

PENNSYLVANIA COMPENSATION RATING BUREAU
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 PCR B's loss ratio (including loss adjustment expenses and loss based assessments) and provision for profit and contingencies.

PENNSYLVANIA COMPENSATION RATING BUREAU

PENNSYLVANIA APRIL 1, 2025 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 all carriers and cash flows for losses and expenses attendant with Pennsylvania 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 Pennsylvania workers compensation business based on the inputs to the Internal Rate of Return model, assuming a base standard premium at PCR level of \$1 million.

Exhibits titled "Pennsylvania Pre & Post Tax Returns" and "Pennsylvania Cost of Capital" present the derivation of a weighted average cost of capital. 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 13.17% was the average of Capital Asset Pricing Model ("CAPM") and Discounted Cash Flow ("DCF") analyses. The cost of debt capital was calculated as 4.01%. The resulting weighted average cost of capital was 11.79%.

**INTERNAL RATE OF RETURN ANALYSIS
PENNSYLVANIA F-CLASS - 2025
TABLE I: INPUTS, ASSUMPTIONS & OUTPUTS**

Section 1: Inputs & Assumptions

(1) Commissions *		5.14
(2) Other Expenses		6.54
(2A)	Other Acquisitions *	2.10
(2B)	General Expenses *	4.14
(2C)	Other Tax **	0.30
(3) State Premium Taxes & Uncollectible Premium		
(3A)	Tax1 - Premium Tax **	2.00
(3B)	Uncollectible Premium **	1.61
(3C)	Tax3 - Workers Compensation Fund **	0.00
(4) Premium Discount ***		7.81
(5) Deviations		0.00
(6) Dividends to Policyholders		0.00
(7) Premium Written		1,000,000
Investment Income		
(8A)	Pre-Tax Return on Assets	6.79
(8B)	Investment Income Tax Rate	1.20
(8C)	Post-Tax Return on Assets	5.59
(10) Reserve to Surplus Ratio		1.86
(11) Internal Rate of Return (Cost of Capital)		11.79

* 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	79.13
(2) Profit & Contingencies	-2.22

**INTERNAL RATE OF RETURN ANALYSIS
EXPLANATORY NOTES**

TABLE II: CASH FLOW PATTERNS

Column (1)	Premium Collection pattern provided by the PCRB based on Pennsylvania workers compensation data.
Column (2)	Policy Year Loss Payout pattern provided by the PCRB based on Pennsylvania 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 PENNSYLVANIA F-CLASS - 2025
TABLE II: CASH FLOW PATTERNS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
TIME FROM	INTERVAL TO	PREMIUM COLLECTED	POLICY YR LOSS PAYOUT	OTHER EXPENSES	TAX1	UNCOLL PREMIUM	TAX3	DIVIDENDS PAID	CUMULATIVE WRITTEN DISTRIBUTION	CUMULATIVE EARNED DISTRIBUTION
-1.00	-0.75	0.0000	0	0.0000	0	0.0000	0	0	0	0
-0.75	-0.50	0.0000	0	0.0000	0	0.0000	0	0	0	0
-0.50	-0.25	0.0000	0	0.0000	0	0.0000	0	0	0	0
-0.25	0.00	0.1900	0	0.0000	0	0.1900	0	0	0	0
0.00	0.25	4.5000	0.957	18.0968	25	4.5000	25	0	0.2503	0.0316
0.25	0.50	10.6000	1.914	20.6013	25	10.6000	25	0	0.5083	0.1284
0.50	0.75	15.5900	2.871	18.1983	25	15.5900	25	0	0.7023	0.2833
0.75	1.00	20.1400	3.828	27.2780	25	20.1400	25	0	1.0000	0.5056
1.00	1.25	19.1300	8.0175	6.9237	0	19.1300	0	0	1.0000	0.7157
1.25	1.50	14.1300	8.0175	4.9455	0	14.1300	0	0	1.0000	0.8667
1.50	1.75	9.3900	8.0175	2.9673	0	9.3900	0	25	1.0000	0.9636
1.75	2.00	4.3900	8.0175	0.9891	0	4.3900	0	25	1.0000	1.0000
2.00	2.25	1.0000	5.4475	0.0000	0	1.0000	0	25	1.0000	1.0000
2.25	2.50	0.0600	5.4475	0.0000	0	0.0600	0	25	1.0000	1.0000
2.50	2.75	-0.1200	5.4475	0.0000	0	-0.1200	0	0	1.0000	1.0000
2.75	3.00	0.1000	5.4475	0.0000	0	0.1000	0	0	1.0000	1.0000
3.00	3.25	0.1300	2.89	0.0000	0	0.1300	0	0	1.0000	1.0000
3.25	3.50	-0.0200	2.89	0.0000	0	-0.0200	0	0	1.0000	1.0000
3.50	3.75	-0.0300	2.89	0.0000	0	-0.0300	0	0	1.0000	1.0000
3.75	4.00	0.1100	2.89	0.0000	0	0.1100	0	0	1.0000	1.0000
4.00	4.25	0.2300	1.1825	0.0000	0	0.2300	0	0	1.0000	1.0000
4.25	4.50	0.2200	1.1825	0.0000	0	0.2200	0	0	1.0000	1.0000
4.50	4.75	0.1700	1.1825	0.0000	0	0.1700	0	0	1.0000	1.0000
4.75	5.00	0.0800	1.1825	0.0000	0	0.0800	0	0	1.0000	1.0000
5.00	6.00	0.0100	3.31	0.0000	0	0.0100	0	0	1.0000	1.0000
6.00	7.00	0.0000	2.64	0.0000	0	0.0000	0	0	1.0000	1.0000
7.00	8.00	0.0000	2.23	0.0000	0	0.0000	0	0	1.0000	1.0000
8.00	9.00	0.0000	1.97	0.0000	0	0.0000	0	0	1.0000	1.0000
9.00	10.00	0.0000	1.77	0.0000	0	0.0000	0	0	1.0000	1.0000
10.00	11.00	0.0000	1.46	0.0000	0	0.0000	0	0	1.0000	1.0000
11.00	12.00	0.0000	1.2	0.0000	0	0.0000	0	0	1.0000	1.0000
12.00	13.00	0.0000	0.99	0.0000	0	0.0000	0	0	1.0000	1.0000
13.00	14.00	0.0000	0.81	0.0000	0	0.0000	0	0	1.0000	1.0000
14.00	15.00	0.0000	0.67	0.0000	0	0.0000	0	0	1.0000	1.0000
15.00	16.00	0.0000	0.55	0.0000	0	0.0000	0	0	1.0000	1.0000
16.00	17.00	0.0000	0.45	0.0000	0	0.0000	0	0	1.0000	1.0000
17.00	18.00	0.0000	0.37	0.0000	0	0.0000	0	0	1.0000	1.0000
18.00	19.00	0.0000	0.3	0.0000	0	0.0000	0	0	1.0000	1.0000
19.00	20.00	0.0000	0.25	0.0000	0	0.0000	0	0	1.0000	1.0000
20.00	21.00	0.0000	0.21	0.0000	0	0.0000	0	0	1.0000	1.0000
21.00	22.00	0.0000	0.17	0.0000	0	0.0000	0	0	1.0000	1.0000
22.00	23.00	0.0000	0.14	0.0000	0	0.0000	0	0	1.0000	1.0000
23.00	24.00	0.0000	0.12	0.0000	0	0.0000	0	0	1.0000	1.0000
24.00	25.00	0.0000	0.1	0.0000	0	0.0000	0	0	1.0000	1.0000
25.00	26.00	0.0000	0.08	0.0000	0	0.0000	0	0	1.0000	1.0000
26.00	27.00	0.0000	0.07	0.0000	0	0.0000	0	0	1.0000	1.0000
27.00	28.00	0.0000	0.06	0.0000	0	0.0000	0	0	1.0000	1.0000
28.00	29.00	0.0000	0.05	0.0000	0	0.0000	0	0	1.0000	1.0000
29.00	30.00	0.0000	0.04	0.0000	0	0.0000	0	0	1.0000	1.0000
30.00	31.00	0.0000	0.03	0.0000	0	0.0000	0	0	1.0000	1.0000
31.00	32.00	0.0000	0.02	0.0000	0	0.0000	0	0	1.0000	1.0000
32.00	33.00	0.0000	0.02	0.0000	0	0.0000	0	0	1.0000	1.0000
33.00	34.00	0.0000	0.02	0.0000	0	0.0000	0	0	1.0000	1.0000
34.00	35.00	0.0000	0.02	0.0000	0	0.0000	0	0	1.0000	1.0000
35.00	36.00	0.0000	0.02	0.0000	0	0.0000	0	0	1.0000	1.0000
36.00	37.00	0.0000	0.01	0.0000	0	0.0000	0	0	1.0000	1.0000
37.00	38.00	0.0000	0.01	0.0000	0	0.0000	0	0	1.0000	1.0000
38.00	39.00	0.0000	0.01	0.0000	0	0.0000	0	0	1.0000	1.0000
39.00	40.00	0.0000	0.01	0.0000	0	0.0000	0	0	1.0000	1.0000
40.00	41.00	0.0000	0.01	0.0000	0	0.0000	0	0	1.0000	1.0000
41.00	42.00	0.0000	0.01	0.0000	0	0.0000	0	0	1.0000	1.0000
42.00	43.00	0.0000	0.01	0.0000	0	0.0000	0	0	1.0000	1.0000
43.00	44.00	0.0000	0.01	0.0000	0	0.0000	0	0	1.0000	1.0000
44.00	45.00	0.0000	0.01	0.0000	0	0.0000	0	0	1.0000	1.0000
45.00	46.00	0.0000	0.01	0.0000	0	0.0000	0	0	1.0000	1.0000
46.00	47.00	0.0000	0.01	0.0000	0	0.0000	0	0	1.0000	1.0000
47.00	48.00	0.0000	0.01	0.0000	0	0.0000	0	0	1.0000	1.0000
48.00	49.00	0.0000	0.01	0.0000	0	0.0000	0	0	1.0000	1.0000
49.00	50.00	0.0000	0.01	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: $\$921,900 \times 0.0019 = \$1,751.61$
- Column (2) Agents' Balances reflects the difference between Written Premium and Collected Premium. Written Premium pattern provided by the PCRB for Pennsylvania workers compensation insurance.
Example: Written Premium, First Quarter = $0.25 \times \$921,900 = \$230,475.00$
Collected Premium = $(0.0019 + 0.045) \times \$921,900 = \$43,237.11$
Written - Collected = $\$187,237.89$
- 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 PCRB level (i.e., before premium discounts). Premium earning pattern provided by the PCRB for Pennsylvania workers compensation insurance.
Example: $0.7913 \times \$1,000,000 \times 0.0316 = \$25,003.50$
- Column (6) Unearned Premiums is computed as Cumulative Written Premium less Cumulative Earned Premium.
Example: $\$230,784.14 - \$29,132.04 = \$201,652.10$
- Column (7) Total Premium Net of Reserves is computed as Collected Premium plus Admitted Agents' Balances less Losses Incurred less Unearned Premium Reserves.
Example: $\$43,237.11 + \$187,237.89 - \$25,003.50 - \$201,652.10 = \$3,819.40$

**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: $\$3,819.40 - \$0.00 = \$3,819.40$

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

Example: $\$921,900 \times 0.2503 = \$230,784.14$

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

Example: $\$921,900 \times 0.0316 = \$29,132.04$

ASSIGNED RISK
INTERNAL RATE OF RETURN ANALYSIS
STATE OF PENNSYLVANIA F-CLASS - 2025
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	TEST EARNED PREMIUMS	(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	0.00
-0.75	-0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-0.50	-0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-0.25	0.00	1,751.61	-1,751.61	0.00	-1,751.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.25	43,237.11	187,237.89	0.00	187,237.89	25,003.50	29,132.04	201,652.10	3,819.40	3,819.40	230,784.14	29,132.04
0.25	0.50	140,958.51	319,991.49	0.00	319,991.49	101,596.50	118,371.96	350,268.60	9,084.90	5,265.50	468,640.56	118,371.96
0.50	0.75	284,682.72	406,742.28	0.00	406,742.28	224,161.13	261,174.27	386,230.71	81,033.16	71,948.27	647,404.98	261,174.27
0.75	1.00	470,353.38	451,546.62	0.00	451,546.62	400,056.00	466,112.64	455,787.36	66,056.64	-14,976.52	921,900.00	466,112.64
1.00	1.25	646,712.85	275,187.15	0.00	275,187.15	566,297.63	659,803.83	262,096.17	93,506.21	27,449.57	921,900.00	659,803.83
1.25	1.50	776,977.32	144,922.68	0.00	144,922.68	685,776.38	799,010.73	122,889.27	113,234.36	19,728.15	921,900.00	799,010.73
1.50	1.75	863,543.73	58,356.27	0.00	58,356.27	762,448.50	888,342.84	33,557.16	125,894.34	12,659.99	921,900.00	888,342.84
1.75	2.00	904,015.14	17,884.86	0.00	17,884.86	791,250.00	921,900.00	0.00	130,650.00	4,755.66	921,900.00	921,900.00
2.00	2.25	913,234.14	8,665.86	8,665.86	0.00	791,250.00	921,900.00	0.00	121,984.14	-8,665.86	0.00	0.00
2.25	2.50	913,787.28	8,112.72	8,112.72	0.00	791,250.00	921,900.00	0.00	122,537.28	553.14	0.00	0.00
2.50	2.75	912,681.00	9,219.00	9,219.00	0.00	791,250.00	921,900.00	0.00	121,431.00	-1,106.28	0.00	0.00
2.75	3.00	913,602.90	8,297.10	8,297.10	0.00	791,250.00	921,900.00	0.00	122,352.90	921.90	0.00	0.00
3.00	3.25	914,801.37	7,098.63	7,098.63	0.00	791,250.00	921,900.00	0.00	123,551.37	1,198.47	0.00	0.00
3.25	3.50	914,616.99	7,283.01	7,283.01	0.00	791,250.00	921,900.00	0.00	123,366.99	-184.38	0.00	0.00
3.50	3.75	914,340.42	7,559.58	7,559.58	0.00	791,250.00	921,900.00	0.00	123,090.42	-276.57	0.00	0.00
3.75	4.00	915,354.51	6,545.49	6,545.49	0.00	791,250.00	921,900.00	0.00	124,104.51	1,014.09	0.00	0.00
4.00	4.25	917,474.88	4,425.12	4,425.12	0.00	791,250.00	921,900.00	0.00	126,224.88	2,120.37	0.00	0.00
4.25	4.50	919,503.06	2,396.94	2,396.94	0.00	791,250.00	921,900.00	0.00	128,253.06	2,028.18	0.00	0.00
4.50	4.75	921,070.29	829.71	829.71	0.00	791,250.00	921,900.00	0.00	129,820.29	1,567.23	0.00	0.00
4.75	5.00	921,807.81	92.19	92.19	0.00	791,250.00	921,900.00	0.00	130,557.81	737.52	0.00	0.00
5.00	6.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	92.19	0.00	0.00
6.00	7.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
7.00	8.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
8.00	9.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
9.00	10.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
10.00	11.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
11.00	12.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
12.00	13.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
13.00	14.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
14.00	15.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
15.00	16.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
16.00	17.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
17.00	18.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
18.00	19.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
19.00	20.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
20.00	21.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
21.00	22.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
22.00	23.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
23.00	24.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
24.00	25.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
25.00	26.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
26.00	27.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
27.00	28.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
28.00	29.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
29.00	30.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
30.00	31.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
31.00	32.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
32.00	33.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
33.00	34.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
34.00	35.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
35.00	36.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
36.00	37.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
37.00	38.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
38.00	39.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
39.00	40.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
40.00	41.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
41.00	42.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
42.00	43.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
43.00	44.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
44.00	45.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
45.00	46.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
46.00	47.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
47.00	48.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
48.00	49.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00
49.00	50.00	921,900.00	0.00	0.00	0.00	791,250.00	921,900.00	0.00	130,650.00	0.00	0.00	0.00

**INTERNAL RATE OF RETURN ANALYSIS
EXPLANATORY NOTES**

**TABLE IV: TAX CREDITS AVAILABLE FROM UNDERWRITING OPERATIONS
PAGE 1**

Column (1) The net written premium underlying the model, i.e., \$1 million less premium discounts, or \$921,900.00

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

Example: $\$455,787.36 - 0 = \$455,787.36$

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	5.14	0.005083	0.026127	1,000,000	26,126.62
General Expense	4.14	0.007500	0.031050	1,000,000	31,050.00
Other Acquisition	2.10	0.010000	0.021000	1,000,000	21,000.00
Other Tax	0.30	0.010000	0.003000	921,900	2,765.70
Uncollectible Prem	1.61	0.005083	0.008158	921,900	7,521.06
Tax 1:	2.00	0.010000	0.020000	921,900	18,438.00
Total					106,901.38

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

Example: Accident Year 1, Year 1 Payout

$$(0.1914 / 2) \times 0.7913 \times \$1,000,000 = \$75,722.63$$

**INTERNAL RATE OF RETURN ANALYSIS
EXPLANATORY NOTES**

**TABLE IV: TAX CREDITS AVAILABLE FROM UNDERWRITING OPERATIONS
PAGE 2**

Column (6) The IRS Discount Factors are a tabulation of discount factors published for carriers by the Internal Revenue Service.

Column (7) & The Losses Discounted for Accident Years 1 and 2, respectively, are the change in
Column (8) 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: \$400,056.00

Accident Year 1 Paid Through Year 2:

$\$75,722.63 + 118,964.44 = \$194,687.06$

Accident Year 1 Undiscovered Reserve, Year 2:

$\$400,056.00 - 194,687.06 = \$205,368.94$

IRS Discount Factor: 0.8748

Accident Year 1 Discounted Reserve, Year 2:

$\$205,368.94 \times 0.8748 = \$179,652.84$

Accident Year 1 Incurred at End of Year 1: \$400,056.00

Accident Year 1 Paid Through Year 1: \$75,722.63

Accident Year 1 Undiscovered Reserve, Year 1:

$\$400,056.00 - 75,722.63 = \$324,333.38$

IRS Discount Factor: 0.8896

Accident Year 1 Discounted Reserve, Year 1:

$\$324,333.38 \times 0.8896 = \$288,511.08$

Change in Discounted Reserves, Year 1 to 2:

$\$179,652.84 - \$288,511.08 = (\$108,858.23)$

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 PENNSYLVANIA F-CLASS - 2025
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) ACCIDENT YEAR 2	(6) IRS DISCOUNT FACTOR	(7) LOSSES DISCOUNTED ACCIDENT YEAR 1	(8) ACCIDENT YEAR 2	(9) TAX CREDITS
-1	0.00	0.00	125.77	0.00	0.00	0	0.00	0.00	26.41
1	921,900.00	455,787.36	106,901.38	75,722.63	0.00	0.8896	288,511.08	0.00	-18,088.36
2	0.00	-455,787.36	41,488.83	118,964.44	134,789.44	0.8748	-108,858.23	228,084.93	10,466.30
3	0.00	0.00	688.44	78,927.19	93,486.19	0.8689	-69,781.92	-85,567.04	3,728.10
4	0.00	0.00	125.77	38,850.38	52,618.13	0.8642	-34,172.97	-46,673.05	2,257.13
5	0.00	0.00	463.38	14,479.88	22,946.25	0.8671	-12,299.39	-20,352.04	1,099.99
6	0.00	0.00	6.62	10,009.31	16,181.06	0.8611	-9,059.57	-13,775.27	706.05
7	0.00	0.00	0.00	9,415.88	11,473.13	0.8670	-7,791.35	-10,308.42	585.74
8	0.00	0.00	0.00	8,268.56	9,376.31	0.8819	-6,495.86	-7,777.14	708.09
9	0.00	0.00	0.00	7,437.75	8,149.88	0.8959	-6,024.28	-6,441.05	655.68
10	0.00	0.00	0.00	6,725.63	7,279.50	0.9051	-5,739.04	-5,928.17	490.96
11	0.00	0.00	0.00	5,459.63	6,013.50	0.9178	-4,613.96	-5,122.79	364.64
12	0.00	0.00	0.00	4,391.44	5,024.44	0.9307	-3,753.60	-4,244.69	297.69
13	0.00	0.00	0.00	3,639.75	4,114.50	0.9439	-3,153.60	-3,520.92	226.74
14	0.00	0.00	0.00	2,967.19	3,362.81	0.9573	-2,602.32	-2,914.09	170.85
15	0.00	0.00	0.00	2,452.88	2,769.38	0.9710	-2,179.96	-2,431.52	128.26
16	0.00	0.00	0.00	2,017.69	2,255.06	0.9847	-1,817.28	-2,004.07	94.79
17	0.00	0.00	0.00	1,622.06	1,859.44	0.9857	-1,588.38	-1,675.04	45.80
18	0.00	0.00	0.00	1,345.13	1,503.38	0.9857	-1,325.90	-1,472.23	10.58
19	0.00	0.00	0.00	1,107.75	1,266.00	0.9857	-1,091.92	-1,247.91	7.12
20	0.00	0.00	0.00	949.50	1,028.63	0.9857	-935.93	-1,013.92	5.94
21	0.00	0.00	0.00	791.25	870.38	0.9857	-779.94	-857.93	4.99
22	0.00	0.00	0.00	633.00	712.13	0.9857	-623.95	-701.95	4.04
23	0.00	0.00	0.00	514.31	593.44	0.9857	-506.96	-584.96	3.32
24	0.00	0.00	0.00	395.63	474.75	0.9857	-389.97	-467.96	2.61
25	0.00	0.00	0.00	316.50	395.63	0.9857	-311.98	-389.97	2.14
26	0.00	0.00	0.00	276.94	276.94	0.9857	-272.98	-272.98	1.66
27	0.00	0.00	0.00	237.38	237.38	0.9857	-233.98	-233.98	1.42
28	0.00	0.00	0.00	197.81	197.81	0.9857	-194.99	-194.99	1.19
29	0.00	0.00	0.00	158.25	158.25	0.9857	-155.99	-155.99	0.95
30	0.00	0.00	0.00	118.69	118.69	0.9857	-116.99	-116.99	0.71
31	0.00	0.00	0.00	118.69	118.69	0.9857	-116.99	-116.99	0.71
32	0.00	0.00	0.00	118.69	118.69	0.9857	-116.99	-116.99	0.71
33	0.00	0.00	0.00	118.69	118.69	0.9857	-116.99	-116.99	0.71
34	0.00	0.00	0.00	79.13	79.13	0.9857	-77.99	-77.99	0.47
35	0.00	0.00	0.00	79.13	79.13	0.9857	-77.99	-77.99	0.47
36	0.00	0.00	0.00	79.13	79.13	0.9857	-77.99	-77.99	0.47
37	0.00	0.00	0.00	79.13	79.13	0.9868	-76.89	-77.99	0.71
38	0.00	0.00	0.00	79.13	79.13	0.9868	-78.08	-76.98	0.67
39	0.00	0.00	0.00	79.13	79.13	0.9868	-78.08	-78.08	0.44
40	0.00	0.00	0.00	79.13	79.13	0.9868	-78.08	-78.08	0.44
41	0.00	0.00	0.00	79.13	79.13	0.9868	-78.08	-78.08	0.44
42	0.00	0.00	0.00	79.13	79.13	0.9868	-78.08	-78.08	0.44
43	0.00	0.00	0.00	79.13	79.13	0.9868	-78.08	-78.08	0.44
44	0.00	0.00	0.00	79.13	79.13	0.9868	-78.08	-78.08	0.44
45	0.00	0.00	0.00	79.13	79.13	0.9868	-78.08	-78.08	0.44
46	0.00	0.00	0.00	79.13	79.13	0.9868	-78.08	-78.08	0.44
47	0.00	0.00	0.00	79.13	79.13	0.9868	-78.08	-78.08	0.44
48	0.00	0.00	0.00	79.13	79.13	0.9868	-78.08	-78.08	0.44
49	0.00	0.00	0.00	79.13	79.13	0.9868	-78.08	-78.08	0.44
50	0.00	0.00	0.00	39.56	39.56	0.9868	-39.04	-39.04	0.22
	921,900.00		149,800.20	400,056.00	391,194.00				

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
EXPLANATORY NOTES**

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 Table IV.

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 PENNSYLVANIA F-CLASS - 2025
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	6.60	0.00	0.00	6.60
-0.75	-0.50	0.00	6.60	0.00	0.00	6.60
-0.50	-0.25	0.00	6.60	0.00	0.00	6.60
-0.25	0.00	0.00	6.60	125.77	0.00	-119.17
0.00	0.25	3,819.40	-4,522.09	19,364.98	0.00	-20,067.67
0.25	0.50	5,265.50	-4,522.09	25,039.10	0.00	-24,295.69
0.50	0.75	71,948.27	-4,522.09	26,785.81	0.00	40,640.37
0.75	1.00	-14,976.52	-4,522.09	35,711.48	0.00	-55,210.10
1.00	1.25	27,449.57	2,616.57	17,191.51	0.00	12,874.63
1.25	1.50	19,728.15	2,616.57	12,587.94	0.00	9,756.79
1.50	1.75	12,659.99	2,616.57	8,156.48	0.00	7,120.08
1.75	2.00	4,755.66	2,616.57	3,552.90	0.00	3,819.33
2.00	2.25	-8,665.86	932.03	661.96	0.00	-8,395.80
2.25	2.50	553.14	932.03	39.72	0.00	1,445.45
2.50	2.75	-1,106.28	932.03	-79.44	0.00	-94.82
2.75	3.00	921.90	932.03	66.20	0.00	1,787.73
3.00	3.25	1,198.47	564.28	86.06	0.00	1,676.70
3.25	3.50	-184.38	564.28	-13.24	0.00	393.14
3.50	3.75	-276.57	564.28	-19.86	0.00	307.57
3.75	4.00	1,014.09	564.28	72.82	0.00	1,505.56
4.00	4.25	2,120.37	275.00	152.25	0.00	2,243.12
4.25	4.50	2,028.18	275.00	145.63	0.00	2,157.55
4.50	4.75	1,567.23	275.00	112.53	0.00	1,729.69
4.75	5.00	737.52	275.00	52.96	0.00	959.56
5.00	6.00	92.19	706.05	6.62	0.00	791.62
6.00	7.00	0.00	585.74	0.00	0.00	585.74
7.00	8.00	0.00	708.09	0.00	0.00	708.09
8.00	9.00	0.00	655.68	0.00	0.00	655.68
9.00	10.00	0.00	490.96	0.00	0.00	490.96
10.00	11.00	0.00	364.64	0.00	0.00	364.64
11.00	12.00	0.00	297.69	0.00	0.00	297.69
12.00	13.00	0.00	226.74	0.00	0.00	226.74
13.00	14.00	0.00	170.85	0.00	0.00	170.85
14.00	15.00	0.00	128.26	0.00	0.00	128.26
15.00	16.00	0.00	94.79	0.00	0.00	94.79
16.00	17.00	0.00	45.80	0.00	0.00	45.80
17.00	18.00	0.00	10.58	0.00	0.00	10.58
18.00	19.00	0.00	7.12	0.00	0.00	7.12
19.00	20.00	0.00	5.94	0.00	0.00	5.94
20.00	21.00	0.00	4.99	0.00	0.00	4.99
21.00	22.00	0.00	4.04	0.00	0.00	4.04
22.00	23.00	0.00	3.32	0.00	0.00	3.32
23.00	24.00	0.00	2.61	0.00	0.00	2.61
24.00	25.00	0.00	2.14	0.00	0.00	2.14
25.00	26.00	0.00	1.66	0.00	0.00	1.66
26.00	27.00	0.00	1.42	0.00	0.00	1.42
27.00	28.00	0.00	1.19	0.00	0.00	1.19
28.00	29.00	0.00	0.95	0.00	0.00	0.95
29.00	30.00	0.00	0.71	0.00	0.00	0.71
30.00	31.00	0.00	0.71	0.00	0.00	0.71
31.00	32.00	0.00	0.71	0.00	0.00	0.71
32.00	33.00	0.00	0.71	0.00	0.00	0.71
33.00	34.00	0.00	0.47	0.00	0.00	0.47
34.00	35.00	0.00	0.47	0.00	0.00	0.47
35.00	36.00	0.00	0.47	0.00	0.00	0.47
36.00	37.00	0.00	0.71	0.00	0.00	0.71
37.00	38.00	0.00	0.67	0.00	0.00	0.67
38.00	39.00	0.00	0.44	0.00	0.00	0.44
39.00	40.00	0.00	0.44	0.00	0.00	0.44
40.00	41.00	0.00	0.44	0.00	0.00	0.44
41.00	42.00	0.00	0.44	0.00	0.00	0.44
42.00	43.00	0.00	0.44	0.00	0.00	0.44
43.00	44.00	0.00	0.44	0.00	0.00	0.44
44.00	45.00	0.00	0.44	0.00	0.00	0.44
45.00	46.00	0.00	0.44	0.00	0.00	0.44
46.00	47.00	0.00	0.44	0.00	0.00	0.44
47.00	48.00	0.00	0.44	0.00	0.00	0.44
48.00	49.00	0.00	0.44	0.00	0.00	0.44
49.00	50.00	0.00	0.22	0.00	0.00	0.22

149,800.20

-15,128.65

**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: $\$400,056.00 - 75,722.63 = \$324,333.38$

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: $\$324,333.38 + 455,787.36 - 451,546.62 = \$328,574.12$

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, 1.86.

Example: $(\$324,333.38 + 455,787.36) / 1.86 = \$419,419.75$

ASSIGNED RISK
INTERNAL RATE OF RETURN ANALYSIS
STATE OF PENNSYLVANIA F-CLASS - 2025
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	0.00	0.00	0.00
-0.50	-0.25	0.00	0.00	0.00	0.00	0.00
-0.25	0.00	0.00	0.00	-1,751.61	1,751.61	0.00
0.00	0.25	17,431.24	201,652.10	187,237.89	31,845.45	117,786.74
0.25	0.50	78,879.71	350,268.60	319,991.49	109,156.83	230,724.90
0.50	0.75	178,727.55	386,230.71	406,742.28	158,215.98	303,741.00
0.75	1.00	324,333.38	455,787.36	451,546.62	328,574.12	419,419.75
1.00	1.25	427,136.53	262,096.17	275,187.15	414,045.55	370,555.22
1.25	1.50	483,176.81	122,889.27	144,922.68	461,143.40	325,841.98
1.50	1.75	496,410.47	33,557.16	58,356.27	471,611.36	284,928.83
1.75	2.00	461,773.50	0.00	17,884.86	443,888.64	248,265.32
2.00	2.25	418,670.16	0.00	0.00	418,670.16	225,091.48
2.25	2.50	375,566.81	0.00	0.00	375,566.81	201,917.64
2.50	2.75	332,463.47	0.00	0.00	332,463.47	178,743.80
2.75	3.00	289,360.13	0.00	0.00	289,360.13	155,569.96
3.00	3.25	266,493.00	0.00	0.00	266,493.00	143,275.81
3.25	3.50	243,625.88	0.00	0.00	243,625.88	130,981.65
3.50	3.75	220,758.75	0.00	0.00	220,758.75	118,687.50
3.75	4.00	197,891.63	0.00	0.00	197,891.63	106,393.35
4.00	4.25	188,535.09	0.00	0.00	188,535.09	101,362.95
4.25	4.50	179,178.56	0.00	0.00	179,178.56	96,332.56
4.50	4.75	169,822.03	0.00	0.00	169,822.03	91,302.17
4.75	5.00	160,465.50	0.00	0.00	160,465.50	86,271.77
5.00	6.00	134,275.13	0.00	0.00	134,275.13	72,190.93
6.00	7.00	113,386.13	0.00	0.00	113,386.13	60,960.28
7.00	8.00	95,741.25	0.00	0.00	95,741.25	51,473.79
8.00	9.00	80,153.63	0.00	0.00	80,153.63	43,093.35
9.00	10.00	66,148.50	0.00	0.00	66,148.50	35,563.71
10.00	11.00	54,596.25	0.00	0.00	54,596.25	29,352.82
11.00	12.00	45,101.25	0.00	0.00	45,101.25	24,247.98
12.00	13.00	37,267.88	0.00	0.00	37,267.88	20,036.49
13.00	14.00	30,858.75	0.00	0.00	30,858.75	16,590.73
14.00	15.00	25,557.38	0.00	0.00	25,557.38	13,740.52
15.00	16.00	21,205.50	0.00	0.00	21,205.50	11,400.81
16.00	17.00	17,644.88	0.00	0.00	17,644.88	9,486.49
17.00	18.00	14,717.25	0.00	0.00	14,717.25	7,912.50
18.00	19.00	12,343.50	0.00	0.00	12,343.50	6,636.29
19.00	20.00	10,365.38	0.00	0.00	10,365.38	5,572.78
20.00	21.00	8,703.75	0.00	0.00	8,703.75	4,679.44
21.00	22.00	7,358.63	0.00	0.00	7,358.63	3,956.25
22.00	23.00	6,250.88	0.00	0.00	6,250.88	3,360.69
23.00	24.00	5,301.38	0.00	0.00	5,301.38	2,850.20
24.00	25.00	4,510.13	0.00	0.00	4,510.13	2,424.80
25.00	26.00	3,877.13	0.00	0.00	3,877.13	2,084.48
26.00	27.00	3,323.25	0.00	0.00	3,323.25	1,786.69
27.00	28.00	2,848.50	0.00	0.00	2,848.50	1,531.45
28.00	29.00	2,452.88	0.00	0.00	2,452.88	1,318.75
29.00	30.00	2,136.38	0.00	0.00	2,136.38	1,148.59
30.00	31.00	1,899.00	0.00	0.00	1,899.00	1,020.97
31.00	32.00	1,740.75	0.00	0.00	1,740.75	935.89
32.00	33.00	1,582.50	0.00	0.00	1,582.50	850.81
33.00	34.00	1,424.25	0.00	0.00	1,424.25	765.73
34.00	35.00	1,266.00	0.00	0.00	1,266.00	680.65
35.00	36.00	1,107.75	0.00	0.00	1,107.75	595.56
36.00	37.00	1,028.63	0.00	0.00	1,028.63	553.02
37.00	38.00	949.50	0.00	0.00	949.50	510.48
38.00	39.00	870.38	0.00	0.00	870.38	467.94
39.00	40.00	791.25	0.00	0.00	791.25	425.40
40.00	41.00	712.13	0.00	0.00	712.13	382.86
41.00	42.00	633.00	0.00	0.00	633.00	340.32
42.00	43.00	553.88	0.00	0.00	553.88	297.78
43.00	44.00	474.75	0.00	0.00	474.75	255.24
44.00	45.00	395.62	0.00	0.00	395.62	212.70
45.00	46.00	316.50	0.00	0.00	316.50	170.16
46.00	47.00	237.37	0.00	0.00	237.37	127.62
47.00	48.00	158.25	0.00	0.00	158.25	85.08
48.00	49.00	79.12	0.00	0.00	79.12	42.54
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: $(\$158,215.98 + 328,574.12) / 2 = \$243,395.05$ $\$243,395.05 \times 0.067857998 / 4 = \$4,129.08$
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: $(\$158,215.98 + 328,574.12) / 2 = \$243,395.05$ $\$243,395.05 \times 0.002994378 / 4 = \728.82
Column (4)	Net Flow from Surplus is the periodic change in Surplus Balance posted in Column (5) of Table VI. Example: $\$303,741.00 - 419,419.75 = (\$115,678.75)$
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: $(\$303,741.00 + 419,419.75) / 2 = \$361,580.38$ $\$361,580.38 \times 0.067857998 / 4 = \$6,134.03$
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: $(\$303,741.00 + 419,419.75) / 2 = \$361,580.38$ $\$361,580.38 \times 0.01197751 / 4 = \$1,082.71$
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 11.79% to investors in the insurance company as required by the Internal Rate of Return Model. Example: $(\$55,210.10) + 4,129.08 - 728.82 - 115,678.75 + 6,134.03 - 1,082.71 = (\$162,437.27)$

ASSIGNED RISK
INTERNAL RATE OF RETURN ANALYSIS
STATE OF PENNSYLVANIA F-CLASS - 2025
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	6.60	0.00	0.00	0.00	0.00	0.00	6.60
-0.75	-0.50	6.60	0.00	0.00	0.00	0.00	0.00	6.60
-0.50	-0.25	6.60	0.00	0.00	0.00	0.00	0.00	6.60
-0.25	0.00	-119.17	14.86	-2.62	0.00	0.00	0.00	-106.94
0.00	0.25	-20,067.67	284.98	-50.30	-117,786.74	999.10	-176.35	-136,796.99
0.25	0.50	-24,295.69	1,196.02	-211.11	-112,938.16	2,956.16	-521.79	-133,814.57
0.50	0.75	40,640.37	2,267.92	-400.31	-73,016.10	4,533.47	-800.20	-26,774.84
0.75	1.00	-55,210.10	4,129.08	-728.82	-115,678.75	6,134.03	-1,082.71	-162,437.27
1.00	1.25	12,874.63	6,299.09	-1,111.84	48,864.53	6,700.76	-1,182.74	72,444.43
1.25	1.50	9,756.79	7,423.57	-1,310.32	44,713.24	5,907.01	-1,042.64	65,447.65
1.50	1.75	7,120.08	7,911.86	-1,396.51	40,913.15	5,180.71	-914.44	58,814.85
1.75	2.00	3,819.33	7,765.50	-1,370.68	36,663.51	4,522.69	-798.29	50,602.06
2.00	2.25	-8,395.80	7,316.44	-1,291.41	23,173.84	4,015.13	-708.70	24,109.49
2.25	2.50	1,445.45	6,736.92	-1,189.12	23,173.84	3,622.00	-639.31	33,149.77
2.50	2.75	-94.82	6,005.69	-1,060.05	23,173.84	3,228.87	-569.92	30,683.60
2.75	3.00	1,787.73	5,274.46	-930.99	23,173.84	2,835.73	-500.53	31,640.25
3.00	3.25	1,676.70	4,714.89	-832.22	12,294.15	2,534.88	-447.43	19,940.97
3.25	3.50	393.14	4,326.96	-763.74	12,294.15	2,326.32	-410.62	18,166.21
3.50	3.75	307.57	3,939.03	-695.27	12,294.15	2,117.76	-373.80	17,589.43
3.75	4.00	1,505.56	3,551.10	-626.80	12,294.15	1,909.19	-336.99	18,296.21
4.00	4.25	2,243.12	3,277.77	-578.55	5,030.39	1,762.24	-311.05	11,423.91
4.25	4.50	2,157.55	3,119.04	-550.54	5,030.39	1,676.90	-295.99	11,137.36
4.50	4.75	1,729.69	2,960.31	-522.52	5,030.39	1,591.56	-280.92	10,508.52
4.75	5.00	959.56	2,801.58	-494.50	5,030.39	1,506.23	-265.86	9,537.40
5.00	6.00	791.62	10,000.25	-1,765.13	14,080.85	5,376.48	-948.99	27,535.08
6.00	7.00	585.74	8,402.90	-1,483.18	11,230.65	4,517.69	-797.41	22,456.38
7.00	8.00	708.09	7,095.48	-1,252.41	9,486.49	3,814.78	-673.34	19,179.09
8.00	9.00	655.68	5,967.94	-1,053.39	8,380.44	3,208.57	-566.34	16,592.90
9.00	10.00	490.96	4,963.88	-876.17	7,529.64	2,668.76	-471.06	14,306.01
10.00	11.00	364.64	4,096.75	-723.11	6,210.89	2,202.55	-388.77	11,762.95
11.00	12.00	297.69	3,382.64	-597.06	5,104.84	1,818.62	-321.00	9,685.72
12.00	13.00	226.74	2,794.70	-493.29	4,211.49	1,502.53	-265.21	7,976.97
13.00	14.00	170.85	2,311.47	-407.99	3,445.77	1,242.72	-219.35	6,543.47
14.00	15.00	128.26	1,914.14	-337.86	2,850.20	1,029.11	-181.65	5,402.20
15.00	16.00	94.79	1,586.62	-280.05	2,339.72	853.02	-150.57	4,443.53
16.00	17.00	45.80	1,318.15	-232.67	1,914.31	708.69	-125.09	3,629.20
17.00	18.00	10.58	1,098.01	-193.81	1,573.99	590.33	-104.20	2,974.91
18.00	19.00	7.12	918.14	-162.06	1,276.21	493.63	-87.13	2,445.92
19.00	20.00	5.94	770.49	-136.00	1,063.51	414.24	-73.12	2,045.06
20.00	21.00	4.99	647.00	-114.20	893.35	347.85	-61.40	1,717.58
21.00	22.00	4.04	544.98	-96.19	723.19	293.00	-51.72	1,417.29
22.00	23.00	3.32	461.76	-81.50	595.56	248.26	-43.82	1,183.58
23.00	24.00	2.61	391.96	-69.18	510.48	210.73	-37.20	1,009.40
24.00	25.00	2.14	332.89	-58.76	425.40	178.98	-31.59	849.06
25.00	26.00	1.66	284.57	-50.23	340.32	153.00	-27.00	702.32
26.00	27.00	1.42	244.30	-43.12	297.78	131.34	-23.18	608.55
27.00	28.00	1.19	209.40	-36.96	255.24	112.58	-19.87	521.58
28.00	29.00	0.95	179.87	-31.75	212.70	96.70	-17.07	441.41
29.00	30.00	0.71	155.71	-27.48	170.16	83.71	-14.78	368.04
30.00	31.00	0.71	136.92	-24.17	127.62	73.61	-12.99	301.70
31.00	32.00	0.71	123.49	-21.80	85.08	66.39	-11.72	242.16
32.00	33.00	0.71	112.75	-19.90	85.08	60.62	-10.70	228.57
33.00	34.00	0.47	102.02	-18.01	85.08	54.85	-9.68	214.73
34.00	35.00	0.47	91.28	-16.11	85.08	49.07	-8.66	201.13
35.00	36.00	0.47	80.54	-14.22	85.08	43.30	-7.64	187.54
36.00	37.00	0.71	72.49	-12.79	42.54	38.97	-6.88	135.03
37.00	38.00	0.67	67.12	-11.85	42.54	36.08	-6.37	128.19
38.00	39.00	0.44	61.75	-10.90	42.54	33.20	-5.86	121.16
39.00	40.00	0.44	56.38	-9.95	42.54	30.31	-5.35	114.36
40.00	41.00	0.44	51.01	-9.00	42.54	27.42	-4.84	107.57
41.00	42.00	0.44	45.64	-8.06	42.54	24.54	-4.33	100.77
42.00	43.00	0.44	40.27	-7.11	42.54	21.65	-3.82	93.97
43.00	44.00	0.44	34.90	-6.16	42.54	18.76	-3.31	87.17
44.00	45.00	0.44	29.53	-5.21	42.54	15.88	-2.80	80.37
45.00	46.00	0.44	24.16	-4.26	42.54	12.99	-2.29	73.57
46.00	47.00	0.44	18.79	-3.32	42.54	10.10	-1.78	66.77
47.00	48.00	0.44	13.42	-2.37	42.54	7.22	-1.27	59.97
48.00	49.00	0.44	8.05	-1.42	42.54	4.33	-0.76	53.18
49.00	50.00	0.22	2.68	-0.47	42.54	1.44	-0.25	46.16

**INTERNAL RATE OF RETURN ANALYSIS
EXPLANATORY NOTES**

**PENNSYLVANIA PRE & POST TAX RETURNS
PAGE 1**

- Column (1) Invested Assets
Categories taken from Best's Aggregates and Averages with values as of December 31, 2022
- Column (2) 12/31/22 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 2023 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 20, 2024), weighted by loss payout pattern provided by the PCRБ for Pennsylvania workers compensation insurance.
- Exempt Bonds based on yields by Maturity published in Bond Buyer, Municipal Market Statistics (June 21, 2024).
- Bonds based on yields published by the Federal Reserve Bank of St. Louis (May 1, 2024).
- Preferred stock yields are from Preferred Stocks of Utilities (June 24, 2024), Preferred Stock Channel.
- Common Stock Yield based on three-month Treasury Bill rate (Federal Reserve Statistical Release H. 15 (June 20, 2024)) plus Ibbotson Differential (2024 Ibbotson SBBI, updated with 2024 data from S&P Global and Federal Reserve).
- Mortgages based on yields published by the Federal Reserve Bank of St. Louis (June 20, 2024).
- 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, Federal Reserve Bank of St. Louis (June 20, 2024).
- Column (4) Investment Gain
Product of 12/31/22 Market Value times Pre-Tax Return expressed as a decimal value by asset type.

**INTERNAL RATE OF RETURN ANALYSIS
EXPLANATORY NOTES**

**PENNSYLVANIA PRE & POST TAX RETURNS
PAGE 2**

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 0.3279. 25% of the otherwise exempt portion (0.6721) is subject to tax.

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. $(0.6721 \times 0.21) + (0.50 \times 0.21 \times 0.3279) + (0.50 \times 0.3279 \times 0.25 \times 0.21) = 0.1842$. 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
PENNSYLVANIA F-CLASS - 2025
PRE & POST TAX RETURNS

Invested Assets (1)	Assets (2)	Pre Tax Return (3)	Investment Gain (4)	Tax Rate (5)	Post Tax Return (6)
Treasuries	187,581,142	4.02	7,536,811	0.21000	3.174136
Exempt Bonds	348,117,620	3.71	12,926,768	0.05250	3.518383
Bonds (Unaffil)	623,996,661	4.68	29,223,844	0.21000	3.699833
Bonds (Affiliated)	3,255,354	4.68	152,459	0.05250	4.437458
Prefer Stk (Unaff)	15,347,442	8.34	1,279,465	0.13125	7.242479
Prefer Stk (Affil)	1,011,615	8.34	84,335	0.05250	7.898992
Common Stk (Unaff)	489,710,712	13.07	63,988,866	0.18418	10.660076
Common Stock (Affil)	95,224,857	13.07	12,442,715	0.15836	10.997485
Mortgage Loans	29,376,341	6.46	1,896,732	0.21000	5.100767
Real Estate	13,147,353	8.13	1,068,442	0.21000	6.420067
Cash and ST Invest	159,615,522	3.99	6,373,980	0.21000	3.154733
Average or Total	1,966,384,619		136,974,416		5.730249

1. Assets are from the latest (2023) Best's A&A, Market Value December 31, 2022

2. The yields shown are an average of the June 2024, June 2023, and July 2022

yields used in prior filings, which come from the following sources:

- a) Treasuries and Cash & Short Term Invest are from: Federal Reserve Bank of St. Louis, June 20, 2024.
- b) Exempt Bonds are from: Bond Buyer, Municipal Market Statistics, Bond Buyer Index, general obligation, 20 years to maturity, mixed quality, June 21, 2024.
- c) Bonds (Unaffiliated and Affiliated) are Moody's Seasoned Aaa Corporate Bond Yield from: Federal Reserve Bank of St. Louis, May 1, 2024
- d) Preferred Stocks are from: Preferred Stocks of Industrials, June 30, 2024, Preferred Stock Channel.
- e) Mortgage Loans are from: Federal Reserve Bank of St. Louis, June 20, 2024.
- f) Common Stock: 3 month Treasury (5.33%) + Ibbotson Differential (8.73%)
- g) Real Estate: 3 month Treasury (5.50%) + Ibbotson Differential (3.94%)
Differential from: Ibbotson & Seigel, AREUA Journal, Vol 12, No. 3, 1984

PRE TAX WEIGHTED PORTFOLIO YIELD - INVEST EXPENSE = 6.7857998

POST TAX WEIGHTED YIELD - POST TAX EXPENSE = 5.5880488

INTERNAL RATE OF RETURN ANALYSIS EXPLANATORY NOTES

PENNSYLVANIA COST OF CAPITAL

- All data taken from Value Line Investment Survey of May 31, 2024.
- 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
 - = $1.83\% \times (1.0 + 0.5 \times 11.48\%) + 11.48\%$
 - = $1.93\% + 11.48\% = 13.42\%$

- DCF HISTORICAL COST OF CAPITAL
 - = $1.83\% \times (1.0 + 0.5 \times 9.60\%) + 9.60\%$
 - = $1.92\% + 9.60\% = 11.51\%$

- DCF DIVIDENDS ONLY COST OF CAPITAL
 - = $1.83\% \times (1.0 + 0.5 \times 5.94\%) + 5.94\%$
 - = $1.88\% + 5.94\% = 7.83\%$

Note: 5.94% = Average (5.92%, 5.97%)

2024
PENNSYLVANIA 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	30.0	\$470.0	\$7,938.0	5.92%
Arch Capital	13.0	\$133.0	\$2,727.0	4.88%
Amer Fnl	26.0	\$76.0	\$1,475.0	5.15%
Berkley	27.0	\$100.0	\$2,837.3	3.52%
Chubb	20.0	\$670.0	\$15,822.0	4.23%
Cinc Fnl	6.0	\$53.0	\$873.0	6.07%
CNA Fnl	24.0	\$185.0	\$2,970.0	6.23%
Erie	0.0			
First American Financial	30.0	\$137.2	\$2,084.8	6.58%
Hanover	31.0	\$34.0	\$783.4	4.34%
Kinsale	14.0			
Markel	20.0			
Merc Gen	26.0			
Old Rep	24.0	\$44.0	\$1,987.6	2.21%
ProAssurance	28.0			
Progressive	24.0	\$415.0	\$6,889.7	6.02%
RLI Corp	6.0			
Selective	14.0	\$28.8	\$503.3	5.72%
	20.17%			5.07%

SOURCE: VALUE LINE INVESTMENT SURVEY, May 31, 2024

2024
PENNSYLVANIA F-CLASS
COST OF CAPITAL

A) CAPM COST OF CAPITAL	12.93% = 4.20% + 0.98*(8.88%)
B) FORECAST COST OF EQUITY CAPITAL	13.42%
C) COST OF EQUITY CAPITAL	13.17% = (A+B) / 2
D) COST OF DEBT CAPITAL	4.01% = 5.07% + (1 - 0.21)
E) DEBT SHARE OF CAPITAL	20.17%
F) INSURANCE SHARE OF DEBT (ASSUMES THAT DEBT DOES NOT ENTIRELY RELATE TO INSURANCE OPERATIONS)	15.13% = (E) * 75%
G) WEIGHTED AVERAGE COST OF CAPITAL	11.79% = (4.01% * 0.1513) + (13.17% * (1 - 0.1513))

SOURCES:

- A: CAPM: BETA - VALUE LINE INVESTMENT SURVEY MAY 31, 2024
 RF - 3 MONTH TREASURY BILL FORECAST FOR 2025 Q2, SURVEY OF PROFESSIONAL FORECASTERS, FEDERAL RESERVE BANK OF PHILADELPHIA, MAY 10TH, 2024
 4.20%
 RM - RF = SHORT HORIZON EQUITY RISK PREMIUM (S&P 500 RETURN TO 1-MONTH TREASURY BILL) RATE, 1926 TO 2023 AVERAGE): IBBOTSON SBBI (2023), S&P GLOBAL, KROLL
 8.88%
- 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 MAY 31, 2024
- E: DEBT SHARE OF CAPITAL: VALUE LINE INVESTMENT SURVEY JUNE 3, 2023

**INTERNAL RATE OF RETURN ANALYSIS
EXPLANATORY NOTES**

PENNSYLVANIA RESERVE-TO-SURPLUS RATIOS

Columns (1)-(4) Reserves and policyholder surplus for commercial casualty predominant carriers all taken from Best's Aggregates and Averages with values as of December 31, 2022.

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).

$$2,082,449,694 + 459,209,274 + 847,641,579 = 3,389,300,547$$
$$3,389,300,547 / 1,817,603,277 = 1.86$$

STATE OF PENNSYLVANIA - 2025

INTERNAL RATE OF RETURN ANALYSIS
PENNSYLVANIA - 2025
RESERVE-TO-SURPLUS RATIO (\$000 OMITTED)

Year	Reserves			Total (4) =(1)+(2)+(3)	Policyholder Surplus (5)	Reserve to Surplus Ratio (6) =(4)/(5)
	Unpaid Losses (1)	Unpaid LAE (2)	Unearned Premium (3)			
2022	244,078,630	51,321,882	96,322,738	391,723,250	200,124,833	1.96
2021	228,459,570	48,775,145	98,954,979	376,189,694	199,495,575	1.89
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
Total	2,082,449,694	459,209,274	847,641,579	3,389,300,547	1,817,603,277	1.86

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