP-GRR - Normal: first variance parametrisation

HIP-GRR - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	27.43	13.37
model pattern	26.09	14.12

Income protection/compliance analysis

Income protection/compliance analysis (ln)

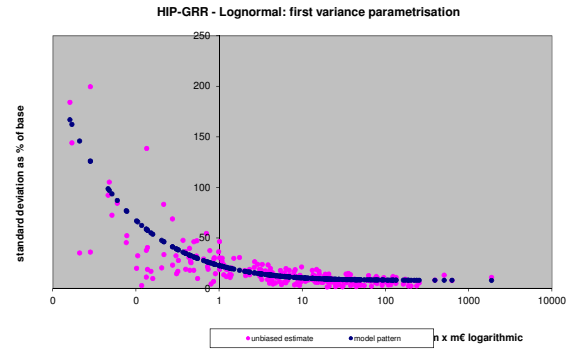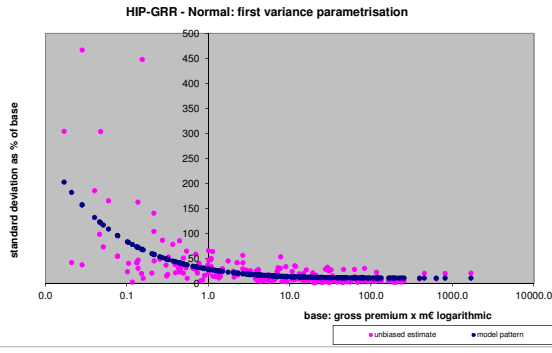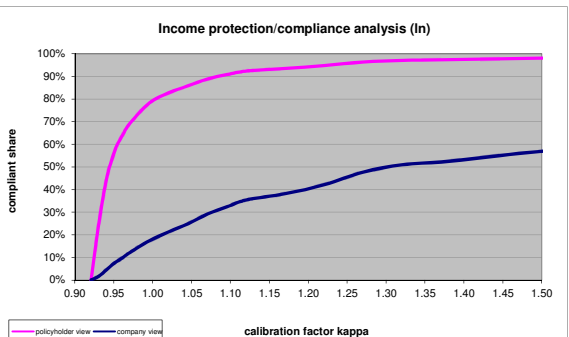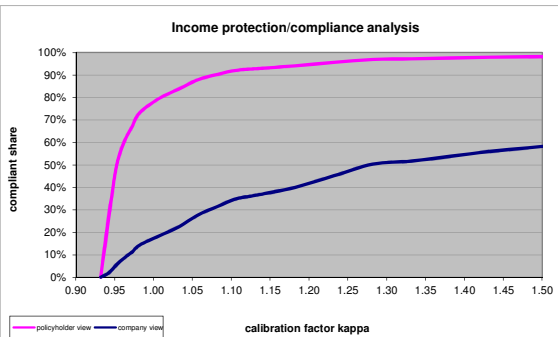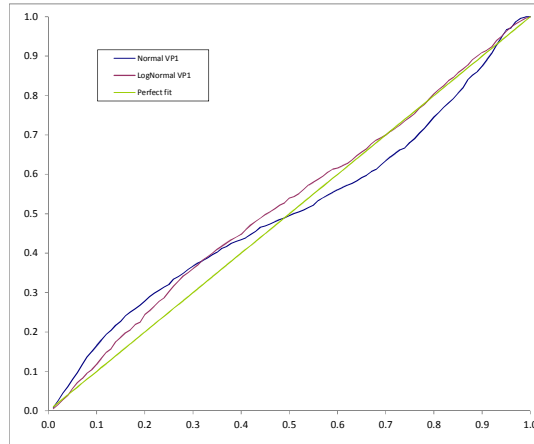| Population average implied kappa		1.02
policyholder view	50%	Kappa	0.95
policyholder view	75%	Kappa	0.99
policyholder view	90%	Kappa	1.08
policyholder view	95%	Kappa	1.21
company view	50%	Kappa	1.28
company view	65%	Kappa	1.69

Population average implied kappa		1.02
policyholder view	50%	Kappa	0.95
policyholder view	75%	Kappa	0.99
policyholder view	90%	Kappa	1.09
policyholder view	95%	Kappa	1.23
company view	50%	Kappa	1.31
company view	65%	Kappa	1.74
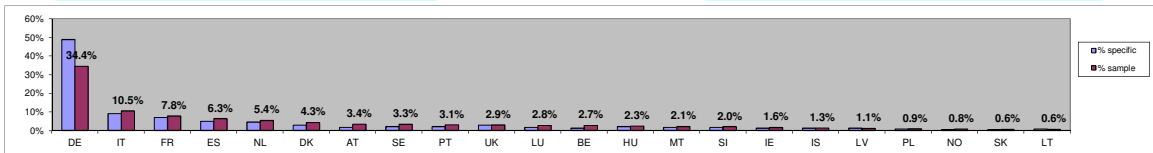
Marine, aviation and transport - Reserve risk

Marine, aviation and transport					Reserve risk	MAT-GRR
cfuesd	1.062	minimum	maximum	threshold		unbiased sigma
cvuesd	0.022	-3.09	20.01	3.13		0.899
mean x	109					Normal
Minimise	**1.205**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	0.998	128	1136	0.02	1.00	9.9	165.3
sigma	0.846					

Marine, aviation and transport					Reserve risk	MAT-GRR
cfuesd	1.062	minimum	maximum	threshold		unbiased sigma
cvuesd	0.022	-6.59	8.42	3.13		0.647
mean x	109					Lognormal
Minimise	**0.151**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-0.496	128	1136	0.21	1.03	-1.0	15.6
sigma	0.609					

cfuesd	1.058	minimum	maximum	threshold		unbiased sigma
cvuesd	0.023	-6.49	7.46	3.11		0.228
mean x	114					Normal
Minimise	**0.367**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	0.974	114	1082	0.03	1.00	1.3	14.8
sigma	0.216					

cfuesd	1.058	minimum	maximum	threshold		unbiased sigma
cvuesd	0.023	-6.11	4.83	3.11		0.216
mean x	73					Lognormal
Minimise	**-0.478**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-1.587	113	1064	0.14	1.03	-0.7	9.2
sigma	0.205					

cfuesd	1.059	minimum	maximum	threshold		unbiased sigma
cvuesd	0.023	-3.97	4.57	3.11		0.175
mean x	116					Normal
Minimise	**0.030**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	0.983	113	1056	0.03	1.00	0.9	7.0
sigma	0.166					

cfuesd	1.059	minimum	maximum	threshold		unbiased sigma
cvuesd	0.023	-6.04	3.95	3.10		0.175
mean x	62					Lognormal
Minimise	**-0.754**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-1.801	111	1033	0.10	1.02	0.0	6.4
sigma	0.165					

MAT-GRR - Normal: first variance parametrisation

MAT-GRR - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	57.02	20.72
model pattern	48.10	22.01

Marine, aviation and transport/compliance analysis

Marine, aviation and transport/compliance analysis (ln)

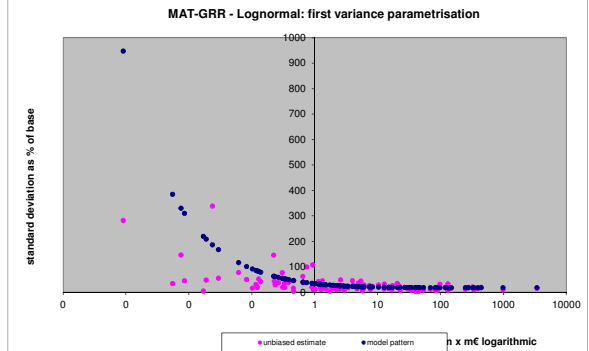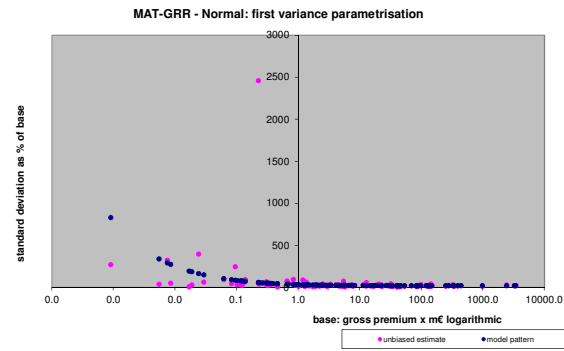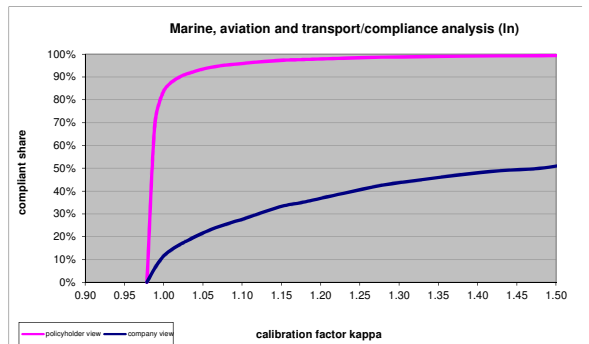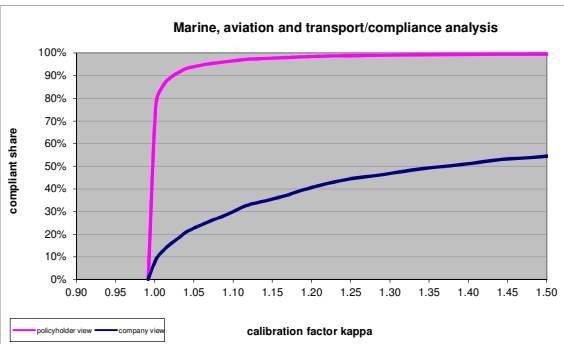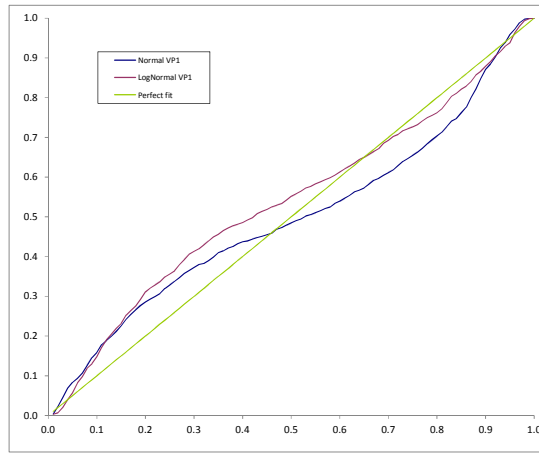|	Population average implied kappa	1.02
policyholder view	50%	Kappa	1.00
policyholder view	75%	Kappa	1.00
policyholder view	90%	Kappa	1.02
policyholder view	95%	Kappa	1.07
company view	50%	Kappa	1.37
company view	65%	Kappa	2.07

	Population average implied kappa	1.02
policyholder view	50%	Kappa	0.99
policyholder view	75%	Kappa	0.99
policyholder view	90%	Kappa	1.02
policyholder view	95%	Kappa	1.08
company view	50%	Kappa	1.48
company view	65%	Kappa	2.29

Assistance - Reserve risk

Assistance					Reserve risk	AS-GRR
cfuesd	1.078	minimum	maximum	threshold		unbiased sigma
cvuesd	0.038	-0.75	17.27	2.81		10.203
mean x	2					Normal
Minimise	**1.649**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	0.000	55	399	0.07	1.00	15.4	247.9
sigma	9.467						
cfuesd	1.071	minimum	maximum	threshold		unbiased sigma
cvuesd	0.039	-2.47	13.55	2.79		0.831
mean x	2					Normal
Minimise	**-1.723**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	0.988	48	376	0.02	1.00	7.2	93.6
sigma	0.776						

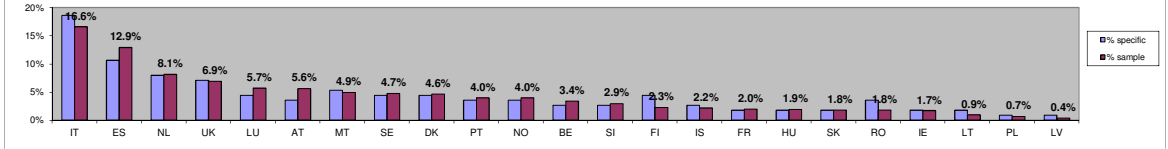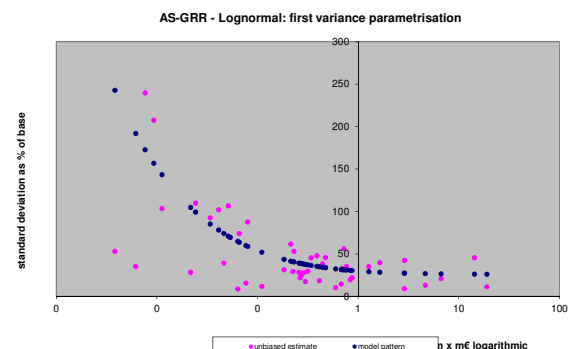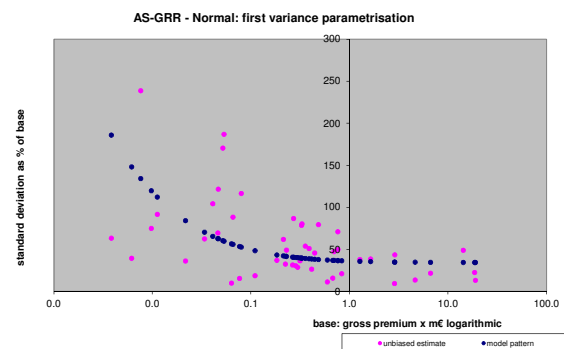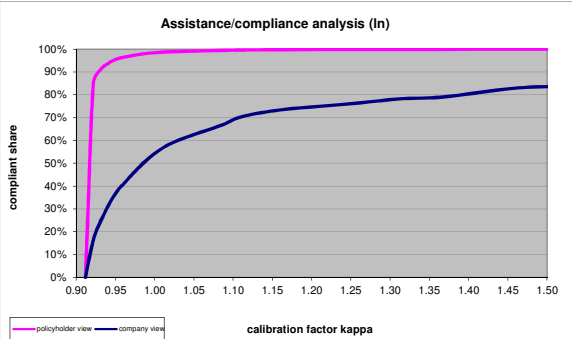| Assistance					Reserve risk	AS-GRR
cfuesd	1.078	minimum	maximum	threshold		unbiased sigma
cvuesd	0.038	-7.85	7.56	2.81		0.805
mean x	2					Lognormal
Minimise	**0.486**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-0.292	55	399	0.38	1.12	-0.3	20.5
delta	0.918						
sigma	0.747						
cfuesd	1.073	minimum	maximum	threshold		unbiased sigma
cvuesd	0.039	-3.40	3.30	2.78		0.314
mean x	2					Lognormal
Minimise	**-0.214**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-1.230	48	371	0.12	1.04	-0.3	4.0
delta	0.821						
sigma	0.292						

cfuesd	1.072	minimum	maximum	threshold		unbiased sigma
cvuesd	0.039	-2.87	4.34	2.78		0.350
mean x	2					Normal
Minimise	**-2.341**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	0.945	48	372	0.04	1.00	1.0	5.7
sigma	0.326						

cfuesd	1.073	minimum	maximum	threshold		unbiased sigma
cvuesd	0.040	-3.30	2.83	2.77		0.280
mean x	2					Lognormal
Minimise	**-0.308**	specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-1.343	47	361	0.10	1.04	-0.2	3.5
delta	0.831						
sigma	0.261						

AS-GRR - Normal: first variance parametrisation

AS-GRR - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	57.66	46.23
model pattern	54.07	39.89
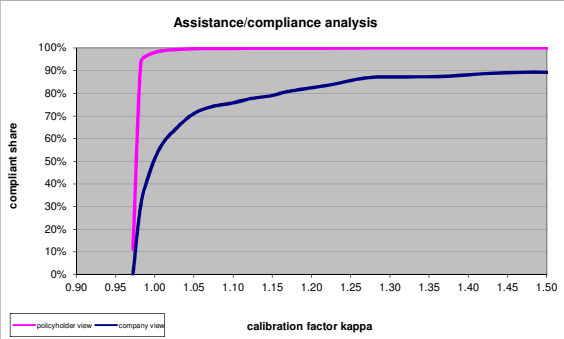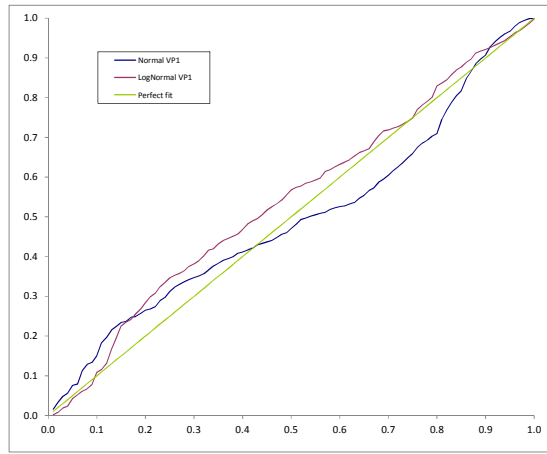
Assistance/compliance analysis

Assistance/compliance analysis (ln)

	Population average implied kappa		0.98
policyholder view	50%	Kappa	0.98
policyholder view	75%	Kappa	0.98
policyholder view	90%	Kappa	0.98
policyholder view	95%	Kappa	0.99
company view	50%	Kappa	1.00
company view	65%	Kappa	1.03

	Population average implied kappa		0.92
policyholder view	50%	Kappa	0.92
policyholder view	75%	Kappa	0.92
policyholder view	90%	Kappa	0.93
policyholder view	95%	Kappa	0.95
company view	50%	Kappa	0.99
company view	65%	Kappa	1.07
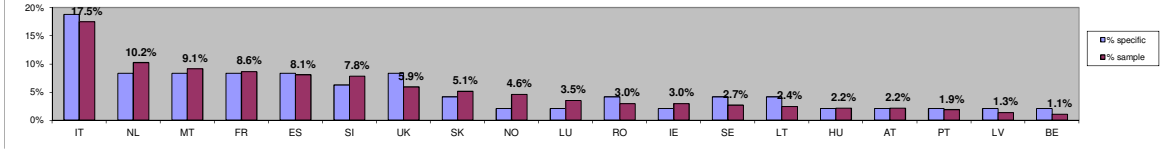
Credit and suretyship - Reserve risk

Credit and suretyship					Reserve risk	CS-GRR
cfuesd	1.069	minimum	maximum	threshold		unbiased sigma
cvuesd	0.035	-3.20	14.99	2.85		0.455
mean x	54					Normal
Minimise	1.991	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.118	57	458	0.09	1.00	8.3	115.8
sigma	0.425					

Credit and suretyship					Reserve risk	CS-GRR
cfuesd	1.069	minimum	maximum	threshold		unbiased sigma
cvuesd	0.035	-9.04	4.35	2.85		0.464
mean x	54					Lognormal
Minimise	0.318	specific	sample		standard	
ln(sigma)	-0.834	parameters	size	mean	deviation	skewness	kurtosis
delta	0.744	57	458	0.33	1.15	-2.0	20.9
sigma	0.434					

cfuesd	1.067	minimum	maximum	threshold		unbiased sigma
cvuesd	0.036	-2.88	7.72	2.83		0.242
mean x	56					Normal
Minimise	1.149	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.732	52	433	0.06	1.00	2.6	17.2
sigma	0.227					

cfuesd	1.066	minimum	maximum	threshold		unbiased sigma
cvuesd	0.036	-5.31	4.57	2.83		0.271
mean x	57					Lognormal
Minimise	-0.308	specific	sample		standard	
ln(sigma)	-1.368	parameters	size	mean	deviation	skewness	kurtosis
delta	0.836	51	429	0.14	1.07	0.1	6.9
sigma	0.255					

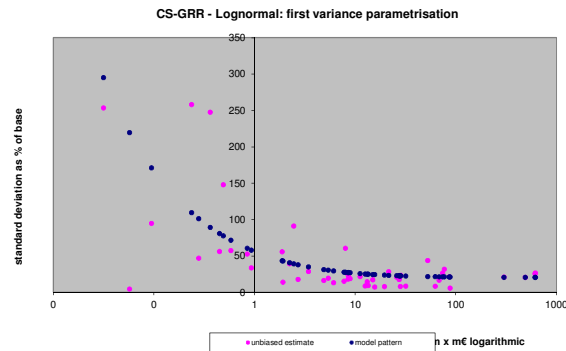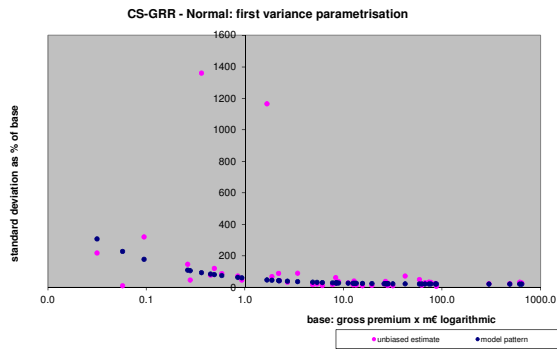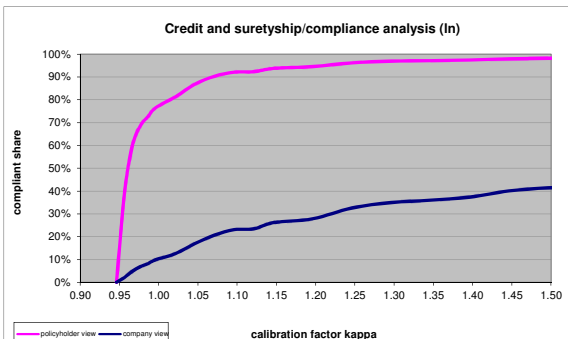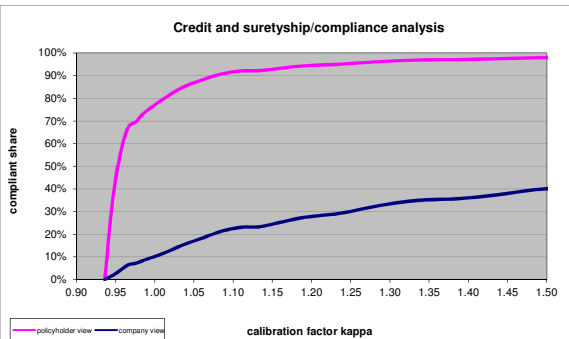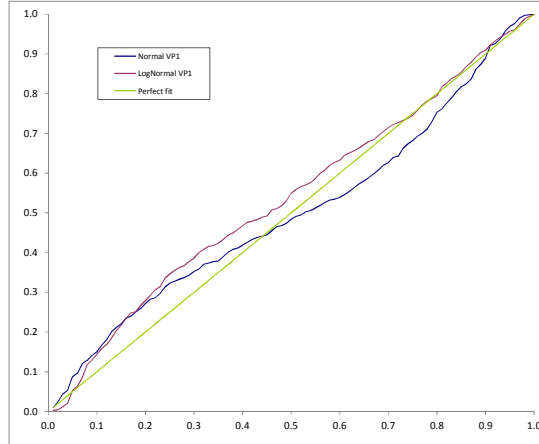| cfuesd	1.067	minimum	maximum	threshold		unbiased sigma
cvuesd	0.037	-2.65	4.65	2.82		0.204
mean x	57					Normal
Minimise	0.825	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.876	51	422	0.05	1.00	1.0	5.7
sigma	0.191					

cfuesd	1.067	minimum	maximum	threshold		unbiased sigma
cvuesd	0.037	-4.16	3.23	2.82		0.212
mean x	58					Lognormal
Minimise	-0.598	specific	sample		standard	
ln(sigma)	-1.617	parameters	size	mean	deviation	skewness	kurtosis
delta	0.895	50	413	0.10	1.05	-0.2	4.6
sigma	0.199					

CS-GRR - Normal: first variance parametrisation

CS-GRR - Lognormal: first variance parametrisation

	mean	median
unbiased estimate	94.15	28.20
model pattern	47.06	25.05

Credit and suretyship/compliance analysis

Credit and suretyship/compliance analysis (ln)

	Population average implied kappa		1.06
policyholder view	50%	Kappa	0.95
policyholder view	75%	Kappa	0.99
policyholder view	90%	Kappa	1.08
policyholder view	95%	Kappa	1.24
company view	50%	Kappa	2.11
company view	65%	Kappa	3.02

	Population average implied kappa		1.05
policyholder view	50%	Kappa	0.96
policyholder view	75%	Kappa	0.99
policyholder view	90%	Kappa	1.07
policyholder view	95%	Kappa	1.21
company view	50%	Kappa	1.97
company view	65%	Kappa	2.94
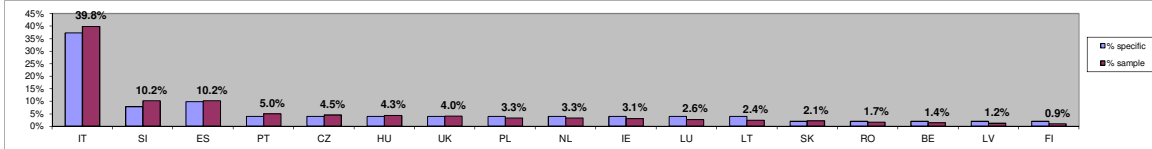
Legal expenses - Reserve risk

Legal expenses — Reserve risk — LE-GRR

Legal expenses							Reserve risk	LE-GRR
cfuesd	1.064		minimum	maximum	threshold			unbiased sigma
cvuesd	0.027		-6.81	12.00	3.01			0.433
mean x	8							Normal
Minimise	0.078		specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	0.775		87	754	0.05	1.00	5.3	63.8
sigma	0.407							
cfuesd	1.059		minimum	maximum	threshold			unbiased sigma
cvuesd	0.028		-5.82	6.56	2.99			0.183
mean x	8							Normal
Minimise	-0.843		specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	0.853		77	717	0.05	1.00	1.3	11.3
sigma	0.173							
cfuesd	1.060		minimum	maximum	threshold			unbiased sigma
cvuesd	0.028		-3.47	4.56	2.98			0.158
mean x	8							Normal
Minimise	-1.096		specific parameters	sample size	mean	standard deviation	skewness	kurtosis
delta	0.922		77	704	0.04	1.00	0.6	5.1
sigma	0.149							

Legal expenses							Reserve risk	LE-GRR
cfuesd	1.064		minimum	maximum	threshold			unbiased sigma
cvuesd	0.027		-12.36	6.28	3.01			0.620
mean x	8							Lognormal
Minimise	-0.077		specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-0.540		87	754	0.25	1.04	-2.7	44.3
sigma	0.583							
cfuesd	1.059		minimum	maximum	threshold			unbiased sigma
cvuesd	0.028		-5.57	4.32	2.99			0.210
mean x	9							Lognormal
Minimise	-0.922		specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-1.618		76	709	0.06	1.02	-0.3	7.1
sigma	0.198							
cfuesd	1.060		minimum	maximum	threshold			unbiased sigma
cvuesd	0.028		-3.31	3.49	2.98			0.169
mean x	9							Lognormal
Minimise	-1.110		specific parameters	sample size	mean	standard deviation	skewness	kurtosis
ln(sigma)	-1.835		76	695	0.05	1.01	0.1	4.1
sigma	0.160							

LE-GRR - Normal: first variance parametrisation

LE-GRR - Lognormal: first variance parametrisation
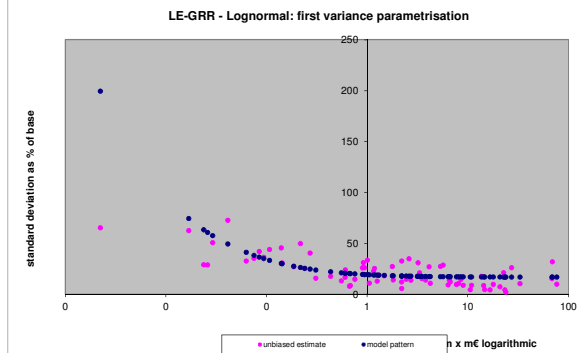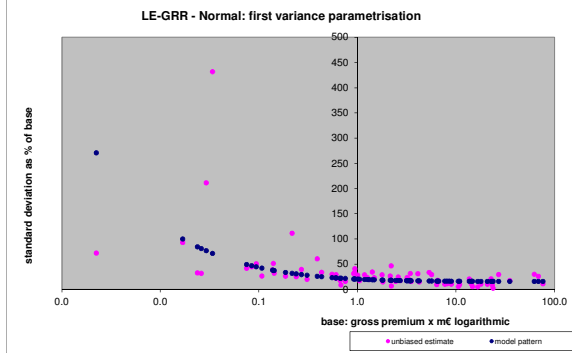
	mean	median
unbiased estimate	33.39	23.16
model pattern	28.10	17.48

Normal VP1 / LogNormal VP1 / Perfect fit

Legal expenses/compliance analysis

Legal expenses/compliance analysis (ln)

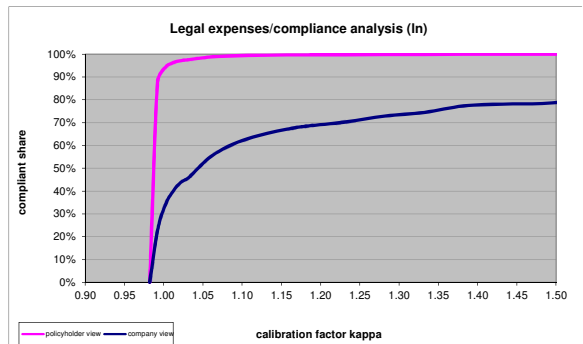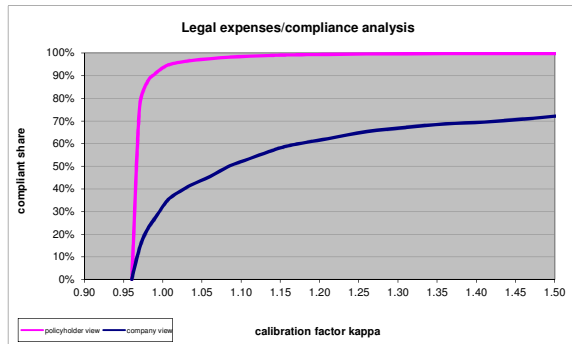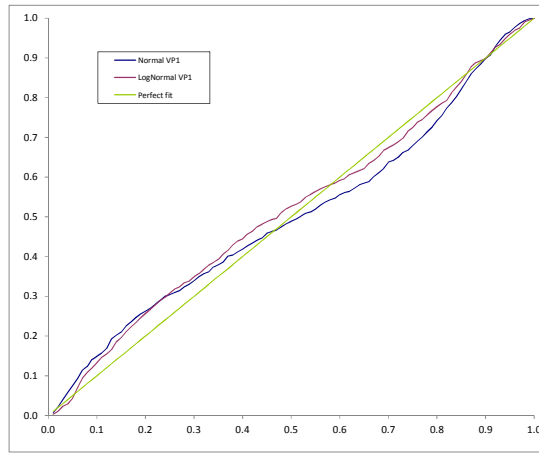|	Population average implied kappa		0.98
policyholder view	50%	Kappa	0.97
policyholder view	75%	Kappa	0.97
policyholder view	90%	Kappa	0.99
policyholder view	95%	Kappa	1.01
company view	50%	Kappa	1.08
company view	65%	Kappa	1.26

	Population average implied kappa		0.99
policyholder view	50%	Kappa	0.99
policyholder view	75%	Kappa	0.99
policyholder view	90%	Kappa	1.00
policyholder view	95%	Kappa	1.01
company view	50%	Kappa	1.04
company view	65%	Kappa	1.13

IT	BE	AT	FR	UK	LU	FI	NL	ES	SI	DK	SK	PT	HU	IE
31.4%	15.9%	12.4%	7.4%	6.8%	6.4%	5.1%	3.3%	3.1%	2.6%	1.6%	1.3%	1.0%	1.0%	0.9%

Miscellaneous financial loss - Reserve risk

Miscellaneous financial loss						Reserve risk	MISC-GRR
cfuesd	1.065	minimum	maximum	threshold			unbiased sigma
cvuesd	0.028	-0.69	25.75	2.99			4.603
mean x	24						Normal
Minimise	2.952	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.000	84	714	0.06	1.00	24.2	617.0
sigma	4.322						
cfuesd	1.063	minimum	maximum	threshold			unbiased sigma
cvuesd	0.028	-1.94	15.84	2.98			0.646
mean x	24						Normal
Minimise	0.996	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.134	80	699	0.09	1.00	11.5	166.0
sigma	0.608						

Miscellaneous financial loss						Reserve risk	MISC-GRR
cfuesd	1.065	minimum	maximum	threshold			unbiased sigma
cvuesd	0.028	-5.47	6.33	2.99			0.594
mean x	24						Lognormal
Minimise	0.570	specific	sample		standard		
ln(sigma)	-0.585	parameters	size	mean	deviation	skewness	kurtosis
delta	0.927	84	714	0.45	1.18	0.7	9.5
sigma	0.557						
cfuesd	1.064	minimum	maximum	threshold			unbiased sigma
cvuesd	0.029	-5.61	3.94	2.97			0.380
mean x	25						Lognormal
Minimise	0.097	specific	sample		standard		
ln(sigma)	-1.030	parameters	size	mean	deviation	skewness	kurtosis
delta	0.945	79	677	0.23	1.08	0.0	5.9
sigma	0.357						

cfuesd	1.064	minimum	maximum	threshold			unbiased sigma
cvuesd	0.029	-3.16	9.53	2.98			0.360
mean x	22						Normal
Minimise	-0.048	specific	sample		standard		
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.740	80	691	0.07	1.00	4.6	38.5
sigma	0.338						

cfuesd	1.065	minimum	maximum	threshold			unbiased sigma
cvuesd	0.029	-5.00	3.54	2.96			0.330
mean x	25						Lognormal
Minimise	-0.151	specific	sample		standard		
ln(sigma)	-1.172	parameters	size	mean	deviation	skewness	kurtosis
delta	0.981	77	656	0.18	1.07	0.2	4.5
sigma	0.310						

MISC-GRR - Normal: first variance parametrisation

MISC-GRR - Lognormal: first variance parametrisation
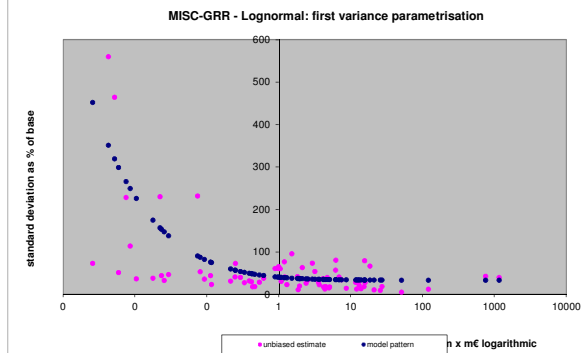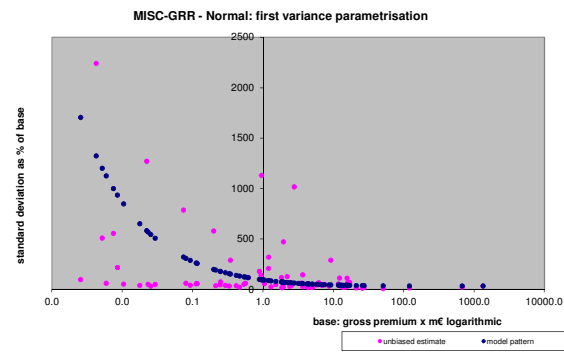
	mean	median
unbiased estimate	164.00	49.56
model pattern	213.01	69.82

Normal VP1 / LogNormal VP1 / Perfect fit

Miscellaneous financial loss/compliance analysis

Miscellaneous financial loss/compliance analysis (ln)

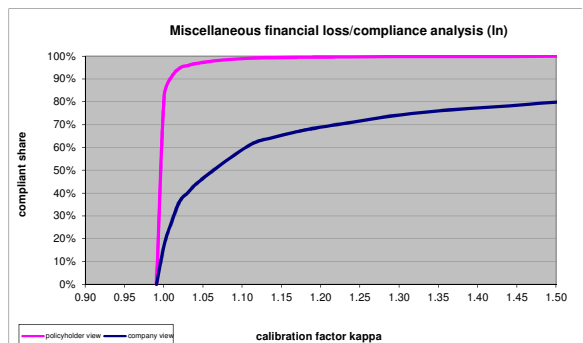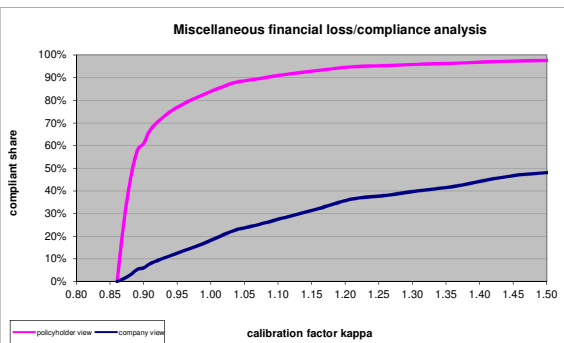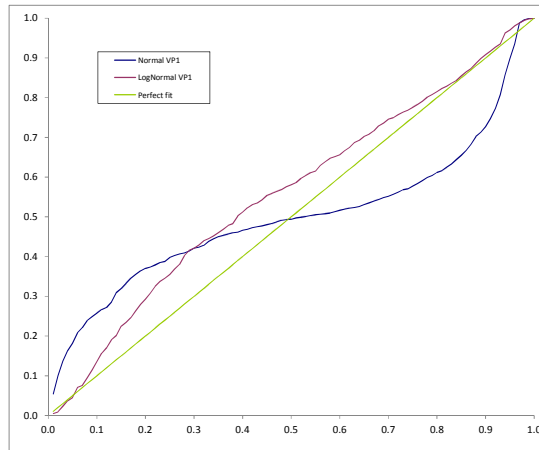|	Population average implied kappa		1.00
policyholder view	50%	Kappa	0.88
policyholder view	75%	Kappa	0.94
policyholder view	90%	Kappa	1.08
policyholder view	95%	Kappa	1.23
company view	50%	Kappa	1.56
company view	65%	Kappa	2.36

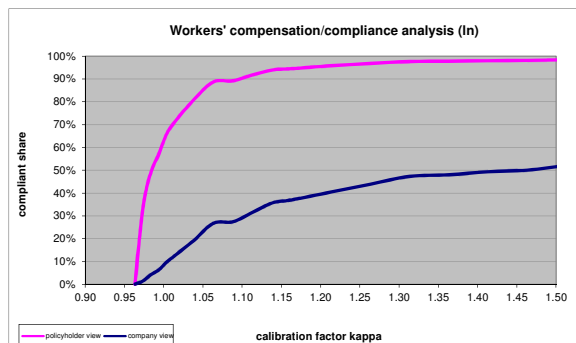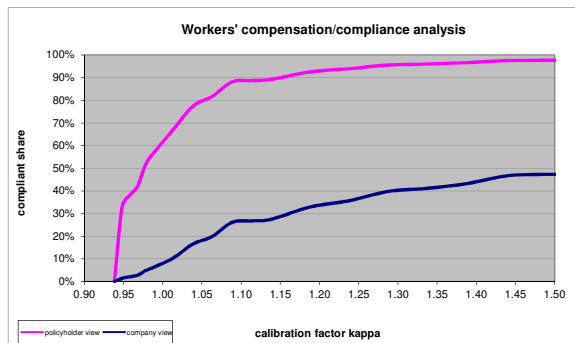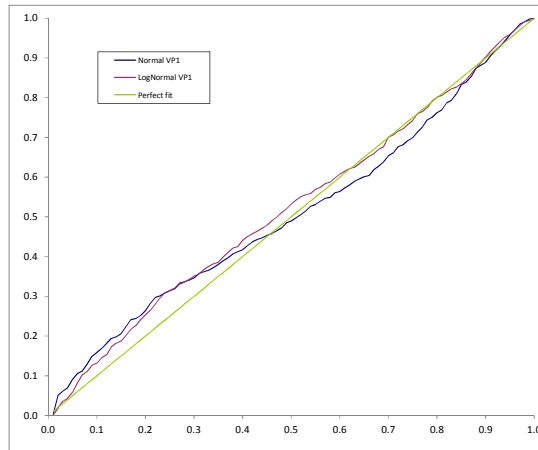|	Population average implied kappa		1.00
policyholder view	50%	Kappa	1.00
policyholder view	75%	Kappa	1.00
policyholder view	90%	Kappa	1.01
policyholder view	95%	Kappa	1.02
company view	50%	Kappa	1.06
company view	65%	Kappa	1.15
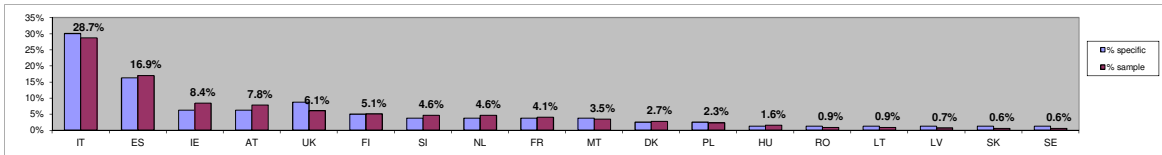
Workers' compensation - Reserve risk

Workers' compensation					Reserve risk	_HWC-GRR_
cfuesd	1.057	minimum	maximum	threshold		unbiased sigma
cvuesd	0.036	-3.80	11.81	2.83		0.220
mean x	90					Normal
Minimise	2.104	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.000	45	434	0.08	1.00	4.9	55.8
sigma	0.209					
cfuesd	1.054	minimum	maximum	threshold		unbiased sigma
cvuesd	0.037	-4.95	5.98	2.82		0.148
mean x	92					Normal
Minimise	1.509	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.790	41	413	0.06	1.00	0.8	10.2
sigma	0.140					

Workers' compensation					Reserve risk	_HWC-GRR_
cfuesd	1.057	minimum	maximum	threshold		unbiased sigma
cvuesd	0.036	-5.34	6.55	2.83		0.206
mean x	90					Lognormal
Minimise	-0.694	specific	sample		standard	
ln(sigma)	-1.635	parameters	size	mean	deviation	skewness	kurtosis
delta	0.837	45	434	0.22	1.04	0.4	14.6
sigma	0.195					
cfuesd	1.055	minimum	maximum	threshold		unbiased sigma
cvuesd	0.037	-4.05	4.17	2.82		0.150
mean x	94					Lognormal
Minimise	-1.155	specific	sample		standard	
ln(sigma)	-1.952	parameters	size	mean	deviation	skewness	kurtosis
delta	0.927	41	412	0.10	1.02	0.3	6.0
sigma	0.142					

						unbiased sigma
cfuesd	1.056	minimum	maximum	threshold		
cvuesd	0.037	-3.90	4.34	2.81		0.121
mean x	93					Normal
Minimise	1.214	specific	sample		standard	
		parameters	size	mean	deviation	skewness	kurtosis
delta	0.880	41	402	0.06	1.00	0.6	5.9
sigma	0.114					

						unbiased sigma
cfuesd	1.057	minimum	maximum	threshold		
cvuesd	0.037	-3.77	3.10	2.81		0.116
mean x	94					Lognormal
Minimise	-1.391	specific	sample		standard	
ln(sigma)	-2.206	parameters	size	mean	deviation	skewness	kurtosis
delta	0.928	41	398	0.07	1.02	0.1	4.1
sigma	0.110					

HWC-GRR - Normal: first variance parametrisation

HWC-GRR - Lognormal: first variance parametrisation
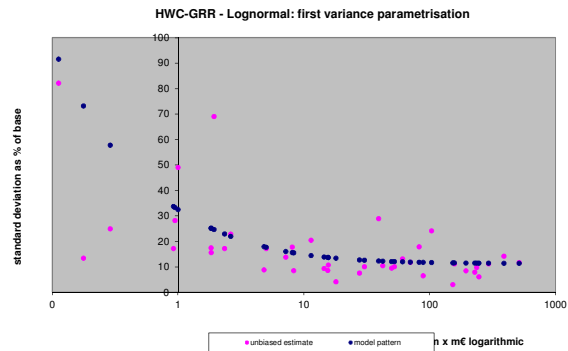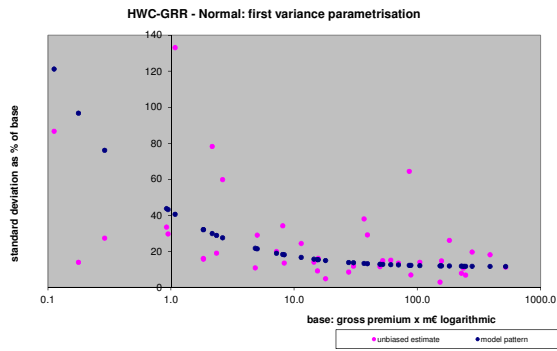
	mean	median
unbiased estimate	25.11	15.52
model pattern	24.15	14.80

Workers' compensation/compliance analysis

Workers' compensation/compliance analysis (ln)

	Population average implied kappa		1.08
policyholder view	50%	Kappa	0.98
policyholder view	75%	Kappa	1.03
policyholder view	90%	Kappa	1.15
policyholder view	95%	Kappa	1.27
company view	50%	Kappa	1.69
company view	65%	Kappa	2.56

	Population average implied kappa		1.05
policyholder view	50%	Kappa	0.98
policyholder view	75%	Kappa	1.02
policyholder view	90%	Kappa	1.10
policyholder view	95%	Kappa	1.18
company view	50%	Kappa	1.46
company view	65%	Kappa	2.20