ABOUT THE UNCERTAINTY OF PAST INFLATION

A MATHEMATICAL ANSWER TO WHY WE DON'T USE THE DATA OF 80 YEARS AGO

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ABSTRACT

Insurance data, before being used in statistics, often are adjusted for inflation, which is routinely done by application of a suitable inflation index. Whether or not the index exactly matches the inflation of the business remains somewhat uncertain. A model is proposed for this uncertainty, interpreting the gap between the "true" inflation and the applied index series as a random variable. For a special case the mean squared error of the sample mean is calculated. The result is quite different from the traditional model without inflation uncertainty but it looks very much as actuaries would intuitively say it should.

KEYWORDS

Inflation, index series, sample mean, mean squared error, AR(1), Wilkie model