In the statistical theory and practice, when it concerns statistical inferences, an approach, which can conventionally be named classical, is commonly used. In it one think hypothetically what would be got if the unknown parameters of the population are known and we can take all possible samples with fixed size.

In addition to that approach, however, there exists another one, called Bayesian approach. In it the probability that the unknown parameter of the population takes certain value, is derived as a function of the data from a single sample.

The specific thing in the Bayesian approach is that one works with two types of probabilities – *a priori* and *a posteriori*. *A priori* probabilities are assigned initially and *a posteriori* ones are calculated according to Bayes' Theorem, including information about the sample distribution.

Due to the fact that the *a priori* probabilities are assigned and not calculated, most authors emphasize on the rules of assigning rather than the independent use of the *a priori* probabilities. Their use is reduced to the participation of them in the calculation of the *a posteriori* probabilities.

In the present book the opposite is made – the emphasis has been put on the independent use of *a priori* probabilities, while the use of *a posteriori* probabilities is given only for the completion of the presentation.

This approach led to obtaining the results, which are considered to be "impossible". The most important of them are two ones: first, the possibility of making statistical inferences even in case of non-representative samples and second, the possibility of making the confidence intervals of the extrapolation forecasts, regardless of the type of function used for time series analysis.

The theoretical grounding of the approach along with the consideration of conditional illustrative examples is made in the first two chapters of the book. In the third chapter some data of several concrete studies are analyzed and the way by which "the impossible" becomes possible, is shown.