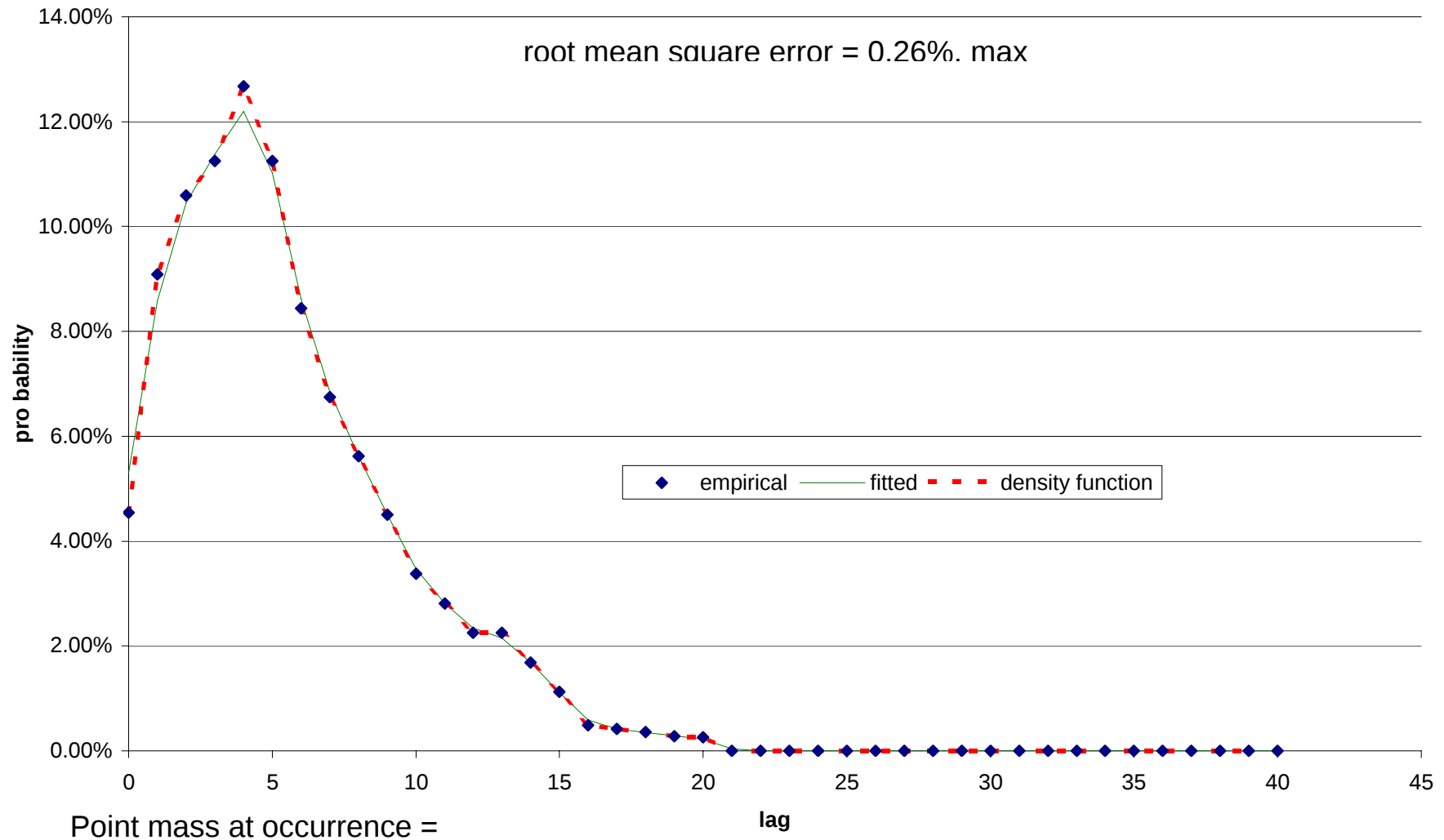


Accident Year probabilities for continuous density

Data is High Ldayer Excess

root mean square error = 0.26%. max



Density function of payment for accident year data. This is continuous piecewise linear with a mass point at zero.

Data is High Ldayer Excess Med-Mal

only insert rows between red double lines (the middle of the ranges), then copy formulas down

										point mass		weight		Payout CDF		
										2.271%	2.271%	0.000			lags	40
										minimize		rms			CDF	
										1.5756E-05	1.11E-02	square			time	
										Probability	prob diff	second				
										from fit	squared					
lag	Pr(n)	relative uncertainty	fitted difference	squared uncertainty	primary	positive	normalized									
0	4.54%	6	0.76%	36	0.21310	0.04541	0.04541	5.30%	5.7288E-05					2.27%	0	
1	9.08%	4	-0.50%	16	0.30137	0.09083	0.09083	8.58%	2.5461E-05	0.000917			9.08%	1		
2	10.60%	3	-0.14%	9	0.32552	0.10596	0.10596	10.45%	2.063E-06	7.43E-05			18.92%	2		
3	11.25%	3	0.13%	9	0.33539	0.11248	0.11248	11.38%	1.6597E-06	5.98E-05			29.84%	3		
4	12.67%	3	-0.47%	9	0.35600	0.12673	0.12673	12.20%	2.2561E-05	0.000812			41.81%	4		
5	11.25%	2	-0.23%	4	0.33539	0.11248	0.11248	11.02%	5.3449E-06	0.000192			53.77%	5		
6	8.44%	1	0.19%	1	0.29045	0.08436	0.08436	8.62%	3.5146E-06	0.000127			63.61%	6		
7	6.75%	1	0.09%	1	0.25979	0.06749	0.06749	6.84%	8.7866E-07	3.16E-05			71.20%	7		
8	5.62%	1	0.00%	1	0.23715	0.05624	0.05624	5.62%	0	1.93E-34			77.39%	8		
9	4.50%	1	0.00%	1	0.21212	0.04499	0.04499	4.50%	0	0			82.45%	9		
10	3.37%	1	0.09%	1	0.18370	0.03375	0.03375	3.47%	8.7866E-07	3.16E-05			86.39%	10		
11	2.81%	1	0.00%	1	0.16769	0.02812	0.02812	2.81%	0	1.93E-34			89.48%	11		
12	2.25%	1	0.09%	1	0.14999	0.02250	0.02250	2.34%	8.7866E-07	3.16E-05			92.01%	12		
13	2.25%	1	-0.09%	1	0.14999	0.02250	0.02250	2.16%	8.7866E-07	3.16E-05			94.26%	13		
14	1.69%	1	0.00%	1	0.12989	0.01687	0.01687	1.69%	0	0			96.23%	14		
15	1.12%	1	-0.01%	1	0.10606	0.01125	0.01125	1.11%	1.5116E-08	5.44E-07			97.64%	15		
16	0.49%	1	0.09%	1	0.06990	0.00489	0.00489	0.58%	8.956E-07	3.22E-05			98.44%	16		
17	0.42%	1	0.00%	1	0.06483	0.00420	0.00420	0.42%	4.0145E-11	1.45E-09			98.90%	17		
18	0.36%	1	0.00%	1	0.05964	0.00356	0.00356	0.35%	6.8829E-10	2.48E-08			99.28%	18		
19	0.28%	1	0.01%	1	0.05248	0.00275	0.00275	0.29%	1.2519E-08	4.51E-07			99.60%	19		
20	0.26%	1	-0.04%	1	0.05121	0.00262	0.00262	0.22%	1.7228E-07	6.2E-06			99.87%	20		
21	0.00%	1	0.04%	1	0.00000	0.00000	0.00000	0.04%	1.9099E-07	6.88E-06			100.00%	21		
22	0.00%	1	0.00%	1	0.00000	0.00000	0.00000	0.00%	0	0			100.00%	22		
23	0.00%	1	0.00%	1	0.00000	0.00000	0.00000	0.00%	0	0			100.00%	23		
24	0.00%	1	0.00%	1	0.00000	0.00000	0.00000	0.00%	0	0			100.00%	24		
25	0.00%	1	0.00%	1	0.00000	0.00000	0.00000	0.00%	0	0			100.00%	25		
26	0.00%	1	0.00%	1	0.00000	0.00000	0.00000	0.00%	0	0			100.00%	26		
27	0.00%	1	0.00%	1	0.00000	0.00000	0.00000	0.00%	0	0			100.00%	27		
28	0.00%	1	0.00%	1	0.00000	0.00000	0.00000	0.00%	0	0			100.00%	28		
29	0.00%	1	0.00%	1	0.00000	0.00000	0.00000	0.00%	0	0			100.00%	29		
30	0.00%	1	0.00%	1	0.00000	0.00000	0.00000	0.00%	0	0			100.00%	30		
31	0.00%	1	0.00%	1	0.00000	0.00000	0.00000	0.00%	0	0			100.00%	31		
32	0.00%	1	0.00%	1	0.00000	0.00000	0.00000	0.00%	0	0			100.00%	32		
33	0.00%	1	0.00%	1	0.00000	0.00000	0.00000	0.00%	0	0			100.00%	33		
34	0.00%	1	0.00%	1	0.00000	0.00000	0.00000	0.00%	0	0			100.00%	34		
35	0.00%	1	0.00%	1	0.00000	0.00000	0.00000	0.00%	0	0			100.00%	35		
36	0.00%	1	0.00%	1	0.00000	0.00000	0.00000	0.00%	0	0			100.00%	36		
37	0.00%	1	0.00%	1	0.00000	0.00000	0.00000	0.00%	0	0			100.00%	37		
38	0.00%	1	0.00%	1	0.00000	0.00000	0.00000	0.00%	0	0			100.00%	38		
39	0.00%	1	0.00%	1	0.00000	0.00000	0.00000	0.00%	0	0			100.00%	39		
40	0.00%	1	0.00%	1				0.00%	0	0			100.00%	40		

Graphics labels:
Point mass at occurrence = 2.271%
Data is High Ldayer Excess Med-Mal
root mean square error = 0.26%, max abs error = 0.76%

100,000 simulations	59 seconds	Output too	0 seconds															
lag	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
address	\$C\$7	\$C\$8	\$C\$9	\$C\$10	\$C\$11	\$C\$12	\$C\$13	\$C\$14	\$C\$15	\$C\$16	\$C\$17	\$C\$18	\$C\$19	\$C\$20	\$C\$21	\$C\$22	\$C\$23	\$C\$24
mean	4.58%	9.07%	10.48%	11.38%	12.63%	11.36%	8.38%	6.74%	5.58%	4.57%	3.30%	2.79%	2.28%	2.28%	1.67%	1.16%	0.47%	0.40%
predicted	4.53%	9.12%	10.51%	11.40%	12.54%	11.24%	8.45%	6.74%	5.63%	4.49%	3.38%	2.80%	2.26%	2.24%	1.69%	1.12%	0.49%	0.42%
error	0.050%	-0.056%	-0.024%	-0.021%	0.086%	0.125%	-0.065%	-0.006%	-0.051%	0.071%	-0.085%	-0.010%	0.019%	0.036%	-0.026%	0.039%	-0.029%	-0.017%
uncertainty	0.066%	0.091%	0.097%	0.100%	0.105%	0.100%	0.088%	0.079%	0.073%	0.066%	0.056%	0.052%	0.047%	0.047%	0.041%	0.034%	0.022%	0.020%
std error	0.76	-0.62	-0.24	-0.21	0.82	1.24	-0.74	-0.08	-0.70	1.08	-1.50	-0.18	0.39	0.76	-0.63	1.15	-1.34	-0.88
stdev	20.91%	28.71%	30.63%	31.76%	33.22%	31.74%	27.71%	25.07%	22.94%	20.87%	17.86%	16.48%	14.92%	14.91%	12.81%	10.69%	6.81%	6.30%
skewness	4.34	2.85	2.58	2.43	2.25	2.43	3.00	3.45	3.87	4.35	5.23	5.73	6.40	6.40	7.55	9.13	14.55	15.74

Payout used in this simulation

CDF	time	pdf	point mass	0.576%
0.005758	0	0.072765		
0.088108	1	0.091936		
0.187454	2	0.106755		
0.296582	3	0.1115		
0.418045	4	0.131425		
0.541484	5	0.115452		
0.639774	6	0.081128		
0.713733	7	0.066789		
0.775312	8	0.056368		
0.826137	9	0.045283		
0.864876	10	0.032195		
0.895392	11	0.028837		
0.920117	12	0.020614		
0.942593	13	0.024337		
0.962949	14	0.016376		
0.977059	15	0.011843		
0.984645	16	0.003331		
0.988573	17	0.004524		
0.992615	18	0.00356		
0.99567	19	0.00255		
0.998472	20	0.003055		
1	21	0		
1	22	0		
1	23	0		
1	24	0		
1	25	0		
1	26	0		
1	27	0		
1	28	0		
1	29	0		
1	30	0		
1	31	0		
1	32	0		
1	33	0		
1	34	0		
1	35	0		
1	36	0		
1	37	0		
1	38	0		
1	39	0		
1	40			

[illegible]

	37	38	39	40
	\$C\$44	\$C\$45	\$C\$46	\$C\$47
	0.00%	0.00%	0.00%	0.00%
	0.00%	0.00%	0.00%	0.00%
	0.000%	0.000%	0.000%	0.000%
	0.000%	0.000%	0.000%	0.000%
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	0.00%	0.00%	0.00%	0.00%
	#N/A	#N/A	#N/A	#N/A

This sheet is to do simulation to check that the probabilities are in fact generated as stated in the column "probability from fit"

lags currently available here 111; lags used 40.

lag	current event
0	0
1	0
2	0
3	0
4	1
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	0
21	0
22	0
23	0
24	0
25	0
26	0
27	0
28	0
29	0
30	0
31	0
32	0
33	0
34	0
35	0
36	0
37	0
38	0
39	0

occurrence time	0.104952
lag time until payment	4.579932
payment time	4.684884
period	4

CDF draw:		
F	index	5
48.92%	K	4
	F(K)	41.81%
	f(K)	12.67%
	f(K+1)	11.25%
	x-K	0.5799

40

0

