Reading: Werner 14: Implementation
Model: Text Example
Problem Type: A(Δ)ARD Method

Find Calculate the base rate required to achieve an average rate increase of 11%

Given current base rate 1,130 current average premium 827.90

Relativities

AOI levels	current	indicated	expos.
less than 100,000	0.600	0.700	6,000
equal to or above 100,000	1.000	0.900	4,900

Territories	current	indicated	expos.
territory 1	0.650	0.500	2,700
territory 2	1.000	1.200	8,200

Fixed Expense Fee

	current	indicated
Fixed Expense Fee	20	20

Prelimiary Step: rebase the indicated relativies so the base level relativity for each variable is 1.0

AOI levels	current	indicated	ind / curr
< 100,000	0.600	0.778	1.296
>= 100,000	1.000	1.000	1.000
exposure-wtd total	0.780	0.878	

Territories	current	indicated	ind / curr
territory 1	0.650	0.417	0.641
territory 2	1.000	1.000	1.000
exposure-wtd total	0.913	0.856	

Step 1 calculate the product of (total indicated) / (total current) across all rating vars: 1+Δs%

AOI:	(total indicated) / (total current)	=	0.878	/	0.780	=	1.125
Territory:	(total indicated) / (total current)	=	0.856	/	0.913	=	0.937
							1.054 = 1+Δs%

Step 2 calculate the proposed average premium: $\bar{P}(p)$

$\bar{P}(p)$	=	(current average premium)	x	(1+ rate change)
	=	827.90	x	1.11
	=	918.97		

Step 3a calculate the proposed base rate adjustment

adjstment	=	[$\bar{P}(p)$ - A(p)] / [$\bar{P}(c)$ - A(c)]	x	1 / (1+Δs%)
	=	1.113	x	0.949
	=	**1.055**		

Step 3b calculate the proposed base rate B(p)

B(p)	=	B(c)	x	adjustment
	=	1,130	x	1.055
	=	1,192.66		

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Find Calculate the base rate required to achieve an average rate increase of 7%

Given current base rate 1,065 current average premium 806.72

Relativities

AOI levels	current	indicated	expos.
less than 100,000	0.600	0.750	4,100
equal to or above 100,000	1.000	0.900	4,400

Territories	current	indicated	expos.
territory 1	0.650	0.800	2,100
territory 2	1.000	0.950	6,400

Fixed Expense Fee

	current	indicated
Fixed Expense Fee	20	30

Prelimiary Step: rebase the indicated relativies so the base level relativity for each variable is 1.0

AOI levels	current	indicated	ind / curr
< 100,000	0.600	0.833	1.389
>= 100,000	1.000	1.000	1.000
exposure-wtd total	0.807	0.920	

Territories	current	indicated	ind / curr
territory 1	0.650	0.842	1.296
territory 2	1.000	1.000	1.000
exposure-wtd total	0.914	0.961	

Step 1 calculate the product of (total indicated) / (total current) across all rating vars: 1+Δs%

AOI:	(total indicated) / (total current)	=	0.920	/	0.807	=	1.139
Territory:	(total indicated) / (total current)	=	0.961	/	0.914	=	1.052
							1.199 = 1+Δs%

Step 2 calculate the proposed average premium: $\bar{P}(p)$

$\bar{P}(p)$	=	(current average premium)	x	(1+ rate change)
	=	806.72	x	1.07
	=	863.19		

Step 3a calculate the proposed base rate adjustment

adjstment	=	[$\bar{P}(p)$ - A(p)] / [$\bar{P}(c)$ - A(c)]	x	1 / (1+Δs%)
	=	1.059	x	0.834
	=	**0.884**		

Step 3b calculate the proposed base rate B(p)

B(p)	=	B(c)	x	adjustment
	=	1,065	x	0.884
	=	940.98		