

## **Rating without data – how to estimate the loss frequency of loss-free risks**

**Michael Fackler, Aktuar DAV**

freelance actuary  
Munich, Germany  
michael\_fackler@web.de

### **Abstract**

In insurance and even more in reinsurance it occurs that from a risk you only know that it had no losses in the past say seven years. Some of these risks are furthermore such particular that there are no similar risks to infer the loss frequency from.

In this paper we propose a loss frequency estimator which is able to handle such situations reasonably, just relying on the information coming from the risk itself. This estimator can be defined in a mathematically consistent manner and turns out to have desirable properties both in statistical and in business strategic sense.

### **Keywords**

Loss frequency, loss-free, sample mean, mean squared error, reinsurance