

Preface

In recent years non-linearities have gained increasing importance in economic and econometric research, particularly after the outbreak of the financial crisis in 2007–2008 and the ensuing economic downturn in many developed countries. The financial crisis has led many researchers to rethink macroeconomics and macroeconomic modeling. First, it is widely acknowledged that financial sector dynamics have not been fully understood in theoretical and applied work. Hence, there is a need to improve our understanding of the destabilizing effects arising from the financial sector and spilling over to economic activity. Second, the existing literature investigating the link between the macroeconomy and the financial sector shows that non-linearities play a central role and are becoming increasingly relevant. Theoretical and empirical studies typically discover highly non-linear amplifying and destabilizing effects on the real economy which come from the financial sector. As a consequence, theoretical models and econometric approaches, which are able to capture this kind of asymmetric dynamics, multiple regimes, and non-linearities, are coming to the fore.

This was the motivation to compile this book with a focus on non-linearities in a broad sense. A lot of research is being conducted to analyze the link between the financial sector and the real economy. I am convinced that it is also important to point out that non-linear relations might be a major factor—albeit neglected in research—in a wide range of economic problems. Disregarding non-linearities could severely distort outcomes.

The book intends to emphasize others areas of research where non-linear features also play a crucial role. Next to contributions that deal with the interaction between financial markets and the real economy, the volume includes studies focusing on non-linearities in other fields of research. The contributions develop novel or use advanced recent methods for working with non-linearities: the construction of new unit-root tests for a non-linear smooth transition type model, the application of Wavelets as a powerful empirical method, a duration analysis approach, a bilinear process, as well as a multi-regime VAR.

This book contains theoretical, computational and empirical contributions that incorporate non-linearities to address various economic problems. It serves as an

inspiration to take potential non-linearities into account in model specification. Researchers should be careful not to employ linear model-types spuriously to problems which include non-linear features. Using the correct model type is indispensable in order to interpret economic processes properly and derive valid policy conclusions. Ignoring this aspect may result in biased economic policy recommendations.

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Part I is devoted to non-linearities within financial sector applications. The contributions in this chapter explore instabilities of the banking sector resulting in harmful macrodynamics, quantitatively assess the nexus between monetary policy and financial frictions, and construct a financial stress index. Part II shows the broad variety of applications of non-linearities in different research fields. This book highlights potential research fields in economics where non-linearities may play a crucial role. Hence, it also features analyses which deal with the Beveridge curve, exchange rate behavior and regimes, and forecasts of economic activity or inflation.

It has been a great pleasure for me to edit this book. First of all, I would like to thank the contributors for their highly interesting and excellent research. Without their effort this book would not exist. I also would like to thank Professor Stefan Mittnik and especially Professor Willi Semmler who encouraged me and gave me the opportunity to publish this book. I am grateful to Dr. Martina Bihn and Ruth Milewski from Springer for their patience, friendly co-operation and organizational support. I am also indebted to Stephan Reichert, Eric Retzlaff and Patrick Pilarek from ZEW who supported the completion of this volume in various ways.

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