

1 Introduction

The second part of this book was concerned with showing statistical theory of information-based approaches as a basis for solving the ill-behaved inverse problem. This third part deals with the applications of the statistical theory of information in macroeconomics. It introduces *ad hoc* macroeconomic theory before building and estimating different models in the context of an inverse problem. A system of national accounts with particular emphasis on input-output tables reflecting complex interactions between economic activities, product markets, factors of production, and the behaviour of different economic agents is presented. A section is devoted to input-output multipliers. Numerical examples are provided using the RAS approach as well as the non-extensive entropy econometrics procedure. Limited extension of these tables will allow us to treat certain themes of the natural environment through a theoretical model. Then, tables such as input-output tables are treated in detail in the context of modelling or forecasting when prior information is insufficient and the matrix is ill-behaved. Faced with this problem, maximum entropy formalism, in particular, Tsallis non-extensive entropy, will be employed.