

A panorama of additional concepts for econometric analysis and some specific research issues

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Received: 8 September 2016 | Revised: 02 January 2017 | Accepted: 10 January 2017

ABSTRACT: This address is rather a little of technicality in spirit. It consists of two parts. In the first part, we present a panorama of additional concepts and tools in statistics which would be useful in econometric modeling and inference. They are heavy-tailed distributions, extreme value theory, copulas, quantile regression, Bayesian statistics, maximum entropy econometrics, information theoretical statistics, random sets and inferential models, and fuzzy set data and logics. In the second part, we choose the popular topic of copulas to illustrate some basic (and applied) research issues in economics.

KEY WORDS: bayesian statistics, Copulas, Extreme value theory, Fuzzy sets, Heavy-tailed distributions, Inferential models, Information theoretic statistics, Maximum entropy, Quantile regression, Random sets.

1. Introduction

As far as quantitative economics is concerned, its analysis is based upon statistical science where two main ingredients are modeling and inference.

The Nobel Prize in Economics, established in 1968, is designed to award significant contributions to the advances of the field. For 2012, the Prize was awarded to the theory of coalitional games and its applications to

market stable allocations. In a sense, basic research could be recognized by this award as it leads to economic understanding!

Current important issues in economics include financial market behavior, market competition, financial risk management, and actuarial science, among others.

The studies of these concerns are essentially empirical, i.e., based upon observed data or evidence, sequentially in time.



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