DELAWARE COMPENSATION RATING BUREAU, INC.
F-CLASS FILING

Internal Rate of Return Model

The attached pages present exhibits and a description of the internal rate of return model used in deriving the DCRB's loss ratio (including loss adjustment expenses and loss-based assessments) and provision for profit and contingencies.

DELAWARE COMPENSATION RATING BUREAU, INC.

DELAWARE DECEMBER 1, 2022 F-CLASS FILING

Internal Rate of Return Analysis

The following pages present results of an economic analysis establishing the following items:

- The appropriate rate of return for writing workers compensation business, and
- The loss ratio (including loss adjustment expenses and loss-based assessments) which will allow the realization of that target rate of return in current economic conditions, based on current expense needs for stock carriers and cash flows for losses and expenses attendant with Delaware workers compensation insurance.

Internal Rate of Return Table I shows Inputs, Assumptions and Outputs underlying the analysis.

Internal Rate of Return Tables II - VII show the various cash flows projected for the underwriting of Delaware workers compensation business based on the inputs to the Internal Rate of Return model, assuming a base standard premium at DCRB level of $1 million.

Exhibits titled "Delaware Pre & Post Tax Returns" and "Delaware Cost of Capital" present the derivation of a weighted average cost of capital of 9.60 percent. This was determined by weighting the costs of equity capital and debt capital together using a debt share of capital that assumes that not all debt is related to insurance operations. The cost of equity capital of 10.66 percent was the average of Capital Asset Pricing Model ("CAPM") and Discounted Cash Flow ("DCF") analyses and the cost of debt capital was calculated as 3.66 percent.

INTERNAL RATE OF RETURN ANALYSIS
DELAWARE F-CLASS - 2022
TABLE I: INPUTS, ASSUMPTIONS & OUTPUTS

	Section 1: Inputs & Assumptions		
(1)	Commissions *		4.83
(2)	Other Expenses		4.35
(2A)	Other Acquisitions *	1.57	
(2B)	General Expenses *	2.48	
(2C)	Other Tax **	0.30	
(3)	State Premium Taxes & Uncollectible Premium		
(3A)	Tax1 - Premium Tax **		2.00
(3B)	Uncollectible Premium **		2.62
(3C)	Tax3 - Workers Compensation Fund **		0.00
(4)	Premium Discount ***		8.38
(5)	Deviations		0.00
(6)	Dividends to Policyholders		0.00
(7)	Premium Written		1,000,000
	Investment Income		
(8A)	Pre-Tax Return on Assets		4.63
(8B)	Investment Income Tax Rate		0.79
(8C)	Post-Tax Return on Assets		3.84
(10)	Reserve to Surplus Ratio		1.87
(11)	Internal Rate of Return (Cost of Capital)		9.60

* Applies to standard premium at DCRB level (before premium discount)

** Applies to net premium at company level (after deviations and premium discounts)

*** Applies to standard premium at company level (after deviations)

	Section 2: Outputs	
(1)	Loss Ratio - including loss adjustment expense & loss based assessments	77.31
(2)	Profit & Contingencies	0.51

INTERNAL RATE OF RETURN ANALYSIS
EXPLANATORY NOTES

TABLE II: CASH FLOW PATTERNS

Column (1)	Premium Collection pattern provided by the DCRB based on Delaware workers compensation data.
Column (2)	Policy Year Loss Payout pattern provided by the DCRB based on Delaware workers compensation data.
Column (3)	Other Expense Payout pattern as follows: All expenses except Commission and 1/2 General Expense flowing with earned premium. Commission flows with collected premium, and 1/2 General Expense flows with written premium.
Column (4)	Tax 1 flow assumes even quarterly payment of state premium taxes.
Column (5)	Uncollectible premium flow matches that of Column (1) – Premium collection pattern.
Column (6)	Tax 3 flow assumes even quarterly payment of Security Fund assessments.
Column (7)	No dividend provision is included in this IRR model.

INTERNAL RATE OF RETURN ANALYSIS
STATE OF DELAWARE F-CLASS - 2022
TABLE II: CASH FLOW PATTERNS

TIME FROM	INTERVAL TO	(1) PREMIUM COLLECTED	(2) POLICY YR LOSS PAYOUT	(3) OTHER EXPENSES	(4) TAX1	(5) UNCOLL PREMIUM	(6) TAX3	(7) DIVIDENDS PAID	(8) CUMULATIVE WRITTEN DISTRIBUTION	(9) CUMULATIVE EARNED DISTRIBUTION
-1.00	-0.75	0.0000	0	0.0000	0	0.0000	0	0	0	0
-0.75	-0.50	0.0003	0	0.0000	0	0.0003	0	0	0	0
-0.50	-0.25	0.0008	0	0.0000	0	0.0008	0	0	0	0
-0.25	0.00	0.0012	0	0.0000	0	0.0012	0	0	0	0
0.00	0.25	0.2135	0.618	19.7438	25	0.2135	25	0	0.2637	0.0329
0.25	0.50	3.3439	1.236	22.4835	25	3.3439	25	0	0.5408	0.1338
0.50	0.75	9.0451	1.854	24.1078	25	9.0451	25	0	0.8156	0.3048
0.75	1.00	14.4599	2.472	19.4120	25	14.4599	25	0	1.0000	0.5348
1.00	1.25	20.9919	5.7625	6.2356	0	20.9919	0	0	1.0000	0.7498
1.25	1.50	16.3648	5.7625	4.4540	0	16.3648	0	0	1.0000	0.8974
1.50	1.75	13.6339	5.7625	2.6724	0	13.6339	0	25	1.0000	0.9772
1.75	2.00	9.1761	5.7625	0.8908	0	9.1761	0	25	1.0000	1.0000
2.00	2.25	4.9981	4.3	0.0000	0	4.9981	0	25	1.0000	1.0000
2.25	2.50	2.7160	4.3	0.0000	0	2.7160	0	25	1.0000	1.0000
2.50	2.75	1.8088	4.3	0.0000	0	1.8088	0	0	1.0000	1.0000
2.75	3.00	0.9484	4.3	0.0000	0	0.9484	0	0	1.0000	1.0000
3.00	3.25	0.5077	2.7725	0.0000	0	0.5077	0	0	1.0000	1.0000
3.25	3.50	0.3019	2.7725	0.0000	0	0.3019	0	0	1.0000	1.0000
3.50	3.75	0.1950	2.7725	0.0000	0	0.1950	0	0	1.0000	1.0000
3.75	4.00	0.1141	2.7725	0.0000	0	0.1141	0	0	1.0000	1.0000
4.00	4.25	0.0574	1.6	0.0000	0	0.0574	0	0	1.0000	1.0000
4.25	4.50	0.0975	1.6	0.0000	0	0.0975	0	0	1.0000	1.0000
4.50	4.75	0.1441	1.6	0.0000	0	0.1441	0	0	1.0000	1.0000
4.75	5.00	0.1277	1.6	0.0000	0	0.1277	0	0	1.0000	1.0000
5.00	6.00	0.0692	4.21	0.0000	0	0.0692	0	0	1.0000	1.0000
6.00	7.00	0.1204	3.13	0.0000	0	0.1204	0	0	1.0000	1.0000
7.00	8.00	0.2105	2.52	0.0000	0	0.2105	0	0	1.0000	1.0000
8.00	9.00	0.1800	2.14	0.0000	0	0.1800	0	0	1.0000	1.0000
9.00	10.00	0.0463	1.87	0.0000	0	0.0463	0	0	1.0000	1.0000
10.00	11.00	0.0412	1.67	0.0000	0	0.0412	0	0	1.0000	1.0000
11.00	12.00	0.0421	1.5	0.0000	0	0.0421	0	0	1.0000	1.0000
12.00	13.00	0.0422	1.35	0.0000	0	0.0422	0	0	1.0000	1.0000
13.00	14.00	0.0000	1.22	0.0000	0	0.0000	0	0	1.0000	1.0000
14.00	15.00	0.0000	1.1	0.0000	0	0.0000	0	0	1.0000	1.0000
15.00	16.00	0.0000	0.98	0.0000	0	0.0000	0	0	1.0000	1.0000
16.00	17.00	0.0000	0.89	0.0000	0	0.0000	0	0	1.0000	1.0000
17.00	18.00	0.0000	0.79	0.0000	0	0.0000	0	0	1.0000	1.0000
18.00	19.00	0.0000	0.7	0.0000	0	0.0000	0	0	1.0000	1.0000
19.00	20.00	0.0000	0.62	0.0000	0	0.0000	0	0	1.0000	1.0000
20.00	21.00	0.0000	0.6	0.0000	0	0.0000	0	0	1.0000	1.0000
21.00	22.00	0.0000	0.58	0.0000	0	0.0000	0	0	1.0000	1.0000
22.00	23.00	0.0000	0.56	0.0000	0	0.0000	0	0	1.0000	1.0000
23.00	24.00	0.0000	0.54	0.0000	0	0.0000	0	0	1.0000	1.0000
24.00	25.00	0.0000	0.52	0.0000	0	0.0000	0	0	1.0000	1.0000
25.00	26.00	0.0000	0.5	0.0000	0	0.0000	0	0	1.0000	1.0000
26.00	27.00	0.0000	0.48	0.0000	0	0.0000	0	0	1.0000	1.0000
27.00	28.00	0.0000	0.46	0.0000	0	0.0000	0	0	1.0000	1.0000
28.00	29.00	0.0000	0.44	0.0000	0	0.0000	0	0	1.0000	1.0000
29.00	30.00	0.0000	0.42	0.0000	0	0.0000	0	0	1.0000	1.0000
30.00	31.00	0.0000	0.41	0.0000	0	0.0000	0	0	1.0000	1.0000
31.00	32.00	0.0000	0.4	0.0000	0	0.0000	0	0	1.0000	1.0000
32.00	33.00	0.0000	0.39	0.0000	0	0.0000	0	0	1.0000	1.0000
33.00	34.00	0.0000	0.38	0.0000	0	0.0000	0	0	1.0000	1.0000
34.00	35.00	0.0000	0.37	0.0000	0	0.0000	0	0	1.0000	1.0000
35.00	36.00	0.0000	0.36	0.0000	0	0.0000	0	0	1.0000	1.0000
36.00	37.00	0.0000	0.35	0.0000	0	0.0000	0	0	1.0000	1.0000
37.00	38.00	0.0000	0.34	0.0000	0	0.0000	0	0	1.0000	1.0000
38.00	39.00	0.0000	0.33	0.0000	0	0.0000	0	0	1.0000	1.0000
39.00	40.00	0.0000	0.32	0.0000	0	0.0000	0	0	1.0000	1.0000
40.00	41.00	0.0000	0.31	0.0000	0	0.0000	0	0	1.0000	1.0000
41.00	42.00	0.0000	0.3	0.0000	0	0.0000	0	0	1.0000	1.0000
42.00	43.00	0.0000	0.29	0.0000	0	0.0000	0	0	1.0000	1.0000
43.00	44.00	0.0000	0.28	0.0000	0	0.0000	0	0	1.0000	1.0000
44.00	45.00	0.0000	0.27	0.0000	0	0.0000	0	0	1.0000	1.0000
45.00	46.00	0.0000	0.26	0.0000	0	0.0000	0	0	1.0000	1.0000
46.00	47.00	0.0000	0.25	0.0000	0	0.0000	0	0	1.0000	1.0000
47.00	48.00	0.0000	0.24	0.0000	0	0.0000	0	0	1.0000	1.0000
48.00	49.00	0.0000	0.23	0.0000	0	0.0000	0	0	1.0000	1.0000
49.00	50.00	0.0000	0.21	0.0000	0	0.0000	0	0	1.0000	1.0000
		100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000		

INTERNAL RATE OF RETURN ANALYSIS
EXPLANATORY NOTES

TABLE III: CASH FLOW FOR LOSS AND UNEARNED PREMIUM RESERVES
PAGE 1

Column (1) Premium Collected based on collection pattern from Table II, Column (1).

Example: $916,200 x 0.000023 = $21.07

Column (2) Agents' Balances reflects the difference between Written Premium and Collected Premium. Written Premium pattern provided by the DCRB for Delaware workers compensation insurance.

Example: Written Premium, First Quarter = 0.25 x $916,200 = $229,050.00
Collected Premium = (0.000023 + 0.002135) x $916,200 = $1,977.16
Written - Collected = $227,072.84

Column (3) Overdue Agent's Balances are all Agents' Balances due after the end of the 24-month period in which earnings of policy year premium occurs.

Column (4) Admitted Agents' Balances reflect all Agents' Balances due prior to the end of the 24-month period in which earnings of policy year premium occurs.

Column (5) Losses Incurred is computed by applying the loss ratio for the business to earned premiums at DCRB level (i.e., before premium discounts). Premium earning pattern provided by the DCRB for Delaware workers compensation insurance.

Example: 0.7731 x $1,000,000 x 0.0329 = $25,434.99

Column (6) Unearned Premiums is computed as Cumulative Written Premium less Cumulative Earned Premium.

Example: $241,601.94 - $30,142.98 = $211,458.96

Column (7) Total Premium Net of Reserves is computed as Collected Premium plus Admitted Agents' Balances less Losses Incurred less Unearned Premium Reserves.

Example: $1,977.16 + $227,072.84 - $25,434.99 - $211,458.96 = ($7,843.95)

INTERNAL RATE OF RETURN ANALYSIS
EXPLANATORY NOTES

TABLE III: CASH FLOW FOR LOSS AND UNEARNED PREMIUM RESERVES PAGE 2

Column (8) Premium Net of Reserves is the periodic change in Column (7).

Example: ($7,843.95) - $0.00 = ($7,843.95)

Column (9) Cumulative Written Premium is total written premium times the cumulative written premium distribution (Table II, column (8)).

Example: $916,200 x 0.2637 = $241,601.94

Column (10) Cumulative Earned Premium is total earned premium times the cumulative earned premium distribution (Table II, column (9)).

Example: $916,200 x 0.0329 = $30,142.98

ASSIGNED RISK
INTERNAL RATE OF RETURN ANALYSIS
STATE OF DELAWARE F-CLASS - 2022
TABLE III: CASH FLOW FOR LOSS AND UNEARNED PREMIUM RESERVES

TIME FROM	INTERVAL TO	(1) PREMIUM COLLECTED	(2) AGENTS BALANCES	(3) OVERDUE AGENTS BALANCE	(4) ADMITTED AGENTS BALANCES	(5) LOSSES INCURRED	(6) UNEARNED PREMIUMS	(7) TOTAL PREM NET OF RESERVES	(8) PREMIUM NET OF RESERVES	(9) CUMULATIVE WRITTEN PREMIUM	(10) CUMULATIVE EARNED PREMIUM
-1.00	-0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-0.75	-0.50	2.75	-2.75	0.00	-2.75	0.00	0.00	0.00	0.00	0.00	0.00
-0.50	-0.25	10.08	-10.08	0.00	-10.08	0.00	0.00	0.00	0.00	0.00	0.00
-0.25	0.00	21.07	-21.07	0.00	-21.07	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.25	1,977.16	227,072.84	0.00	227,072.84	25,434.99	211,458.96	-7,843.95	-7,843.95	241,601.94	30,142.98
0.25	0.50	32,613.97	425,486.03	0.00	425,486.03	103,440.78	372,893.40	-18,234.18	-10,390.23	495,480.96	122,587.56
0.50	0.75	115,485.18	571,664.82	0.00	571,664.82	235,640.88	467,994.96	-16,485.84	1,748.34	747,252.72	279,257.76
0.75	1.00	247,966.78	668,233.22	0.00	668,233.22	413,453.88	426,216.24	76,529.88	93,015.72	916,200.00	489,983.76
1.00	1.25	440,294.57	475,905.43	0.00	475,905.43	579,670.38	229,233.24	107,296.38	30,766.50	916,200.00	686,966.76
1.25	1.50	590,228.87	325,971.13	0.00	325,971.13	693,779.94	94,002.12	128,417.94	21,121.56	916,200.00	822,197.88
1.50	1.75	715,142.66	201,057.34	0.00	201,057.34	755,473.32	20,889.36	139,837.32	11,419.38	916,200.00	895,310.64
1.75	2.00	799,214.09	116,985.91	0.00	116,985.91	773,100.00	0.00	143,100.00	3,262.68	916,200.00	916,200.00
2.00	2.25	845,006.68	71,193.32	71,193.32	0.00	773,100.00	0.00	71,906.68	-71,193.32	0.00	0.00
2.25	2.50	869,890.67	46,309.33	46,309.33	0.00	773,100.00	0.00	96,790.67	24,883.99	0.00	0.00
2.50	2.75	886,462.90	29,737.10	29,737.10	0.00	773,100.00	0.00	113,362.90	16,572.23	0.00	0.00
2.75	3.00	895,152.14	21,047.86	21,047.86	0.00	773,100.00	0.00	122,052.14	8,689.24	0.00	0.00
3.00	3.25	899,803.68	16,396.32	16,396.32	0.00	773,100.00	0.00	126,703.68	4,651.55	0.00	0.00
3.25	3.50	902,569.69	13,630.31	13,630.31	0.00	773,100.00	0.00	129,469.69	2,766.01	0.00	0.00
3.50	3.75	904,356.28	11,843.72	11,843.72	0.00	773,100.00	0.00	131,256.28	1,786.59	0.00	0.00
3.75	4.00	905,401.67	10,798.33	10,798.33	0.00	773,100.00	0.00	132,301.67	1,045.38	0.00	0.00
4.00	4.25	905,927.57	10,272.43	10,272.43	0.00	773,100.00	0.00	132,827.57	525.90	0.00	0.00
4.25	4.50	906,820.86	9,379.14	9,379.14	0.00	773,100.00	0.00	133,720.86	893.30	0.00	0.00
4.50	4.75	908,141.10	8,058.90	8,058.90	0.00	773,100.00	0.00	135,041.10	1,320.24	0.00	0.00
4.75	5.00	909,311.09	6,888.91	6,888.91	0.00	773,100.00	0.00	136,211.09	1,169.99	0.00	0.00
5.00	6.00	909,945.10	6,254.90	6,254.90	0.00	773,100.00	0.00	136,845.10	634.01	0.00	0.00
6.00	7.00	911,048.21	5,151.79	5,151.79	0.00	773,100.00	0.00	137,948.21	1,103.10	0.00	0.00
7.00	8.00	912,976.81	3,223.19	3,223.19	0.00	773,100.00	0.00	139,876.81	1,928.60	0.00	0.00
8.00	9.00	914,625.97	1,574.03	1,574.03	0.00	773,100.00	0.00	141,525.97	1,649.16	0.00	0.00
9.00	10.00	915,050.17	1,149.83	1,149.83	0.00	773,100.00	0.00	141,950.17	424.20	0.00	0.00
10.00	11.00	915,427.64	772.36	772.36	0.00	773,100.00	0.00	142,327.64	377.47	0.00	0.00
11.00	12.00	915,813.36	386.64	386.64	0.00	773,100.00	0.00	142,713.36	385.72	0.00	0.00
12.00	13.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	386.64	0.00	0.00
13.00	14.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
14.00	15.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
15.00	16.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
16.00	17.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
17.00	18.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
18.00	19.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
19.00	20.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
20.00	21.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
21.00	22.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
22.00	23.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
23.00	24.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
24.00	25.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
25.00	26.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
26.00	27.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
27.00	28.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
28.00	29.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
29.00	30.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
30.00	31.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
31.00	32.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
32.00	33.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
33.00	34.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
34.00	35.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
35.00	36.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
36.00	37.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
37.00	38.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
38.00	39.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
39.00	40.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
40.00	41.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
41.00	42.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
42.00	43.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
43.00	44.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
44.00	45.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
45.00	46.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
46.00	47.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
47.00	48.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
48.00	49.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00
49.00	50.00	916,200.00	0.00	0.00	0.00	773,100.00	0.00	143,100.00	0.00	0.00	0.00

INTERNAL RATE OF RETURN ANALYSIS
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TABLE IV: TAX CREDITS AVAILABLE FROM UNDERWRITING OPERATIONS
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Column (1) The net written premium underlying the model, i.e., $1 million less premium discounts, or $916,200.00

Column (2) The periodic change in the Unearned Premium Reserve shown in Table III, Column (6).

Example: $426,216.24 - 0 = $426,216.24

Column (3) The sum of the products of the expense flows shown in Table II and their associated expense provisions as shown on Table I, multiplied times the premium base.

Example:

Item	Provisions (%)	Year 1 Expense Flow	Year 1 Expense Ratio %	Premium Base	Year 1 Expense $
	(a)	(b)	(c)=(a)*(b)	(d)	(e)=(c)*(d)
Commission	4.83	0.002706	0.013071	1,000,000	13,071.14
General Expense	2.48	0.007500	0.018600	1,000,000	18,600.00
Other Acquisition	1.57	0.010000	0.015700	1,000,000	15,700.00
Other Tax	0.30	0.010000	0.003000	916,200	2,748.60
Uncollectible Prem	2.62	0.002706	0.007090	916,200	6,496.18
Tax 1:	2.00	0.010000	0.020000	916,200	18,324.00
Total					74,939.92

Column (4) & Column (5) The Losses Paid for Accident Years 1 and 2, respectively, are based on payout patterns provided by the DCRB for Delaware workers compensation insurance.

Example: Accident Year 1, Year 1 Payout

(0.1236 / 2) x 0.7731 x $1,000,000 = $47,777.58

INTERNAL RATE OF RETURN ANALYSIS
EXPLANATORY NOTES

TABLE IV: TAX CREDITS AVAILABLE FROM UNDERWRITING OPERATIONS
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Column (6) The IRS Discount Factors are a tabulation of discount factors published for carriers by the Internal Revenue Service.

Column (7) & Column (8) The Losses Discounted for Accident Years 1 and 2, respectively, are the change in discounted reserves for each accident year implied by the loss ratio, premium earnings pattern and IRS discount factors incorporated into the model.

Example: Accident Year 1, Year 2 Losses Discounted

Accident Year 1 Incurred at End of Year 2: $413,453.88
Accident Year 1 Paid Through Year 2:
$47,777.58 + 106,030.67 = $153,808.25
Accident Year 1 Undiscovered Reserve, Year 2:
$413,453.88 - 153,808.25 = $259,645.64
IRS Discount Factor: 0.8693
Accident Year 1 Discounted Reserve, Year 2:
$259,645.64 x 0.8693 = $225,714.88
Accident Year 1 Incurred at End of Year 1: $413,453.88
Accident Year 1 Paid Through Year 1: $47,777.58
Accident Year 1 Undiscounted Reserve, Year 1:
$413,453.88 - 47,777.58 = $365,676.30
IRS Discount Factor: 0.8839
Accident Year 1 Discounted Reserve, Year 1:
$365,676.30 x 0.8839 = $323,222.01

Change in Discounted Reserves, Year 1 to 2:
$225,714.88 - $323,222.01 = ($97,507.13)

Column (9) Tax Credits are computed as follows:

Underwriting Tax Rate X

(- Written Premium
+ 0.8 x Change in Unearned Premium
+ Expenses Paid
+ Losses Paid
+ Change in Discounted Loss Reserve)

ASSIGNED RISK
INTERNAL RATE OF RETURN ANALYSIS
STATE OF DELAWARE F-CLASS - 2022
TABLE IV: TAX CREDITS AVAILABLE FROM UNDERWRITING OPERATIONS

YEAR	(1) PREMIUM WRITTEN (POST-DEV)	(2) CHANGE IN UNEARN PREM RESERVE	(3) EXPENSES	(4) LOSSES PAID ACCIDENT YEAR 1	(5) LOSSES PAID ACCIDENT YEAR 2	(6) IRS DISCOUNT FACTOR	(7) LOSSES DISCOUNTED ACCIDENT YEAR 1	(8) LOSSES DISCOUNTED ACCIDENT YEAR 2	(9) TAX CREDITS
-1	0.00	0.00	1.66	0.00	0.00	0	0.00	0.00	0.35
1	916,200.00	426,216.24	74,939.92	47,777.58	0.00	0.8839	323,222.01	0.00	-27,150.37
2	0.00	-426,216.24	49,703.20	106,030.67	72,168.89	0.8693	-97,507.13	254,101.70	9,140.11
3	0.00	0.00	7,571.21	68,805.90	64,167.30	0.8588	-61,829.73	-59,974.13	3,935.51
4	0.00	0.00	808.87	38,075.18	47,661.62	0.8443	-34,898.70	-43,288.17	1,755.35
5	0.00	0.00	308.52	20,951.01	28,527.39	0.8390	-18,394.62	-26,618.14	1,002.58
6	0.00	0.00	50.03	13,645.22	18,902.30	0.8340	-12,043.22	-16,645.57	820.84
7	0.00	0.00	87.05	10,668.78	13,529.25	0.8376	-8,510.96	-11,928.41	807.60
8	0.00	0.00	152.20	8,929.31	10,552.82	0.8458	-6,664.57	-8,426.34	954.12
9	0.00	0.00	130.15	7,769.66	8,774.69	0.8518	-6,029.23	-6,561.57	857.58
10	0.00	0.00	33.48	6,880.59	7,576.38	0.8701	-4,328.08	-5,883.77	898.51
11	0.00	0.00	29.79	6,184.80	6,725.97	0.8818	-4,465.30	-4,248.62	887.59
12	0.00	0.00	30.44	5,604.98	5,991.53	0.8938	-4,077.31	-4,328.56	676.43
13	0.00	0.00	30.51	5,025.15	5,411.70	0.9061	-3,671.94	-3,936.55	600.36
14	0.00	0.00	0.00	4,561.29	4,870.53	0.9185	-3,354.88	-3,562.07	528.12
15	0.00	0.00	0.00	4,097.43	4,406.67	0.9312	-3,023.61	-3,241.71	470.14
16	0.00	0.00	0.00	3,672.23	3,904.16	0.9440	-2,714.09	-2,871.04	418.16
17	0.00	0.00	0.00	3,324.33	3,556.26	0.9571	-2,465.21	-2,630.00	374.93
18	0.00	0.00	0.00	2,937.78	3,169.71	0.9704	-2,169.79	-2,341.50	335.20
19	0.00	0.00	0.00	2,589.89	2,821.82	0.9835	-1,909.95	-2,079.77	298.62
20	0.00	0.00	0.00	2,319.30	2,473.92	0.9860	-2,171.33	-1,816.72	169.09
21	0.00	0.00	0.00	2,241.99	2,396.61	0.9860	-2,210.60	-2,251.26	37.12
22	0.00	0.00	0.00	2,203.34	2,280.65	0.9860	-2,172.49	-2,248.71	13.18
23	0.00	0.00	0.00	2,126.03	2,203.34	0.9860	-2,096.26	-2,172.49	12.73
24	0.00	0.00	0.00	2,048.72	2,126.03	0.9860	-2,020.03	-2,096.26	12.27
25	0.00	0.00	0.00	1,971.41	2,048.72	0.9860	-1,943.80	-2,020.03	11.82
26	0.00	0.00	0.00	1,894.10	1,971.41	0.9860	-1,867.58	-1,943.80	11.37
27	0.00	0.00	0.00	1,816.79	1,894.10	0.9860	-1,791.35	-1,867.58	10.91
28	0.00	0.00	0.00	1,739.48	1,816.79	0.9860	-1,715.12	-1,791.35	10.46
29	0.00	0.00	0.00	1,662.17	1,739.48	0.9860	-1,638.89	-1,715.12	10.00
30	0.00	0.00	0.00	1,584.86	1,662.17	0.9860	-1,562.67	-1,638.89	9.55
31	0.00	0.00	0.00	1,584.86	1,584.86	0.9860	-1,562.67	-1,562.67	9.32
32	0.00	0.00	0.00	1,546.20	1,546.20	0.9860	-1,524.55	-1,524.55	9.09
33	0.00	0.00	0.00	1,507.55	1,507.55	0.9860	-1,486.44	-1,486.44	8.86
34	0.00	0.00	0.00	1,468.89	1,468.89	0.9860	-1,448.32	-1,448.32	8.64
35	0.00	0.00	0.00	1,430.24	1,430.24	0.9860	-1,410.21	-1,410.21	8.41
36	0.00	0.00	0.00	1,391.58	1,391.58	0.9860	-1,372.10	-1,372.10	8.18
37	0.00	0.00	0.00	1,352.93	1,352.93	0.9860	-1,333.98	-1,333.98	7.96
38	0.00	0.00	0.00	1,314.27	1,314.27	0.9860	-1,295.87	-1,295.87	7.73
39	0.00	0.00	0.00	1,275.62	1,275.62	0.9860	-1,257.76	-1,257.76	7.50
40	0.00	0.00	0.00	1,236.96	1,236.96	0.9860	-1,219.64	-1,219.64	7.27
41	0.00	0.00	0.00	1,198.31	1,198.31	0.9860	-1,181.53	-1,181.53	7.05
42	0.00	0.00	0.00	1,159.65	1,159.65	0.9860	-1,143.41	-1,143.41	6.82
43	0.00	0.00	0.00	1,121.00	1,121.00	0.9860	-1,105.30	-1,105.30	6.59
44	0.00	0.00	0.00	1,082.34	1,082.34	0.9860	-1,067.19	-1,067.19	6.36
45	0.00	0.00	0.00	1,043.69	1,043.69	0.9860	-1,029.07	-1,029.07	6.14
46	0.00	0.00	0.00	1,005.03	1,005.03	0.9860	-990.96	-990.96	5.91
47	0.00	0.00	0.00	966.38	966.38	0.9860	-952.84	-952.84	5.68
48	0.00	0.00	0.00	927.72	927.72	0.9860	-914.73	-914.73	5.46
49	0.00	0.00	0.00	889.07	889.07	0.9860	-876.62	-876.62	5.23
50	0.00	0.00	0.00	811.76	811.76	0.9860	-800.39	-800.39	4.77
	916,200.00		133,877.04	413,453.88	359,646.12				

SOURCES: COL. 1: TABLE IV
COL. 2: COL. 1
COL. 3: COLS. 3, 4, 5, 6 & 7, TABLE III; AND TABLE IV
COLS. 4 & 5: WEIGHTS FOR ACCIDENT YEAR DISTRIBUTION:
SEE ACCIDENT YEAR DISTRIBUTION

COL. 6: U. S. INTERNAL REVENUE SERVICE DISCOUNT FACTORS
COLS. 7 & 8: CHANGE IN DISCOUNTED OUTSTANDING USING IRS FACTORS
COL. 9: .21 x (COL. 1 - (.8 x COL. 2) - COL. 4 - COL. 5 - COL 7 - COL. 8)

INTERNAL RATE OF RETURN ANALYSIS
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TABLE V: NET CASH FLOWS FROM UNDERWRITING

Column (1) The Premium Flow Net of Reserves is Column (8) of Table III.

Column (2) Tax Credits from Underwriting is a quarterly flow of those credits in Column (9) in

Column (3) Expenses show a quarterly flow of Expenses prepared in the same fashion as the annual flows in Column (3) of Table IV.

Column (4) Dividends are not used in this model as no provision has been made for dividends in this analysis.

Column (5) Net Cash Flow from Underwriting is computed by adding Column (1) and Column (2) and subtracting Column (3).

ASSIGNED RISK
INTERNAL RATE OF RETURN ANALYSIS
STATE OF DELAWARE F-CLASS - 2022
TABLE V: NET CASH FLOWS FROM UNDERWRITING

TIME FROM	INTERVAL TO	(1) PREMIUM FLOW NET OF RESERVES	(2) TAX CREDITS FROM UNDERWRITING	(3) EXPENSES	(4) DIVIDENDS	(5) NET CASH FLOW FROM UNDERWRITING
-1.00	-0.75	0.00	0.09	0.00	0.00	0.09
-0.75	-0.50	0.00	0.09	0.22	0.00	-0.13
-0.50	-0.25	0.00	0.09	0.58	0.00	-0.49
-0.25	0.00	0.00	0.09	0.87	0.00	-0.78
0.00	0.25	-7,843.95	-6,787.59	13,257.65	0.00	-27,889.19
0.25	0.50	-10,390.23	-6,787.59	16,709.44	0.00	-33,887.26
0.50	0.75	1,748.34	-6,787.59	21,538.79	0.00	-26,578.04
0.75	1.00	93,015.72	-6,787.59	23,434.05	0.00	62,794.08
1.00	1.25	30,766.50	2,285.03	17,890.58	0.00	15,160.95
1.25	1.50	21,121.56	2,285.03	13,769.98	0.00	9,636.61
1.50	1.75	11,419.38	2,285.03	11,020.42	0.00	2,683.99
1.75	2.00	3,262.68	2,285.03	7,022.23	0.00	-1,474.52
2.00	2.25	-71,193.32	983.88	3,613.85	0.00	-73,823.29
2.25	2.50	24,883.99	983.88	1,963.79	0.00	23,904.08
2.50	2.75	16,572.23	983.88	1,307.84	0.00	16,248.26
2.75	3.00	8,689.24	983.88	685.74	0.00	8,987.38
3.00	3.25	4,651.55	438.84	367.09	0.00	4,723.29
3.25	3.50	2,766.01	438.84	218.29	0.00	2,986.56
3.50	3.75	1,786.59	438.84	140.99	0.00	2,084.43
3.75	4.00	1,045.38	438.84	82.50	0.00	1,401.72
4.00	4.25	525.90	250.64	41.50	0.00	735.04
4.25	4.50	893.30	250.64	70.50	0.00	1,073.44
4.50	4.75	1,320.24	250.64	104.19	0.00	1,466.70
4.75	5.00	1,169.99	250.64	92.33	0.00	1,328.30
5.00	6.00	634.01	820.84	50.03	0.00	1,404.81
6.00	7.00	1,103.10	807.60	87.05	0.00	1,823.65
7.00	8.00	1,928.60	954.12	152.20	0.00	2,730.52
8.00	9.00	1,649.16	857.58	130.15	0.00	2,376.59
9.00	10.00	424.20	898.51	33.48	0.00	1,289.23
10.00	11.00	377.47	887.59	29.79	0.00	1,235.28
11.00	12.00	385.72	676.43	30.44	0.00	1,031.71
12.00	13.00	386.64	600.36	30.51	0.00	956.49
13.00	14.00	0.00	528.12	0.00	0.00	528.12
14.00	15.00	0.00	470.14	0.00	0.00	470.14
15.00	16.00	0.00	418.16	0.00	0.00	418.16
16.00	17.00	0.00	374.93	0.00	0.00	374.93
17.00	18.00	0.00	335.20	0.00	0.00	335.20
18.00	19.00	0.00	298.62	0.00	0.00	298.62
19.00	20.00	0.00	169.09	0.00	0.00	169.09
20.00	21.00	0.00	37.12	0.00	0.00	37.12
21.00	22.00	0.00	13.18	0.00	0.00	13.18
22.00	23.00	0.00	12.73	0.00	0.00	12.73
23.00	24.00	0.00	12.27	0.00	0.00	12.27
24.00	25.00	0.00	11.82	0.00	0.00	11.82
25.00	26.00	0.00	11.37	0.00	0.00	11.37
26.00	27.00	0.00	10.91	0.00	0.00	10.91
27.00	28.00	0.00	10.46	0.00	0.00	10.46
28.00	29.00	0.00	10.00	0.00	0.00	10.00
29.00	30.00	0.00	9.55	0.00	0.00	9.55
30.00	31.00	0.00	9.32	0.00	0.00	9.32
31.00	32.00	0.00	9.09	0.00	0.00	9.09
32.00	33.00	0.00	8.86	0.00	0.00	8.86
33.00	34.00	0.00	8.64	0.00	0.00	8.64
34.00	35.00	0.00	8.41	0.00	0.00	8.41
35.00	36.00	0.00	8.18	0.00	0.00	8.18
36.00	37.00	0.00	7.96	0.00	0.00	7.96
37.00	38.00	0.00	7.73	0.00	0.00	7.73
38.00	39.00	0.00	7.50	0.00	0.00	7.50
39.00	40.00	0.00	7.27	0.00	0.00	7.27
40.00	41.00	0.00	7.05	0.00	0.00	7.05
41.00	42.00	0.00	6.82	0.00	0.00	6.82
42.00	43.00	0.00	6.59	0.00	0.00	6.59
43.00	44.00	0.00	6.36	0.00	0.00	6.36
44.00	45.00	0.00	6.14	0.00	0.00	6.14
45.00	46.00	0.00	5.91	0.00	0.00	5.91
46.00	47.00	0.00	5.68	0.00	0.00	5.68
47.00	48.00	0.00	5.46	0.00	0.00	5.46
48.00	49.00	0.00	5.23	0.00	0.00	5.23
49.00	50.00	0.00	4.77	0.00	0.00	4.77
				133,877.04		7,286.14

INTERNAL RATE OF RETURN ANALYSIS
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TABLE VI: DERIVATION OF FUNDS IN SURPLUS ACCOUNT

Column (1) Loss and Loss Adjustment Reserves is the difference between Losses Incurred (Column (5), Table III) and Losses Paid (Columns (4) and (5), Table IV).

Example: $413,453.88 - 47,777.58 = $365,676.30

Column (2) Unearned Premium Reserves is Column (6) of Table III.

Column (3) Admitted Agents Balances is Column (4) of Table III.

Column (4) Cash Level is computed by adding Columns (1) and (2) and subtracting Column (3).

Example: $365,676.30 + 426,216.24 - 668,233.22 = $123,659.32

Column (5) Funds in Surplus Account is derived by adding Columns (1) and (2) and dividing that total by the reserve-to-surplus ratio used in the model, in this case, 1.87.

Example: ($365,676.30 + 426,216.24) / 1.87 = $423,471.95

ASSIGNED RISK
INTERNAL RATE OF RETURN ANALYSIS
STATE OF DELAWARE F-CLASS - 2022
TABLE VI: DERIVATION OF FUNDS IN SURPLUS ACCOUNT

TIME FROM	INTERVAL TO	(1) LOSS AND LOSS ADJ. RESERVES	(2) UNEARNED PREMIUM RESERVES	(3) ADMITTED AGENTS BALANCES	(4) CASH LEVEL	(5) FUNDS IN SURPLUS ACCOUNT
-1.00	-0.75	0.00	0.00	0.00	0.00	0.00
-0.75	-0.50	0.00	0.00	-2.75	2.75	0.00
-0.50	-0.25	0.00	0.00	-10.08	10.08	0.00
-0.25	0.00	0.00	0.00	-21.07	21.07	0.00
0.00	0.25	20,657.23	211,458.96	227,072.84	5,043.35	124,126.31
0.25	0.50	89,107.51	372,893.40	425,486.03	36,514.88	247,059.31
0.50	0.75	206,974.33	467,994.96	571,664.82	103,304.47	360,946.15
0.75	1.00	365,676.30	426,216.24	668,233.22	123,659.32	423,471.95
1.00	1.25	487,342.91	229,233.24	475,905.43	240,670.72	383,195.80
1.25	1.50	556,902.59	94,002.12	325,971.13	324,933.57	348,077.38
1.50	1.75	574,046.08	20,889.36	201,057.34	393,878.10	318,147.29
1.75	2.00	547,122.87	0.00	116,985.91	430,136.96	292,579.07
2.00	2.25	513,879.57	0.00	0.00	513,879.57	274,801.91
2.25	2.50	480,636.27	0.00	0.00	480,636.27	257,024.74
2.50	2.75	447,392.97	0.00	0.00	447,392.97	239,247.58
2.75	3.00	414,149.67	0.00	0.00	414,149.67	221,470.41
3.00	3.25	392,715.47	0.00	0.00	392,715.47	210,008.27
3.25	3.50	371,281.28	0.00	0.00	371,281.28	198,546.14
3.50	3.75	349,847.08	0.00	0.00	349,847.08	187,084.00
3.75	4.00	328,412.88	0.00	0.00	328,412.88	175,621.86
4.00	4.25	316,043.28	0.00	0.00	316,043.28	169,007.10
4.25	4.50	303,673.68	0.00	0.00	303,673.68	162,392.34
4.50	4.75	291,304.08	0.00	0.00	291,304.08	155,777.58
4.75	5.00	278,934.48	0.00	0.00	278,934.48	149,162.82
5.00	6.00	246,386.97	0.00	0.00	246,386.97	131,757.74
6.00	7.00	222,188.94	0.00	0.00	222,188.94	118,817.61
7.00	8.00	202,706.82	0.00	0.00	202,706.82	108,399.37
8.00	9.00	186,162.48	0.00	0.00	186,162.48	99,552.13
9.00	10.00	171,705.51	0.00	0.00	171,705.51	91,821.13
10.00	11.00	158,794.74	0.00	0.00	158,794.74	84,916.97
11.00	12.00	147,198.24	0.00	0.00	147,198.24	78,715.64
12.00	13.00	136,761.39	0.00	0.00	136,761.39	73,134.43
13.00	14.00	127,329.57	0.00	0.00	127,329.57	68,090.68
14.00	15.00	118,825.47	0.00	0.00	118,825.47	63,543.03
15.00	16.00	111,249.09	0.00	0.00	111,249.09	59,491.49
16.00	17.00	104,368.50	0.00	0.00	104,368.50	55,812.03
17.00	18.00	98,261.01	0.00	0.00	98,261.01	52,545.99
18.00	19.00	92,849.31	0.00	0.00	92,849.31	49,652.04
19.00	20.00	88,056.09	0.00	0.00	88,056.09	47,088.82
20.00	21.00	83,417.49	0.00	0.00	83,417.49	44,608.28
21.00	22.00	78,933.51	0.00	0.00	78,933.51	42,210.43
22.00	23.00	74,604.15	0.00	0.00	74,604.15	39,895.27
23.00	24.00	70,429.41	0.00	0.00	70,429.41	37,662.79
24.00	25.00	66,409.29	0.00	0.00	66,409.29	35,512.99
25.00	26.00	62,543.79	0.00	0.00	62,543.79	33,445.88
26.00	27.00	58,832.91	0.00	0.00	58,832.91	31,461.45
27.00	28.00	55,276.65	0.00	0.00	55,276.65	29,559.71
28.00	29.00	51,875.01	0.00	0.00	51,875.01	27,740.65
29.00	30.00	48,627.99	0.00	0.00	48,627.99	26,004.27
30.00	31.00	45,458.28	0.00	0.00	45,458.28	24,309.24
31.00	32.00	42,365.88	0.00	0.00	42,365.88	22,655.55
32.00	33.00	39,350.79	0.00	0.00	39,350.79	21,043.20
33.00	34.00	36,413.01	0.00	0.00	36,413.01	19,472.20
34.00	35.00	33,552.54	0.00	0.00	33,552.54	17,942.53
35.00	36.00	30,769.38	0.00	0.00	30,769.38	16,454.21
36.00	37.00	28,063.53	0.00	0.00	28,063.53	15,007.24
37.00	38.00	25,434.99	0.00	0.00	25,434.99	13,601.60
38.00	39.00	22,883.76	0.00	0.00	22,883.76	12,237.30
39.00	40.00	20,409.84	0.00	0.00	20,409.84	10,914.35
40.00	41.00	18,013.23	0.00	0.00	18,013.23	9,632.74
41.00	42.00	15,693.93	0.00	0.00	15,693.93	8,392.48
42.00	43.00	13,451.94	0.00	0.00	13,451.94	7,193.55
43.00	44.00	11,287.26	0.00	0.00	11,287.26	6,035.97
44.00	45.00	9,199.89	0.00	0.00	9,199.89	4,919.73
45.00	46.00	7,189.83	0.00	0.00	7,189.83	3,844.83
46.00	47.00	5,257.08	0.00	0.00	5,257.08	2,811.27
47.00	48.00	3,401.64	0.00	0.00	3,401.64	1,819.06
48.00	49.00	1,623.51	0.00	0.00	1,623.51	868.19
49.00	50.00	0.00	0.00	0.00	0.00	0.00

INTERNAL RATE OF RETURN ANALYSIS
EXPLANATORY NOTES

TABLE VII: NOMINAL CASH FLOWS TO INVESTORS

Column (1) Net Cash Flow Underwriting is Column (5) of Table V.

Column (2) Cash Pre-Tax Income is computed by multiplying the pre-tax investment yield rate times the periodic average Cash Level from Column (4), Table VI.

Example: ($103,304.47 + 123,659.32) / 2 = $113,481.90
$113,481.90 x 0.046316977 / 4 = $1,314.03

Column (3) Cash Income Taxes is computed by multiplying the investment income tax rate times the periodic average Cash Level from Column (4), Table VI.

Example: ($103,304.47 + 123,659.32) / 2 = $113,481.90
$113,481.90 x 0.001969391 / 4 = $223.49

Column (4) Net Flow from Surplus is the periodic change in Surplus Balance posted in Column (5) of Table VI.

Example: $360,946.15 - 423,471.95 = ($62,525.80)

Column (5) Surplus Pre-Tax Income is computed by applying the pre-tax investment yield to average periodic surplus balance computed from Column (5) of Table VI.

Example: ($360,946.15 + 423,471.95) / 2 = $392,209.05
$392,209.05 x 0.046316977 / 4 = $4,541.48

Column (6) Surplus Income Taxes is the product of the investment income tax rate and the average periodic surplus balance computed from Column (5) of Table VI.

Example: ($360,946.15 + 423,471.95) / 2 = $392,209.05
$392,209.05 x 0.007877566 / 4 = $772.41

Column (7) Net Cash Flow is the sum of Columns (1) through (6) and represents the net flows to investors which result in a rate of return of 9.60% to investors in the insurance company as required by the Internal Rate of Return Model.

Example: $62,794.08 + 1,314.03 - 223.49 - 62,525.8 + 4,541.48 - 772.41 = $5,127.89

ASSIGNED RISK
INTERNAL RATE OF RETURN ANALYSIS
STATE OF DELAWARE F-CLASS - 2022
TABLE VII: NOMINAL CASH FLOWS TO INVESTORS

TIME FROM	INTERVAL TO	(1) NET CASH FLOW FROM UNDERWRITING	(2) CASH PRE-TAX INCOME	(3) CASH INCOME TAXES	(4) NET FLOW FOR SURPLUS ACCOUNT	(5) SURPLUS PRE-TAX INCOME	(6) SURPLUS INCOME TAXES	(7) NET CASH FLOW
-1.00	-0.75	0.09	0.00	0.00	0.00	0.00	0.00	0.09
-0.75	-0.50	-0.13	0.02	0.00	0.00	0.00	0.00	-0.12
-0.50	-0.25	-0.49	0.07	-0.01	0.00	0.00	0.00	-0.43
-0.25	0.00	-0.78	0.18	-0.03	0.00	0.00	0.00	-0.63
0.00	0.25	-27,889.19	29.32	-4.99	-124,126.31	718.64	-122.23	-151,394.74
0.25	0.50	-33,887.26	240.61	-40.92	-122,933.00	2,149.02	-365.50	-154,837.06
0.50	0.75	-26,578.04	809.50	-137.68	-113,886.84	3,520.12	-598.70	-136,871.64
0.75	1.00	62,794.08	1,314.03	-223.49	-62,525.80	4,541.48	-772.41	5,127.89
1.00	1.25	15,160.95	2,109.33	-358.75	40,276.14	4,670.30	-794.32	61,063.65
1.25	1.50	9,636.61	3,274.64	-556.95	35,118.42	4,233.80	-720.08	50,986.43
1.50	1.75	2,683.99	4,161.65	-707.81	29,930.09	3,857.19	-656.03	39,269.08
1.75	2.00	-1,474.52	4,770.74	-811.40	25,568.22	3,535.87	-601.38	30,987.52
2.00	2.25	-73,823.29	5,465.50	-929.57	17,777.17	3,284.92	-558.70	-48,783.97
2.25	2.50	23,904.08	5,757.87	-979.30	17,777.17	3,079.08	-523.69	49,015.21
2.50	2.75	16,248.26	5,372.94	-913.83	17,777.17	2,873.23	-488.68	40,869.09
2.75	3.00	8,987.38	4,988.01	-848.36	17,777.17	2,667.38	-453.67	33,117.91
3.00	3.25	4,723.29	4,671.44	-794.52	11,462.14	2,498.10	-424.88	22,135.58
3.25	3.50	2,986.56	4,423.25	-752.30	11,462.14	2,365.38	-402.30	20,082.72
3.50	3.75	2,084.43	4,175.06	-710.09	11,462.14	2,232.65	-379.73	18,864.46
3.75	4.00	1,401.72	3,926.87	-667.88	11,462.14	2,099.93	-357.15	17,865.62
4.00	4.25	735.04	3,731.16	-634.59	6,614.76	1,995.27	-339.35	12,102.28
4.25	4.50	1,073.44	3,587.93	-610.23	6,614.76	1,918.68	-326.33	12,258.25
4.50	4.75	1,466.70	3,444.70	-585.87	6,614.76	1,842.08	-313.30	12,469.06
4.75	5.00	1,328.30	3,301.47	-561.51	6,614.76	1,765.49	-300.27	12,148.23
5.00	6.00	1,404.81	12,165.65	-2,069.13	17,405.09	6,505.70	-1,106.49	34,305.63
6.00	7.00	1,823.65	10,851.51	-1,845.62	12,940.12	5,802.95	-986.96	28,585.65
7.00	8.00	2,730.52	9,839.94	-1,673.57	10,418.25	5,262.00	-894.96	25,682.18
8.00	9.00	2,376.59	9,005.63	-1,531.67	8,847.24	4,815.84	-819.08	22,694.55
9.00	10.00	1,289.23	8,287.68	-1,409.56	7,731.00	4,431.92	-753.78	19,576.48
10.00	11.00	1,235.28	7,653.89	-1,301.77	6,904.16	4,092.99	-696.13	17,888.41
11.00	12.00	1,031.71	7,086.33	-1,205.24	6,201.34	3,789.48	-644.51	16,259.11
12.00	13.00	956.49	6,576.08	-1,118.46	5,581.20	3,516.62	-598.10	14,913.82
13.00	14.00	528.12	6,115.95	-1,040.20	5,043.75	3,270.56	-556.26	13,361.93
14.00	15.00	470.14	5,700.58	-969.55	4,547.65	3,048.44	-518.48	12,278.78
15.00	16.00	418.16	5,328.18	-906.21	4,051.54	2,849.29	-484.61	11,256.35
16.00	17.00	374.93	4,993.38	-849.27	3,679.46	2,670.26	-454.16	10,414.59
17.00	18.00	335.20	4,692.59	-798.11	3,266.04	2,509.41	-426.80	9,578.33
18.00	19.00	298.62	4,425.83	-752.74	2,893.96	2,366.75	-402.54	8,829.87
19.00	20.00	169.09	4,189.50	-712.55	2,563.22	2,240.37	-381.04	8,068.58
20.00	21.00	37.12	3,971.07	-675.40	2,480.53	2,123.57	-361.17	7,575.71
21.00	22.00	13.18	3,759.80	-639.47	2,397.85	2,010.59	-341.96	7,200.00
22.00	23.00	12.73	3,555.70	-604.75	2,315.17	1,901.44	-323.40	6,856.89
23.00	24.00	12.27	3,358.76	-571.26	2,232.48	1,796.13	-305.48	6,522.90
24.00	25.00	11.82	3,168.98	-538.98	2,149.80	1,694.64	-288.22	6,198.03
25.00	26.00	11.37	2,986.36	-507.92	2,067.11	1,596.98	-271.61	5,882.29
26.00	27.00	10.91	2,810.90	-478.08	1,984.43	1,503.16	-255.66	5,575.66
27.00	28.00	10.46	2,642.60	-449.45	1,901.74	1,413.16	-240.35	5,278.16
28.00	29.00	10.00	2,481.47	-422.05	1,819.06	1,326.99	-225.69	4,989.78
29.00	30.00	9.55	2,327.50	-395.86	1,736.37	1,244.65	-211.69	4,710.52
30.00	31.00	9.32	2,178.90	-370.59	1,695.03	1,165.18	-198.17	4,479.67
31.00	32.00	9.09	2,033.87	-345.92	1,653.69	1,087.63	-184.98	4,253.39
32.00	33.00	8.86	1,892.43	-321.86	1,612.35	1,012.00	-172.12	4,031.66
33.00	34.00	8.64	1,754.58	-298.42	1,571.01	938.28	-159.58	3,814.50
34.00	35.00	8.41	1,620.30	-275.58	1,529.66	866.47	-147.37	3,601.89
35.00	36.00	8.18	1,489.60	-253.35	1,488.32	796.58	-135.48	3,393.85
36.00	37.00	7.96	1,362.48	-231.73	1,446.98	728.60	-123.92	3,190.37
37.00	38.00	7.73	1,238.94	-210.72	1,405.64	662.54	-112.68	2,991.44
38.00	39.00	7.50	1,118.99	-190.32	1,364.29	598.39	-101.77	2,797.08
39.00	40.00	7.27	1,002.61	-170.52	1,322.95	536.16	-91.19	2,607.28
40.00	41.00	7.05	889.82	-151.34	1,281.61	475.84	-80.93	2,422.05
41.00	42.00	6.82	780.61	-132.77	1,240.27	417.44	-71.00	2,241.37
42.00	43.00	6.59	674.97	-114.80	1,198.93	360.95	-61.39	2,065.25
43.00	44.00	6.36	572.92	-97.44	1,157.58	306.38	-52.11	1,893.70
44.00	45.00	6.14	474.45	-80.69	1,116.24	253.72	-43.15	1,726.70
45.00	46.00	5.91	379.56	-64.56	1,074.90	202.97	-34.52	1,564.27
46.00	47.00	5.68	288.25	-49.03	1,033.56	154.15	-26.22	1,406.39
47.00	48.00	5.46	200.52	-34.10	992.21	107.23	-18.24	1,253.08
48.00	49.00	5.23	116.37	-19.79	950.87	62.23	-10.58	1,104.33
49.00	50.00	4.77	37.60	-6.39	868.19	20.11	-3.42	920.85

INTERNAL RATE OF RETURN ANALYSIS
EXPLANATORY NOTES

DELAWARE PRE & POST TAX RETURNS
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Column (1) Invested Assets
Categories taken from Best's Aggregates and Averages with values as of December 31, 2020

Column (2) 12/31/20 Market Values
Treasuries, Exempt Bonds, Bonds for Unaffiliated and Affiliated Companies, Preferred Stock for Unaffiliated and Affiliated Companies and Common Stock for Unaffiliated and Affiliated Companies all taken from 2021 Best's Aggregates and Averages, Industry Total Schedule D.

Column (3) Pre-Tax Return
Treasuries based on yields by Maturity published in Federal Reserve Statistical Release H. 15 (June 27, 2022), weighted by loss payout pattern provided by the DCRB for Delaware workers compensation insurance.

Exempt Bonds based on yields by Maturity published in Bond Buyer, Municipal Market Statistics (June 26, 2022).

Bonds based on yields published by the Federal Reserve Bank of St. Louis (June 27, 2022).

Preferred stock yields are from Preferred Stocks of Utilities (June 27, 2022), Preferred Stock Channel.

Common Stock Yield based on three-month Treasury Bill rate (Federal Reserve Statistical Release H. 15 (June 27, 2022)) plus Ibbotson Differential (2022 Ibbotson SBBI).

Mortgages based on yields published by the Federal Reserve Bank of St. Louis (June 27, 2022).

Real Estate Yield based on three-month Treasury Bill rate (Federal Reserve) plus Ibbotson Differential (Ibbotson & Seigel, AREUA Journal, Vol 12, No. 3, 1984).

Cash & Short Term Investment yield based on the Federal Funds (effective) rate, as published in Federal Reserve Statistical Release H. 15 (June 27, 2022).

Column (4) Investment Gain
Product of 12/31/20 Market Value times Pre-Tax Return expressed as a decimal value by asset type.

INTERNAL RATE OF RETURN ANALYSIS
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DELAWARE PRE & POST TAX RETURNS
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Column (5) Tax Rate
(Percent Taxable x .21) + ((1.0 - Percent Taxable) x .25 x .21)

Percent Taxable Treasuries, Unaffiliated Bonds, Mortgages & Real Estate and Cash & Short Term Investments all assumed to be 100% taxable.

Exempt Bonds, Bonds in Affiliated Companies and Preferred Stock in Affiliated Companies all assumed to be tax-free

Preferred Stock in Unaffiliated Companies: 50% of dividend income taxable per Tax Cuts and Jobs Act of 2017; all income attributed to dividends for preferred stock.

Common Stock of Affiliated Companies: 100% of capital gains in affiliated companies subject to income tax. Portion of common stock income attributed to capital gains is 0.6777. 25% of the otherwise exempt portion (0.3223) is subject to

Common Stock of Unaffiliated Companies: Capital gains are taxed at the full rate, 50% of dividends are taxed at the full rate, and 25% of the remaining dividends (50 percent) are subject to tax. (0.6777 x 0.21) + (0.50 x 0.21 x 0.3223) + (0.50 x 0.3223 x 0.25 x 0.21) = 0.1846. Portions of common stock income attributable to dividend and capital gains from Duff & Phelps' 2022 SBBI Ibbotson (Large Company Stocks, Arithmetic Mean).

Column (6) Post Tax Return
Pre-Tax Return x (1.0 - Tax Rate)

INTERNAL RATE OF RETURN ANALYSIS

DELAWARE F-CLASS - 2022

PRE & POST TAX RETURNS

Invested Assets (1)	Assets (2)	Pre Tax Return (3)	Investment Gain (4)	Tax Rate (5)	Post Tax Return (6)
Treasuries	159,544,775	2.08	3,318,596	0.21000	1.643232
Exempt Bonds	423,973,621	2.87	12,146,844	0.05250	2.714588
Bonds (Unaffil)	631,377,197	3.55	22,382,322	0.21000	2.800550
Bonds (Affiliated)	6,733,166	3.55	238,691	0.05250	3.358888
Prefer Stk (Unaff)	13,614,467	5.69	773,982	0.13125	4.938844
Prefer Stk (Affil)	3,306,206	5.69	187,958	0.05250	5.386538
Common Stk (Unaff)	427,402,386	9.82	41,970,914	0.18462	8.007043
Common Stock (Affil)	98,182,284	9.82	9,641,500	0.15924	8.256285
Mortgage Loans	23,659,896	4.42	1,044,584	0.21000	3.487850
Real Estate	13,877,721	4.84	670,988	0.21000	3.819650
Cash and ST Invest	143,147,455	0.84	1,202,439	0.21000	0.663600
Average or Total	1,944,819,174		93,578,819		3.986141

1. Assets are from the latest (2021) Best's A&A, Market Value December 31, 2020
2. The yields shown are an average of the July, 2021 yields from the December 1, 2021 Rate and Loss Cost filing and the July, 2022 yields, which come from the following sources:
   a) Treasuries and Cash & Short Term Invest are from: Federal Reserve H.15, June 27, 2022.
   b) Exempt Bonds are from: Bond Buyer, Municipal Market Statistics, Bond Buyer Index, general obligation, 20 years to maturity, mixed quality, June 26, 2022.
   c) Bonds (Unaffiliated and Affiliated) are Moody's Seasoned Aaa Corporate Bond Yield from: Federal Reserve Bank of St. Louis, June 27, 2022.
   d) Preferred Stocks are from: Preferred Stocks of Utilities, June 27, 2022, Preferred Stock Channel
   e) Mortgage Loans are from: Federal Reserve Bank of St. Louis, June 27, 2022.
   f) Common Stock: 3 month Treasury (1.73%) + Ibbotson Differential (9.03%)
   g) Real Estate: 3 month Treasury (1.73%) + Ibbotson Differential (3.94%)
      Differential from: Ibbotson & Seigel, AREUA Journal, Vol 12, No. 3, 1984

PRE TAX WEIGHTED PORTFOLIO YIELD - INVEST EXPENSE = 4.6316977

POST TAX WEIGHTED YIELD - POST TAX EXPENSE = 3.8439411

INTERNAL RATE OF RETURN ANALYSIS
EXPLANATORY NOTES

DELAWARE COST OF CAPITAL

- All data taken from Value Line Investment Survey of June 3, 2022.

- All Property/Casualty Companies Selected with limited exceptions, such as reinsurers and carriers without any workers compensation insurance writings.

- Individual carrier inclusions/exclusions from selected list noted as having limited effect on indicated results.

- DCF FORECAST COST OF CAPITAL
  = 1.93% x (1.0 + 0.5 x 8.24%) + 8.24%
  = 2.01% + 8.24% = 10.25%

- DCF HISTORICAL COST OF CAPITAL
  = 1.93% x (1.0 + 0.5 x 10.13%) + 10.13%
  = 2.03% + 10.13% = 12.16%

- DCF DIVIDENDS ONLY COST OF CAPITAL
  = 1.93% x (1.0 + 0.5 x 6.69%) + 6.69%
  = 2.00% + 6.69% = 8.69%
  Note: 6.69% = Average (8.11%, 5.26%)

2022
DELAWARE F-CLASS
COST OF CAPITAL

COMPANY	BETA	YIELD	DIVIDEND PAST 5 YEARS	EARNINGS PAST 5 YEARS	EARNINGS FORECAST	DIVIDEND FORECAST	RETAINED TO EQUITY FORECAST
Allstate	1.00	2.7	14.5	20.0	2.5	8.5	8.5
Alleghany Corp.	1.15	0.0	0.0	9.0	18.5	0.0	8.5
Arch Capital	1.25	0.0	0.0	9.5	14.0	0.0	10.5
Amer Fnl	1.35	1.7	12.5	12.0	8.0	10.0	12.0
Berkley	1.05	0.5	8.5	8.5	15.0	10.0	13.5
Chubb	1.10	1.6	3.0	0.0	11.0	6.5	7.0
Cinc Fnl	1.10	2.2	3.5	8.5	7.0	6.5	3.6
CNA Fnl	1.10	3.6	8.0	5.0	12.0	4.5	8.0
Erie	0.65	2.7	7.0	10.5	10.0	5.5	13.5
First American Financial	1.20	3.4	12.0	24.5	8.0	7.0	9.0
Hanover	0.95	2.1	10.0	8.0	9.0	6.5	8.0
Markel	1.20	0.0	0.0	36.0	7.0	0.0	6.5
Merc Gen	0.90	5.3	0.5	8.0	8.0	1.5	7.0
Old Rep	1.15	4.0	2.5	15.0	9.0	6.0	8.5
Progressive	0.75	0.4	42.0	23.5	6.5	NA	18.0
RLI Corp	0.80	0.9	5.0	4.5	12.0	4.0	17.0
Selective	0.90	1.5	10.0	14.5	9.0	9.0	10.5
Travelers	1.00	2.2	7.0	1.5	6.5	4.0	7.5
	1.03	1.93	8.11	12.14	9.61	5.26	9.84

SOURCE: VALUE LINE INVESTMENT SURVEY, JUNE 3, 2022

DCF COST OF CAPITAL

FORECAST

A. EARNINGS	9.61%
B. DIVIDEND	5.26%
C. FUNDAMENT	9.84%
FORECAST = (A+B+C)/3	8.24%
FORECAST COST OF CAPITAL	10.25%

HISTORICAL

A. EARNINGS	12.14%
B. DIVIDEND	8.11%
HISTORICAL = (A+B)/2	10.13%
HISTORICAL COST OF CAPITAL	12.16%
DIVIDENDS ONLY (GROWTH & HISTORICAL)	8.69%

2022
DELAWARE F-CLASS
COST OF CAPITAL

COMPANY	DEBT SHARE OF CAPITAL	LONG-TERM INTEREST ($ Millions)	LONG-TERM DEBT ($ Millions)	COST OF DEBT PRE-TAX (Interest/Debt)
Allstate	32.0	$470.0	$7,973.0	5.89%
Alleghany Corp.	25.0	$99.6	$2,823.0	3.53%
Arch Capital	17.0	$131.0	$2,724.6	4.81%
Amer Fnl	28.0	$92.0	$1,917.0	4.80%
Berkley	29.0	$100.0	$2,842.0	3.52%
Chubb	22.0	$602.0	$16,367.0	3.68%
Cinc Fnl	6.0	$52.0	$841.0	6.18%
CNA Fnl	20.0	$176.0	$2,779.0	6.33%
Erie	0.0			
First American Financial	23.0	$73.0	$2,206.0	3.31%
Hanover	20.0	$34.0	$781.8	4.35%
Markel	23.0		$4,428.7	
Merc Gen	16.0		$373.0	
Old Rep	19.0	$35.0	$1,594.2	2.20%
Progressive	29.0	$385.0	$6,385.6	6.03%
RLI Corp	15.0		$149.7	
Selective	15.0	$28.0	$505.6	5.54%
Travelers	22.0		$7,291.0	
	20.06%			4.63%

SOURCE: VALUE LINE INVESTMENT SURVEY, JUNE 3, 2022

2022
DELAWARE F-CLASS
COST OF CAPITAL

A) CAPM COST OF CAPITAL	11.06%	= 1.73% + 1.03*(9.03%)
B) FORECAST COST OF EQUITY CAPITAL	10.25%	
C) COST OF EQUITY CAPITAL	10.66%	= (A+B) / 2
D) COST OF DEBT CAPITAL	3.66%	= 4.63% + (1 - 0.21)
E) DEBT SHARE OF CAPITAL	20.06%	
F) INSURANCE SHARE OF DEBT	15.04%	= (E) * 75%

(ASSUMES THAT DEBT DOES NOT ENTIRELY RELATE TO INSURANCE OPERATIONS)

G) WEIGHTED AVERAGE COST OF CAPITAL	9.60%	= (3.66% * 0.1504) + (10.66% * (1 - 0.1504))

SOURCES:
A: CAPM: BETA - VALUE LINE INVESTMENT SURVEY JUNE 3, 2022
RF - 3 MONTH BILL RATE JUNE 27, 2022. FEDERAL RESERVE H. 15
1.73%
RM - RF = IBBOTSON DIFFERENTIAL (S&P 500 TO 1-MONTH TREASURY BILL YIELD RATE, 1926 TO 2019 AVERAGE): IBBOTSON SBBI (2022)
9.03%

B: DCF: K = Y (1+0.5G) + G

Y IS THE CURRENT DIVIDEND YIELD (FROM VALUE LINE)
G IS THE DIVIDEND GROWTH RATE (FROM VALUE LINE)

D: COST OF DEBT CAPITAL: YIELD ON LONG-TERM DEBT, NET OF TAX DEDUCTION
= (LONG-TERM INTEREST)/(LONG-TERM DEBT) * (1 - 0.21)
VALUE LINE INVESTMENT SURVEY JUNE 3, 2022

E: DEBT SHARE OF CAPITAL: VALUE LINE INVESTMENT SURVEY JUNE 3, 2022

INTERNAL RATE OF RETURN ANALYSIS
EXPLANATORY NOTES

DELAWARE RESERVE-TO-SURPLUS RATIOS

Columns (1)-(4)	Reserves and policyholder surplus for commercial casualty predominate carriers all taken from Best's Aggregates and Averages with values as of December 31, 2020.
Column (6)	Reserve-to-Surplus ratio is the sum of the reserves in columns (1) through (3) divided by the policyholder surplus in column (5).

2,033,258,133 + 452,418,549 + 800,717,375 = 3,286,394,057
3,286,394,057 / 1,761,563,918 = 1.87

INTERNAL RATE OF RETURN ANALYSIS
DELAWARE F-CLASS FILING - 2022
RESERVE-TO-SURPLUS RATIO ($000 OMITTED)

	Reserves					Reserve to
Year	Unpaid Losses (1)	Unpaid LAE (2)	Unearned Premium (3)	Total (4) =(1)+(2)+(3)	Policyholder Surplus (5)	Surplus Ratio (6) =(4)/(5)
2020	213,654,262	47,148,359	91,285,583	352,088,204	184,607,060	1.91
2019	201,634,477	45,253,873	88,025,958	334,914,308	177,424,154	1.89
2018	198,071,343	43,050,172	84,424,740	325,546,255	169,657,802	1.92
2017	194,692,095	42,696,647	77,537,150	314,925,892	171,664,964	1.83
2016	186,424,236	41,741,053	72,716,997	300,882,286	169,831,305	1.77
2015	185,919,427	42,816,231	73,469,477	302,205,135	169,017,203	1.79
2014	214,239,981	48,564,685	83,674,315	346,478,981	192,947,461	1.80
2013	215,275,673	47,841,227	81,229,642	344,346,542	182,832,920	1.88
2012	212,275,479	46,533,070	75,723,720	334,532,269	174,892,306	1.91
2011	211,071,160	46,773,232	72,629,793	330,474,185	168,688,743	1.96
Total	2,033,258,133	452,418,549	800,717,375	3,286,394,057	1,761,563,918	1.87

Source: AM Best's Aggregates & Averages - Property & Casualty
Commercial Casualty Composite