

Cognalysis™ Reserving System

Version 3.0 Release Notes

Summary of Changes:

- Backwards Recursive Method
- Method Toggle
- Updated Optimization Method
- Graphical Updates
- Bug Fixes and UI Improvements

Backwards Recursive Method

Cognalysis™ Reserving 3.0 sees the addition of a new prediction method, backwards recursive. This method utilizes single time-step factors to develop ultimate reserves. This method uses both the payments triangle and case reserve triangle to derive its estimates.

Users can view, and adjust the method via the Paid/Case, and Case/Case tabs (Reported/Closed, Closed/Closed for counts). The backwards recursive method then uses both factors to arrive at an ultimate estimate.

A more in-depth look at the Backwards Recursive method can be found inside of the monograph, [‘Individual Claim Development Models and Detailed Actuarial Reserves in Property-Casualty Insurance’](#) written by Gross Consulting’s CEO Chris Gross. The method is more closely discussed on pages 24 through 28.

Sample Loss Data

Dollars BF LDF BR
 Counts LDF BR

Variability Adjustment Factor: 1.00 Update
 Reserve Percentiles: 10% 5,300,840
 Mean (Selected): 25% 5,449,200
 5,624,717 50% 5,618,906
 Optimized Indication: 75% 5,793,897
 5,624,717 90% 5,956,057
 99% 6,245,798

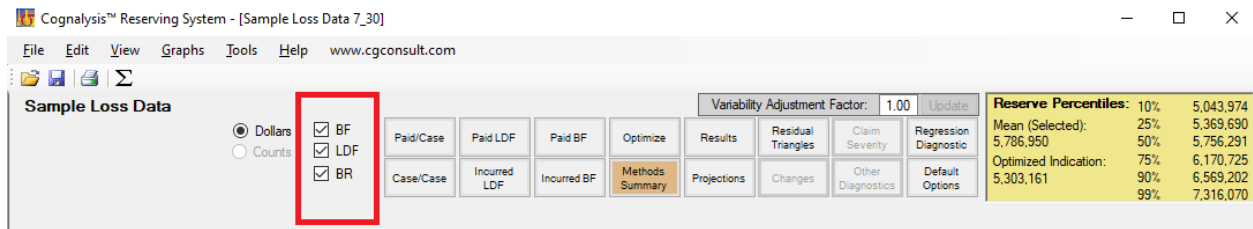
Payments Triangle	Age1	Age2	Age3	Age4	Age5	Age6	Age7	Age8	Age9	Age10
1998	79,221	128,129	143,103	85,840	106,596	37,117	38,462	26,211	4,646	3,279
1999	54,408	151,810	148,283	155,986	169,711	101,901	47,518	17,903	74,706	
2000	43,226	171,256	224,930	206,216	122,239	73,994	82,935	68,449		
2001	90,055	266,598	325,591	257,661	107,496	235,861	142,769			
2002	100,570	275,915	287,713	321,566	342,246	131,481				
2003	76,420	380,416	464,949	412,809	260,872					
2004	55,718	215,353	278,517	324,695						
2005	45,290	215,185	215,886							
2006	48,448	208,216								
2007	61,635									

Case Reserve Triangle	Age1	Age2	Age3	Age4	Age5	Age6	Age7	Age8	Age9	Age10
1998	95,383	189,272	166,022	113,520	65,233	50,921	38,820	27,134	24,295	13,509
1999	155,619	286,187	230,799	187,203	164,656	85,150	102,511	109,890	48,897	
2000	110,830	308,172	290,702	261,815	211,957	159,908	224,541	117,955		
2001	176,675	371,067	375,873	298,289	304,804	217,044	195,994			
2002	141,732	372,506	535,192	507,376	348,865	334,116				
2003	294,655	562,657	671,637	458,849	404,499					
2004	220,245	394,807	450,272	418,859						
2005	146,742	265,543	314,717							
2006	144,674	356,864								
2007	148,261									

Status

Method Toggle

Users now have the option to toggle methods on/off via the method toggle checkbox at the top of the software. When a method is toggled off, it will not appear in the optimize calculations, as well as any printed reports.



Updated Optimization Process

With the addition of the Backwards Recursive method, the "Optimize" tab has been updated to properly handle all 5 methods. There are now 31 combinations of methods.

Methods Optimization							
Method Weights							
	Paid LDF	Incurred LDF	Paid BF	Incurred BF	Backwards Recursive	St.Deviation	Estimated Reserve
▶	-0.0006	0.315	0.2923	0.3491	0.0442	255,662	5,612,501
	-0.0088	0.3663	0.3009	0.3416	0	255,835	5,629,184
	-0.0342	0.6027	0.456	0	-0.0245	267,772	5,582,744
	0.1121	0.0862	0	0.6251	0.1766	272,598	5,622,211
	0.0503	0	0.2343	0.4721	0.2433	260,397	5,532,541
	0	0.314	0.2917	0.3494	0.0448	255,636	5,610,627
	-0.03	0.5769	0.453	0	0	267,797	5,571,490
	0.0911	0.2811	0	0.6277	0	275,391	5,694,736
	0.0536	0	0.2178	0.7286	0	278,962	5,606,337
	0	0.3617	0.2939	0.3444	0	255,876	5,624,716
	0.207	0.5989	0	0	0.194	332,792	5,542,598
	0.076	0	0.455	0	0.469	291,369	5,327,607
	0	0.5612	0.4327	0	0.0061	268,299	5,554,093
	0.1212	0	0	0.6469	0.2318	272,962	5,594,619
	0	0.2281	0	0.6879	0.084	280,422	5,755,042
	0	0	0.2724	0.483	0.2446	261,879	5,558,024
	0.1844	0.8156	0	0	0	335,618	5,624,949
	0.1431	0	0.8569	0	0	399,849	5,181,671
	0	0.5673	0.4327	0	0	268,303	5,555,964
	0.1196	0	0	0.8804	0	289,211	5,662,317
	0	0.3169	0	0.6831	0	281,113	5,780,936
	0	0	0.2583	0.7417	0	280,534	5,633,932
	0.3161	0	0	0	0.6839	351,855	5,290,495
	0	0	0.5211	0	0.4789	294,425	5,359,321
	0	0.9893	0	0	0.0107	356,225	5,796,267
	0	0	0	0.7701	0.2299	283,487	5,708,055
	0	0	0	0	1	425,458	5,492,846
	0	0	0	1	0	298,882	5,772,301
	0	0	1	0	0	407,858	5,236,608
	0	1	0	0	0	356,234	5,799,548
	1	0	0	0	0	625,854	4,852,698

Updated Graphs

Many of the graphs inside of reserving have been updated to include the backwards recursive method. This includes the perspective, seed ratio, and range and methods graphs.

