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In the past decades, macroeconometrics was often used synonymously with reduced-form time-series analysis. Contrary to this more traditional view, the present book takes into account recent developments linking closely macroeconometric research strategies to economic theory. The title “*Structural Macroeconometrics*” is a bit more general than the actual contents of the book, which provides a successful introduction to the use of DSGE (dynamic stochastic general equilibrium) models for empirical macroeconomics but does not address other approaches of structural modelling.

The book is organized in three parts. Part I contains five chapters covering foundational material. Chapter 2 focuses on approximating and solving DSGE models that typically consist of a nonlinear system of expectational difference equations. As such, they cannot be confronted directly with data. Prior to empirical analysis two steps are required. First, a first-order Taylor series approximation around the steady state yields a linearization. Second, the dynamic linear system has to be solved, i.e., the variables of the model are written as a linear combination of their past values and exogenous innovations (often called structural shocks). This amounts to deriving the state-space representation. Just as DSGE models have to be tuned prior to empirical analysis the data must be prepared, too. In particular, the removal of trends and the isolation of cycles are required. Chapter 3 introduces tools to do so. Several filters that are widely used in practice are described and illustrated with real world business cycle data. To deepen the understanding of filter theory an introduction to frequency domain analysis is provided. The fourth chapter turns to methods of time series analysis. First, reduced-form models are presented (univariate ARMA und multivariate VAR processes). Second, classical time series statistics from the time domain as well as from
the frequency domain are recapitulated. Finally, the Kalman filter is discussed as a mean to evaluate the linearized DSGE model. Chapter 5 deals with three prototypical examples (real business cycle, technology shocks, and asset pricing) taken from the literature.

Part II of the book is dedicated to four different empirical methodologies. The first one is calibration in chap. 6. Although being an empirical strategy, calibration differs from probabilistic approaches in econometrics. Parameter values are taken from micro data or are “chosen” such that the model mimics certain features of the economy that have been identified in advance. Such a procedure is fast and may be a good starting point for improving the model at first stage but ultimately the lack of statistical rigour is often considered as not satisfactory. Consequently, chap. 7 reviews one of the oldest approaches in statistics: the matching of theoretical population moments and their empirical sample counterparts. In econometrics, this strategy has been refined as a generalized method of moments and a simulated method of moments, and their implementation with DSGE models is discussed. Chapter 8 returns to the Kalman filter in that it covers more generally the principle of maximum likelihood estimation. Associated difficulties typically arise from numerical problems with maximization. Consequently, the chapter treats related topics at great detail, including a primer on optimization. Like maximum likelihood, Bayesian estimation requires distributional assumptions, however treating the parameters as random and the data as given. Consequently, parameter estimation turns into a probabilistic statement obtaining a posterior distribution conditional on the data and a prior distribution. Such inference may crucially hinge on the choice of priors, as discussed in chap. 9. Furthermore, advanced techniques of numerical integration are required to evaluate posterior distributions from Bayes’ theorem.

Part III of the book has two chapters that go beyond linearization. Chapter 10 considers nonlinear approximations to DSGE models. Such methods are numerical in nature, with analytical solutions being intractable. The final chapter shows how to confront nonlinear approximation with data. In particular, the concepts from part II are extended to meet the requirements of nonlinear approximations.

DeJong and Dawe have succeeded in writing a very useful introduction to DSGE based empirical macro-modelling on a graduate level. The book is sufficiently concise without being too technical. The authors accompany data sources and web pages with program codes that allow replicating the real world examples presented in the book. Many of the examples are in fact taken from recent research papers, thus documenting the relevance of the advocated research strategy. Furthermore, the book has the merit of outlining