Reading: Fisher.RiskSharing

Fisher_RS7 (Problem 1)

Model: Source Text

Problem Type: Calculate the retrospective rating premium

Given

B => Basic Premium Amount	$150,000	
c => Loss Conversion Factor	1.100	
T => Tax Multiplier	1.031	
Per-Occurrence Limit	$100,000	
Maximum ratable loss	$500,000	

Large Claims
$15,000
$25,000
$50,000
$100,000
$1,000,000

There are 15 claims on the policy. 10 of those claims are below the per-occurrence limit and total $25,000.
The other 5 claims have the following values:

Find Calculate the retrospective rating premium.

Solution

The retrospective rating formula is: $R = (B + cL) \cdot T$

We're given

B = Basic Premium Amount	$150,000
c = Loss Conversion Factor	1.100
T = Tax Multiplier	1.031

We need to calculate L, the ratable loss and then we may apply the formula.

To find L we must read the claims information carefully and apply the per-occurrence limit and then the maximum ratable loss constraint.

Evaluate each claim in turn and keep track of the cumulative claims so you can apply the maximum ratable loss condition.

Claim	Amount Below per-occurrence limit	Comments
First 10 claims	$25,000	We're told these are all individually below the per-occurrence limit.
$15,000	$15,000	
$25,000	$25,000	
$50,000	$50,000	
$100,000	$100,000	Capped by per-occurrence limit
$1,000,000	$100,000	Capped by per-occurrence limit
TOTAL	$315,000	

Now cap the total at the maximum ratable loss if it exceeds it.

Ratable Loss = $315,000 **<= L**

Finally, apply the retrospective rating formula

R = (150000 + 1.1 * 315000) * 1.031

= $511,892