Book of Triangles

Scenario: 0 (Base Case)

Amounts	Paid Loss	Development Age				
AY	12	24	36	48	60	72
2020	720	1,800	2,880	3,600	3,960	4,320
2021	720	1,800	2,880	3,600	3,960	
2022	720	1,800	2,880	3,600		
2023	720	1,800	2,880			
2024	720	1,800				
2025	720					

Amounts	Rptd Loss	Development Age				
AY	12	24	36	48	60	72
2020	2,160	2,880	3,600	3,960	4,320	4,320
2021	2,160	2,880	3,600	3,960	4,320	
2022	2,160	2,880	3,600	3,960		
2023	2,160	2,880	3,600			
2024	2,160	2,880				
2025	2,160					

(1)	(2)	(3)	(4)	(5)	(6)	(7)
		avg. rate	cum. avg.	ann. expos.	rt level adj. to	on level
CY	EP	chg.	rt. lvl.	chg.	2025	EP
2020	7,200		0.0%		1.000	7,200
2021	7,200	0.0%	0.0%	0.0%	1.000	7,200
2022	7,200	0.0%	0.0%	0.0%	1.000	7,200
2023	7,200	0.0%	0.0%	0.0%	1.000	7,200
2024	7,200	0.0%	0.0%	0.0%	1.000	7,200
2025	7,200	0.0%	0.0%	0.0%	1.000	7,200

CY	EE
2020	12.0
2021	12.0
2022	12.0
2023	12.0
2024	12.0
2025	12.0

Counts	Paid Count	Development Age				
AY	12	24	36	48	60	72
2020	2	5	8	10	11	12
2021	2	5	8	10	11	
2022	2	5	8	10		
2023	2	5	8			
2024	2	5				
2025	2					

Counts	Rptd Count	Development Age				
AY	12	24	36	48	60	72
2020	6	8	10	11	12	12
2021	6	8	10	11	12	
2022	6	8	10	11		
2023	6	8	10			
2024	6	8				
2025	6					

(2) = given
(3) = given
(4) = [1 + (4):prior] x [1 + (3)] - 1.0
(5) = [(2) / (2):prior] / [1 + (3)] - 1.0
(6) = [1 + (4):2025] / [1 + (4)]
(7) = (2) x (6)

	paid loss ratio	Development Age				
AY	12	24	36	48	60	72
2020	10%	25%	40%	50%	55%	60%
2021	10%	25%	40%	50%	55%	
2022	10%	25%	40%	50%		
2023	10%	25%	40%			
2024	10%	25%				
2025	10%					

	rptd loss ratio	Development Age				
AY	12	24	36	48	60	72
2020	30%	40%	50%	55%	60%	60%
2021	30%	40%	50%	55%	60%	
2022	30%	40%	50%	55%		
2023	30%	40%	50%			
2024	30%	40%				
2025	30%					

	paid/rptd loss	Development Age				
AY	12	24	36	48	60	72
2020	0.33	0.63	0.80	0.91	0.92	1.00
2021	0.33	0.63	0.80	0.91	0.92	
2022	0.33	0.63	0.80	0.91		
2023	0.33	0.63	0.80			
2024	0.33	0.63				
2025	0.33					

	paid/rptd counts	Development Age				
AY	12	24	36	48	60	72
2020	0.33	0.63	0.80	0.91	0.92	1.00
2021	0.33	0.63	0.80	0.91	0.92	
2022	0.33	0.63	0.80	0.91		
2023	0.33	0.63	0.80			
2024	0.33	0.63				
2025	0.33					

PAID dollars-per-count

	average paid loss	Development Age				
AY	12	24	36	48	60	72
2020	360	360	360	360	360	360
2021	360	360	360	360	360	
2022	360	360	360	360		
2023	360	360	360			
2024	360	360				
2025	360					

REPORTED dollars-per-count

	average rptd loss	Development Age				
AY	12	24	36	48	60	72
2020	360	360	360	360	360	360
2021	360	360	360	360	360	
2022	360	360	360	360		
2023	360	360	360			
2024	360	360				
2025	360					

Case O/S dollars-per-count

	average case O/S	Development Age				
AY	12	24	36	48	60	72
2020	360	360	360	360	360	0
2021	360	360	360	360	360	
2022	360	360	360	360		
2023	360	360	360			
2024	360	360				
2025	360					

Book of Triangles

Scenario: 3 (Case Reserve Adequacy +20% beginning in CY 2023)

Amounts AY	Paid Loss 12	24	36	48	60	72
2020	720	1,800	2,880	3,600	3,960	4,320
2021	720	1,800	2,880	3,600	3,960	
2022	720	1,800	2,880	3,600		
2023	720	1,800	2,880			
2024	720	1,800				
2025	720					

Development Age

Amounts AY	Rptd Loss 12	24	36	48	60	72
2020	2,160	2,880	3,600	4,032	4,392	4,320
2021	2,160	2,880	3,744	4,032	4,392	
2022	2,160	3,024	3,744	4,032		
2023	2,448	3,096	3,744			
2024	2,448	3,096				
2025	2,448					

Development Age

(1) CY	(2) EP	(3) avg. rate chg.	(4) cum. avg. rt. lvl.	(5) ann. expos. chg.	(6) rt level adj. to 2025	(7) on level EP
2020	7,200		0.0%		1.000	7,200
2021	7,200	0.0%	0.0%	0.0%	1.000	7,200
2022	7,200	0.0%	0.0%	0.0%	1.000	7,200
2023	7,200	0.0%	0.0%	0.0%	1.000	7,200
2024	7,200	0.0%	0.0%	0.0%	1.000	7,200
2025	7,200	0.0%	0.0%	0.0%	1.000	7,200

CY	EE
2020	12.0
2021	12.0
2022	12.0
2023	12.0
2024	12.0
2025	12.0

Counts AY	Paid Count 12	24	36	48	60	72
2020	2	5	8	10	11	12
2021	2	5	8	10	11	
2022	2	5	8	10		
2023	2	5	8			
2024	2	5				
2025	2					

Development Age

Counts AY	Rptd Count 12	24	36	48	60	72
2020	6	8	10	11	12	12
2021	6	8	10	11	12	
2022	6	8	10	11		
2023	6	8	10			
2024	6	8				
2025	6					

Development Age

(2) = given

(3) = given

(4) = [1 + (4):prior] x [1 + (3)] - 1.0

(5) = [(2) / (2):prior] / [1 + (3)] - 1.0

(6) = [1 + (4):2025] / [1 + (4)]

(7) = (2) x (6)

AY	paid loss ratio 12	24	36	48	60	72
2020	10%	25%	40%	50%	55%	60%
2021	10%	25%	40%	50%	55%	
2022	10%	25%	40%	50%		
2023	10%	25%	40%			
2024	10%	25%				
2025	10%					

Development Age

AY	rptd loss ratio 12	24	36	48	60	72
2020	30%	40%	50%	56%	61%	60%
2021	30%	40%	52%	56%	61%	
2022	30%	42%	52%	56%		
2023	34%	43%	52%			
2024	34%	43%				
2025	34%					

Development Age

AY	paid/rptd loss 12	24	36	48	60	72
2020	0.33	0.63	0.80	0.89	0.90	1.00
2021	0.33	0.63	0.77	0.89	0.90	
2022	0.33	0.60	0.77	0.89		
2023	0.29	0.58	0.77			
2024	0.29	0.58				
2025	0.29					

Development Age

AY	paid/rptd counts 12	24	36	48	60	72
2020	0.33	0.63	0.80	0.91	0.92	1.00
2021	0.33	0.63	0.80	0.91	0.92	
2022	0.33	0.63	0.80	0.91		
2023	0.33	0.63	0.80			
2024	0.33	0.63				
2025	0.33					

Development Age

PAID dollars-per-count

AY	average paid loss 12	24	36	48	60	72
2020	360	360	360	360	360	360
2021	360	360	360	360	360	
2022	360	360	360	360		
2023	360	360	360			
2024	360	360				
2025	360					

Development Age

REPORTED dollars-per-count

AY	average rptd loss 12	24	36	48	60	72
2020	360	360	360	367	366	360
2021	360	360	374	367	366	
2022	360	378	374	367		
2023	408	387	374			
2024	408	387				
2025	408					

Development Age

Case O/S dollars-per-count

AY	average case O/S 12	24	36	48	60	72
2020	360	360	360	432	432	0
2021	360	360	432	432	432	
2022	360	408	432	432		
2023	432	432	432			
2024	432	432				
2025	432					

Development Age

Book of Triangles
Scenario: 3 (Comparison to Base Case)

** percentages represent changes from the base case*

Amounts AY	Paid Loss 12	24	36	48	60	72
2020	0%	0%	0%	0%	0%	0%
2021	0%	0%	0%	0%	0%	
2022	0%	0%	0%	0%		
2023	0%	0%	0%			
2024	0%	0%				
2025	0%					

Development Age

Amounts AY	Rptd Loss 12	24	36	48	60	72
2020	0%	0%	0%	2%	2%	0%
2021	0%	0%	4%	2%	2%	
2022	0%	5%	4%	2%		
2023	13%	8%	4%			
2024	13%	8%				
2025	13%					

Development Age

(1) CY	(2) EP	(3) avg. rate chg.	(4) cum. avg. rt. lvl.	(5) ann. expos. chg.	(6) rt level adj. to 2025	(7) on level EP
2020	0%					
2021	0%	0%				
2022	0%	0%				
2023	0%	0%				
2024	0%	0%				
2025	0%	0%				

CY	EE
2020	0%
2021	0%
2022	0%
2023	0%
2024	0%
2025	0%

Counts AY	Paid Count 12	24	36	48	60	72
2020	0%	0%	0%	0%	0%	0%
2021	0%	0%	0%	0%	0%	
2022	0%	0%	0%	0%		
2023	0%	0%	0%			
2024	0%	0%				
2025	0%					

Development Age

Counts AY	Rptd Count 12	24	36	48	60	72
2020	0%	0%	0%	0%	0%	0%
2021	0%	0%	0%	0%	0%	
2022	0%	0%	0%	0%		
2023	0%	0%	0%			
2024	0%	0%				
2025	0%					

Development Age

AY	paid loss ratio 12	24	36	48	60	72
2020	0%	0%	0%	0%	0%	0%
2021	0%	0%	0%	0%	0%	
2022	0%	0%	0%	0%		
2023	0%	0%	0%			
2024	0%	0%				
2025	0%					

Development Age

AY	rptd loss ratio 12	24	36	48	60	72
2020	0%	0%	0%	2%	2%	0%
2021	0%	0%	4%	2%	2%	
2022	0%	5%	4%	2%		
2023	13%	8%	4%			
2024	13%	8%				
2025	13%					

Development Age

AY	paid/rptd loss 12	24	36	48	60	72
2020	0%	0%	0%	-2%	-2%	0%
2021	0%	0%	-4%	-2%	-2%	
2022	0%	-5%	-4%	-2%		
2023	-12%	-7%	-4%			
2024	-12%	-7%				
2025	-12%					

Development Age

AY	paid/rptd counts 12	24	36	48	60	72
2020	0%	0%	0%	0%	0%	0%
2021	0%	0%	0%	0%	0%	
2022	0%	0%	0%	0%		
2023	0%	0%	0%			
2024	0%	0%				
2025	0%					

PAID dollars-per-count

Development Age

AY	average paid loss 12	24	36	48	60	72
2020	0%	0%	0%	0%	0%	0%
2021	0%	0%	0%	0%	0%	
2022	0%	0%	0%	0%		
2023	0%	0%	0%			
2024	0%	0%				
2025	0%					

REPORTED dollars-per-count

Development Age

AY	average rptd loss 12	24	36	48	60	72
2020	0%	0%	0%	2%	2%	0%
2021	0%	0%	4%	2%	2%	
2022	0%	5%	4%	2%		
2023	13%	8%	4%			
2024	13%	8%				
2025	13%					

Case O/S dollars-per-count

Development Age

AY	average case O/S 12	24	36	48	60	72
2020	0%	0%	0%	20%	20%	0%
2021	0%	0%	20%	20%	20%	
2022	0%	13%	20%	20%		
2023	20%	20%	20%			
2024	20%	20%				
2025	20%					

Book of Triangles

Scenario: 3 (Case Reserve Adequacy +20% beginning in CY 2023)

Amounts	Paid Loss		Development Age			
AY	12	24	36	48	60	72
2020	720	1,800	2,880	3,600	3,960	4,320
2021	720	1,800	2,880	3,600	3,960	
2022	720	1,800	2,880	3,600		
2023	720	1,800	2,880			
2024	720	1,800				
2025	720					

Amounts	Rptd Loss		Development Age			
AY	12	24	36	48	60	72
2020	2,160	2,880	3,600	4,032	4,392	4,320
2021	2,160	2,880	3,744	4,032	4,392	
2022	2,160	3,024	3,744	4,032		
2023	2,448	3,096	3,744			
2024	2,448	3,096				
2025	2,448		*increase down columns*			

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CY	EP	avg. rate chg.	cum. avg. rt. lvl.	ann. expos. chg.	rt level adj. to 2025	on level EP
2020	7,200		0.0%		1.000	7,200
2021	7,200	0.0%	0.0%	0.0%	1.000	7,200
2022	7,200	0.0%	0.0%	0.0%	1.000	7,200
2023	7,200	0.0%	0.0%	0.0%	1.000	7,200
2024	7,200	0.0%	0.0%	0.0%	1.000	7,200
2025	7,200	0.0%	0.0%	0.0%	1.000	7,200

CY	EE
2020	12.0
2021	12.0
2022	12.0
2023	12.0
2024	12.0
2025	12.0

Counts	Paid Count		Development Age			
AY	12	24	36	48	60	72
2020	2	5	8	10	11	12
2021	2	5	8	10	11	
2022	2	5	8	10		
2023	2	5	8			
2024	2	5				
2025	2					

Counts	Rptd Count		Development Age			
AY	12	24	36	48	60	72
2020	6	8	10	11	12	12
2021	6	8	10	11	12	
2022	6	8	10	11		
2023	6	8	10			
2024	6	8				
2025	6					

(2) = given
(3) = given
(4) = [1 + (4):prior] x [1 + (3)] - 1.0
(5) = [(2) / (2):prior] / [1 + (3)] - 1.0
(6) = [1 + (4):2025] / [1 + (4)]
(7) = (2) x (6)

	paid loss ratio		Development Age			
AY	12	24	36	48	60	72
2020	10%	25%	40%	50%	55%	60%
2021	10%	25%	40%	50%	55%	
2022	10%	25%	40%	50%		
2023	10%	25%	40%			
2024	10%	25%				
2025	10%					

	rptd loss ratio		Development Age			
AY	12	24	36	48	60	72
2020	30%	40%	50%	56%	61%	60%
2021	30%	40%	52%	56%	61%	
2022	30%	42%	52%	56%		
2023	34%	43%	52%			
2024	34%	43%				
2025	34%		*increase down columns*			

	paid/rptd loss		Development Age			
AY	12	24	36	48	60	72
2020	0.33	0.63	0.80	0.89	0.90	1.00
2021	0.33	0.63	0.77	0.89	0.90	
2022	0.33	0.60	0.77	0.89		
2023	0.29	0.58	0.77			
2024	0.29	0.58				
2025	0.29		*decrease down columns*			

	paid/rptd counts		Development Age			
AY	12	24	36	48	60	72
2020	0.33	0.63	0.80	0.91	0.92	1.00
2021	0.33	0.63	0.80	0.91	0.92	
2022	0.33	0.63	0.80	0.91		
2023	0.33	0.63	0.80			
2024	0.33	0.63				
2025	0.33					

PAID dollars-per-count

	average paid loss		Development Age			
AY	12	24	36	48	60	72
2020	360	360	360	360	360	360
2021	360	360	360	360	360	
2022	360	360	360	360		
2023	360	360	360			
2024	360	360				
2025	360					

REPORTED dollars-per-count

	average rptd loss		Development Age			
AY	12	24	36	48	60	72
2020	360	360	360	367	366	360
2021	360	360	374	367	366	
2022	360	378	374	367		
2023	408	387	374			
2024	408	387				
2025	408		*increase down columns*			

Case O/S dollars-per-count

	average case O/S		Development Age			
AY	12	24	36	48	60	72
2020	360	360	360	432	432	0
2021	360	360	432	432	432	
2022	360	408	432	432		
2023	432	432	432			
2024	432	432				
2025	432		*increase down columns*			