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# A compendium to information theory in economics and econometrics

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## Abstract

An extensive synthesis is provided of the concepts, measures and techniques of Information Theory (IT). After an axiomatic description of the basic definitions of "information functions", "entropy" or uncertainty and the maximum entropy principle, the paper demonstrates the power of IT as both an interpretive and technically productive tool. It is argued that this power and universality is primarily due to the common need for (i) measures of distance and discrimination and, (ii) appropriate partitioning- aggregation properties. IT offers a very suggestive unification for a bewildering array of phenomena across a wide range of disciplines.

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measures of volatility, movility and divergence are presented. Extending the author's

previous work, estimation of unknown regression functions, densities and score functions is examined based on the maximum entropy principle. Some empirical examples are cited.

Keywords:

Information theory

entropy

inequality

tests

adaptive estimation

MLE

distance functions

uncertainty

aggregation

nonparametrics


This paper is an extension and update to my previous surveys in this area, Maasoumi (1988b,1990). For comments and discussions I thank J.Foster, A. Ullah, reviewers and seminar participants at UC Santa Barbara, UC Riverside, UC San Diego, SMU, Guelph, ESEM Brussels (Aug.92), Houston and Rice

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## Notes

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