Statistical Inference for the Index Parameter of Some Flexible Families of Distributions for Highly Volatile Financial Data

Abstract: High volatility modern returns markets cannot be modelled adequately by the popularly used distributions such as normal, t or Cauchy distributions. Heavy-tail distributions compared to the ones mentioned are needed. Several families of such heavy-tail distributions will be discussed with their properties and comparisons. Due to the lack of pdfs for these familiies in general, likelihood based inference cannot be invoked. In this scenario, we review some interesting approaches suggested earlier together with their shortcomings. An universal novel approach is presented and shown to have superior performance than the existing ones. The proposed methods alongwith their advantages are enhanced through two real-life data sets.