TABLE 1

ACCIDENT YEAR LOSS TRIANGLE

Accident Year	Age in years 1	2	3	4
1	$X_{1,1}$	$X_{1,2}$	$X_{1,3}$	$X_{1,4}$
2	$X_{2,1}$	$X_{2,2}$	$X_{2,3}$	
3	$X_{3,1}$	$X_{3,2}$		
4	$X_{4,1}$			

where n is the number of accident years which have reached age $j + 1$. This is the usual average of available individual LDFs. This will be called Method I.

Another way to calculate age-to-age factors is to divide the sums:

$$\text{LDF}_j = \sum_i X_{i,j+1} \Big/ \sum_i X_{i,j}.$$

This will be referred to as Method II. Both of these calculations include only those accident years where both $X_{i,j}$ and $X_{i,j+1}$ exist.

Finally, another approach is to define a proportional relationship of losses from one age to the next and find a least squares estimator. If $X_{i,j+1} = p_{i,j}X_{i,j}$, where $p_{i,j}$ is the parameter to be estimated, then an age-to-age factor can be defined as

$$p_j = \text{LDF}_j = \sum_i X_{i,j+1}X_{i,j} \Big/ \sum_i X^2_{i,j}$$

So, this p_j is an estimator of the change in losses from one age to the next, just as the LDFs using the other two methods are. This calculation would again use only those available $X_{i,j}$s. This least squares technique will be called Method III.