

Bayesian Estimation Of DSGE Models (The Econometric And Tinbergen Institutes Lectures)

Thesis (M.A.) from the year 2010 in the subject Business economics - Banking, Stock Exchanges, Insurance, Accounting, grade: A-, Central European University Budapest, language: English, abstract: Using of developments of the last decade in Bayesian estimation, I estimate a small open economy Dynamic Stochastic General Equilibrium (DSGE) model for Turkey. The thesis explicitly accounts for a monetary regime change from an exchange rate targeting to an explicit inflation targeting with a flexible exchange rate. In both regimes, I investigate the behavior of the monetary authority and the main driving forces of business cycles of key macro economy variables of the Turkish economy. My results can be summarized as follows. Monetary policy focused on the stabilizing of the nominal exchange rate in the exchange rate targeting regime. But, it is mainly concerned with the price stability in the inflation targeting regime. Monetary policy shocks were the main sources of the fluctuations under both regimes. However, the foreign output shock in the first regime and the real exchange rate shock in the second regime appeared as the additional sources of the fluctuations in the business cycles. The Central Bank of Turkey managed to neutralize inflationary shocks and achieved stability in output and consumption after the regime change. Keywords: Turkey, Bayesian estimation, DSGE models, regime change

We present a new method for estimating Bayesian vector auto-regression (VAR) models using priors from a dynamic stochastic general equilibrium (DSGE) model. We use the DSGE model priors to determine the moments of an independent Normal-Wishart prior for the VAR parameters. Two hyper-parameters control the tightness of the DSGE-implied priors on the autoregressive coefficients and the residual covariance matrix respectively. Determining these hyper-parameters by selecting the values that maximize the marginal likelihood of the Bayesian VAR provides a method for isolating subsets of DSGE parameter priors that are at odds with the data. We illustrate the ability of our approach to correctly detect incorrect DSGE priors for the variance of structural shocks using a Monte Carlo experiment. We also demonstrate how posterior estimates of the DSGE parameter vector can be recovered from the BVAR posterior estimates: a new 'quasi-Bayesian' DSGE estimation. An empirical application on US data reveals economically meaningful differences in posterior parameter estimates when comparing our quasi-Bayesian estimator with Bayesian maximum likelihood. Our method also indicates that the DSGE prior implications for the residual covariance matrix are at odds with the data.

This paper presents a novel Bayesian method for estimating dynamic stochastic general equilibrium (DSGE) models subject to a constrained posterior distribution of the implied Sharpe ratio. We apply our methodology to a DSGE model with habit formation in consumption and leisure, using an estimate of the Sharpe ratio to construct the constraint. We show that the constrained estimation produces a quantitative model with both reasonable asset-pricing as well as business-cycle implications.

This paper constructs a DSGE model for an economy with commodity exports. We estimate the model on Russian data, making a special focus on quantitative effects of commodity price dynamics. There is a widespread belief that economic activity in Russia crucially depends on oil prices, but quantitative estimates are scarce. We estimate an oil price effect on the Russian economy in the general equilibrium framework. Our framework is similar to those of Kollmann (2001) and Dam and Linaa (2005), but we extend their models by explicitly accounting for oil revenues. In addition to standard supply, demand, cost-push, and monetary policy shocks, we include the shock of commodity export revenues, which are supposed to be like a windfall. The main objective of the paper is to identify the contribution of structural shocks to business cycle fluctuations in the Russian economy. We estimate the parameters and stochastic processes that govern ten structural shocks using Bayesian techniques. The model yields plausible estimates, and the impulse response functions are in line with empirical evidence. We found that despite a strong impact on GDP from commodity export shocks, business cycles in Russia are mostly domestically based.

Estimating the Parameters of a Small Open Economy DSGE Model

Bayesian Estimation of a Small Open Economy

The Oxford Handbook of Bayesian Econometrics

DSGE Models in Macroeconomics

DSEG-Based Priors for BVARs and Quasi-Bayesian DSGE Estimation

This volume of Advances in Econometrics contains articles that examine key topics in the modeling and estimation of dynamic stochastic general equilibrium (DSGE) models. Because DSGE models combine micro- and macroeconomic theory with formal econometric modeling and inference, over the past decade they have become an established framework for analyzing

This paper addresses the growing gulf between traditional macroeconometrics and the increasingly dominant preference among macroeconomists to use DSGE models and to estimate them using Bayesian estimation with strong priors but not to test them as they are likely to fail conventional statistical tests. This is in conflict with the high scientific ideals with which DSGE models were first invested in their aim of finding true models of the macroeconomy. As macro models are in reality only approximate representations of the economy, we argue that a pseudo-true inferential framework should be used to provide a measure of the robustness of DSGE models.

The revised edition of the essential resource on macroeconometrics Structural Macroeconometrics provides a thorough overview and in-depth exploration of methodologies, models, and techniques used to analyze forces shaping national economies. In this thoroughly revised second edition, David DeJong and Chetan Dave emphasize time series econometrics and unite theoretical and empirical research, while taking into account important new advances in the field. The authors detail strategies for solving dynamic structural models and present the full range of methods for characterizing and evaluating empirical implications, including calibration exercises, method-of-moment procedures, and likelihood-based procedures, both classical and Bayesian. The authors look at recent strides that have been made to enhance numerical efficiency, consider the expanded applicability of dynamic factor models, and examine the use of alternative assumptions involving learning and rational inattention on the part of decision makers. The treatment of methodologies for obtaining nonlinear model representations has been expanded, and linear and nonlinear model representations are integrated throughout the text. The book offers a rich array of implementation algorithms, sample empirical applications, and supporting computer code. Structural Macroeconometrics is the ideal textbook for graduate students seeking an introduction to macroeconomics and econometrics, and for advanced students pursuing applied research in macroeconomics. The book's historical perspective, along with its broad presentation of alternative methodologies, makes it an indispensable resource for academics and professionals.

When estimating DSGE models, the number of observable economic variables is usually kept small, and it is conveniently assumed that DSGE model variables are perfectly measured by a single data series. Building upon Boivin and Giannoni (2006), we relax these two assumptions and estimate a fairly simple monetary DSGE model on a richer data set. Using post-1983 U.S.data on real output, inflation, nominal interest rates, measures of inverse money velocity, and a large panel of informational series, we compare the data-rich DSGE model with the regular - few observables, perfect measurement - DSGE model in terms of deep parameter estimates, propagation of monetary policy and technology shocks and sources of business cycle fluctuations. We document that the data-rich DSGE model generates a higher implied duration of Calvo price contracts and a lower slope of the New Keynesian Phillips curve. To reduce the computational costs of the likelihood-based estimation, we employed a novel speedup as in Jungbacker and Koopman (2008) and achieved the time savings of 60 percent.

Essay on Bayesian Estimation of DSGE Models

Bayesian prior elicitation in DSGE models : macro- vs micropriors

An Estimated DSGE Model For Turkey With A Monetary Regime Change

A Bayesian Estimation of a DSGE Model with Financial Frictions

Estimating How the Macroeconomy Works

Koop, Pesaran and Smith (2011) suggest a simple diagnostic indicator for the Bayesian estimation of the parameters of a DSGE model. They show that, if a parameter is well identified, the precision of the posterior should improve as the (artificial) data size T increases, and the indicator checks the speed at which precision improves. It does not require any additional programming: a researcher just different T. Applying this to Smets and Wouters?(2007) medium size US model, we find that while exogenous shock processes are well identified, most of the parameters in the structural equations are not. -- Bayesian Estimation : Dynamic stochastic general equilibrium models : Identification

In this paper we adopt the Hamiltonian Monte Carlo (HMC) estimator for DSGE models by implementing it into a state-of-the-art, freely available high-performance software package. We estimate a small scale textbook New-Keynesian model and the Smets-Wouters model on US data. Our results and sampling diagnostics confirm the parameter estimates available in existing literature. In addition to

Carlo (SMC) algorithm which permits the estimation of DSGE models with ill-behaved posterior densities.

Lukas Heim evaluates the performance of a price-level targeting rule compared to that of a standard inflation targeting rule. The comparison is based on a medium-scale DSGE model which has been estimated based on state-of-the-art Bayesian methods. The model for the Swiss economy is an expanded version of the framework proposed by Gall and Monacelli (2005) as well as Monacelli (2005). indexation, labor market imperfections, and several additional structural disturbances. The results show that – exactly as expected – the volatility of inflation is quite significantly lower under the price-level targeting regime, whereas the volatility of the output gap is markedly higher conditional on either productivity or preference shocks. Therefore, the introduction of a price-level targeting regime reduces economic activity conditional on both supply-side and demand-side shocks. Since inflation and output are targeted simultaneously, none of the two policies is strictly dominant.

Dynamic stochastic general equilibrium (DSGE) models have become one of the workhorses of modern macroeconomics and are extensively used for academic research as well as forecasting and policy analysis at central banks. This book introduces readers to state-of-the-art computational techniques used in the Bayesian analysis of DSGE models. The book covers Markov chain Monte Carlo techniques that can be used for parameter inference, and the estimation of nonlinear DSGE models based on particle filter approximations of the likelihood function. The theoretical foundations of the algorithms are discussed in depth, and detailed empirical applications and numerical illustrations are provided. The book also gives invaluable advice on how to tailor these algorithms to specific computational problems.

Bayesian Estimation of DSGE Models is essential reading for graduate students, academic researchers, and practitioners at policy institutions.

A Small Open Economy as a Limit Case of a Two-country New Keynesian DSGE Model

Bayesian Estimation of a DSGE Model with Asset Prices

Bayesian Dynamic Factor Analysis of a Simple Monetary DSGE Model

Solving and Estimating Indeterminate DSGE Models

With Special Focus on Housing Sector

High-frequency trading is an algorithm-based computerized trading practice that allows firms to trade stocks in milliseconds. Over the last fifteen years, the use of statistical and econometric methods for analyzing high-frequency financial data has grown exponentially. This growth has been driven by the increasing availability of such data, the technological advancements that make high-frequency trading strategies possible, and the need of practitioners to analyze these data. This comprehensive book introduces readers to these emerging methods and tools of analysis. Yacine Aït-Sahalia and Jean Jacod cover the mathematical foundations of stochastic processes, describe the primary characteristics of high-frequency financial data, and present the asymptotic concepts that their analysis relies on. Ait-Sahalia and Jacod also deal with estimation of the volatility portion of the model, including methods that are robust to market microstructure noise, and address estimation and testing questions involving the jump part of the model. As they demonstrate, the practical importance and relevance of jumps in financial data are universally recognized, but only recently have econometric methods become available to rigorously analyze jump processes. Ait-Sahalia and Jacod approach high-frequency econometrics with a distinct focus on the financial side of matters while maintaining technical rigor, which makes this book invaluable to researchers and practitioners alike.

Episodes of crises that have recently plagued many emerging market economies have lead to a wide-spread questioning of the two traditional generations of models of currency crises. Distressed banking system and adverse credit-markets conditions have been pointed as sources of serious macroeconomics contractions, so introducing these imperfections into standard economic models can help to explain the more recent crises. This paper introduces financial frictions à la Bernanke Gertler and Gilchrist in a two-sector small open economy, suited to analyze an emerging country. The model is estimated on simulated data applying both Bayesian techniques and maximum likelihood method and comparing the results under the two diserent estimation procedures. First, I analyze the injuence of the prior on the estimation outcomes. Results seems to confirjm that one of the main advantages of Bayesian approach is the ability of providing a framework for evaluating fundamentally mis-specified models. Second, I test the sensitivity of estimation outcomes to the sample size, showing how, for large samples, results under Bayesian estimation converges asymptotically to those obtained applying maximum likelihood. A further extension would be to perform the estimation on historical data for an emerging economy that have recently experienced a financial crisis.

This paper reviews Bayesian methods that have been developed in recent years to estimate and evaluate dynamic stochastic general equilibrium (DSGE) models. We consider the estimation of linearized DSGE models, the evaluation of models based on Bayesian model checking, posterior odds comparisons, and comparisons to vector autoregressions, as well as the nonlinear estimation based on a second-order accurate model solution. These methods are applied to data generated from correctly specified and misspecified linearized DSGE models, and a DSGE model that was solved with a second-order perturbation method.

This paper develops and estimates a Dynamic Stochastic General Equilibrium (DSGE) model for the Azerbaijan economy. The model incorporates with open economy features such as habit formation and cost of adjustment in capital accumulation. The model has five types of economic agents: households, firms, aggregators, the rest of the world and the government. It includes a number of shocks and frictions. The model is estimated with Bayesian techniques using thirteen macro economic variables: GDP inflation, private consumption good inflation, investment good inflation, real wages, real private consumption, real investment, real GDP, employment, real exports, real imports, nominal interest rate, foreign real GDP and foreign nominal interest rate. The main aim of the paper is to estimate various specifications of a small open economy model in order to determine the model which provides a better fit of Azerbaijan economy.

Bayesian Estimation of DSGE Models

Theory and Applications

Bayesian Multivariate Time Series Methods for Empirical Macroeconomics

Is the Workhorse Model Identified?

Methods for Applied Macroeconomic Research

I estimate DSGE models with recurring regime changes in monetary policy (inflation target and reaction coefficients), technology (growth rate and volatility), and/or nominal price rigidities. In the models, agents are assumed to know deep parameter values but make probabilistic inference about prevailing and future regimes based on Bayes' rule. I develop an estimation method that takes these probabilistic inferences into account when relating state variables to observed data. In an application to postwar U.S. data, I find stronger support for regime switching in monetary policy than in technology or nominal rigidities. In addition, a model with regime switching policy that conforms to the long-run Taylor principle given in Davig and Leeper (2007) is preferred to a determinacy-indeterminacy model motivated by Lubik and Schorfheide (2004). These empirical results indicate that, even though a passive policy regime produced more volatility in the economy from the early 1970s to the mid-1980s, the economy can be explained by determinacy over the entire postwar period, implying no role for sunspot shocks in explaining the changes in volatility.

We survey Bayesian methods for estimating dynamic stochastic general equilibrium (DSGE) models in this article. We focus on New Keynesian (NK)DSGE models because of the interest shown in this class of models by economists in academic and policy-making institutions. This interest stems from the ability of this class of DSGE model to transmit real, nominal, and fiscal and monetary policy shocks into endogenous fluctuations at business cycle frequencies. Intuition about these propagation mechanisms is developed by reviewing the structure of a canonical NKDSGE model. Estimation and evaluation of the NKDSGE model rests on being able to detrend its optimality and equilibrium conditions, to construct a linear approximation of the model, to solve for its linear approximate decision rules, and to map from this solution into a state space model to generate Kalman filter projections. The likelihood of the linear approximate NKDSGE model is based on these projections. The projections and likelihood are useful inputs into the Metropolis-Hastings Markov chain Monte Carlo simulator that we employ to produce Bayesian estimates of the NKDSGE model. We discuss an algorithm that implements this simulator. This algorithm involves choosing priors of the NKDSGE model parameters and fixing initial conditions to start the simulator. The output of the simulator is posterior estimates of two NKDSGE models, which are summarized and compared to results in the existing literature. Given the posterior distributions, the NKDSGE models are evaluated with tools that determine which is most favored by the data. We also give a short history of DSGE model estimation as well as pointing to issues that are at the frontier of this research.

Abstract This thesis makes three main contributions to the literature on Dynamic Stochastic General Equilibrium (DSGE) models in Macroeconomics. As no previous studies have studied the Chinese economy from the perspective of DSGE, the first contribution of this thesis is estimating a DSGE model for China through a Bayesian approach using the Chinese quarterly post-economic reform data representing the main macro-economic time series 1978.Q1-2007.Q4. Second, this thesis adopts a new method of evaluating macro-economic models in its evaluation of the estimated DSGE model for China. Rather than the classical methods used to evaluate a macro-economic model such as the Maximum Likelihood method, the method of Indirect Inference is used to test the DSGE model. This method differs from other methods in its adoption of a VAR as the auxiliary model that mimics reality. A hybrid model is adopted to improve the ability of the DSGE model to replicate real world results and compared to the original New Keynesian version of the DSGE model developed by Smets and Wouters. Third, considering the restrictions that the prior distribution imposed on the estimated parameters of the model in the Bayesian estimation, the estimation method of Indirect Inference is used in the last chapter of this thesis and compared with the Bayesian estimation. The results of the Bayesian estimation are in agreement with most of the existing literature on DSGE models. However, the results of Indirect Inference testing suggest that the adopted DSGE model does not closely resemble the real data, with a Hybrid model with 50% weight on the NK part performing significantly better. Indirect Inference estimation produces the same results and provides a better estimation of the model.

Dynamic Stochastic General Equilibrium (DSGE) models have become a standard tool in various fields of economics. This type of models has a superior theoretical foundation when compared to the Keynesian models which are traditionally used for policy analysis and forecasting. Although a lot has been done to improve the empirical properties of DSGE models, there is still a need for further research in this field. In this book, the author first considers a closed economy general equilibrium framework to empirically validate the alternative mechanisms for introducing nominal rigidities. As the comparison is done in the context of the Euro area aggregate data, the results provide guidance to researchers dealing with estimation of Euro area DSGE models in general. In the second part of the book, a coherent economic and statistical framework that approximates the structure of the EMU and explicitly accounts for the historical monetary regime change is presented. In such a framework the disaggregate information on the Euro area can be utilized, so that one can explain the area-wide aggregates, and also examine the cross-region linkages.

A Statistical Framework

Second Edition

A small open economy as a limit case of a two-country new keynesian dsge model

Essays on International Real Business Cycle Models and Bayesian Estimation

Macro- Vs Micro-Priors

Bayesian econometric methods have enjoyed an increase in popularity in recent years. Econometricians, empirical economists, and policymakers are increasingly making use of Bayesian methods. This handbook is a single source for researchers and policymakers wanting to learn about Bayesian methods in specialized fields, and for graduate students seeking to make the final step from textbook learning to the research frontier. It contains contributions by leading Bayesians on the latest developments in their specific fields of expertise. The volume provides broad coverage of the application of Bayesian econometrics in the major fields of economics and related disciplines, including macroeconomics, microeconomics, finance, and marketing. It reviews the state of the art in Bayesian econometric methodology, with chapters on posterior simulation and Markov chain Monte Carlo methods, Bayesian nonparametric techniques, and the specialized tools used by Bayesian time series econometricians such as state space models and particle filtering. It also includes chapters on Bayesian principles and methodology.

Covers the essentials in understanding Dynamic Stochastic General Equilibrium (DSGE) models It begins with a basic Real Business Cycle model and gradually adds: imperfect competition; frictions in prices and wages; habit formation; non-Ricardian agents; adjustment cost in investment; of not using maximum installed capacity; and Government.

Bayesian approaches to the estimation of DSGE models are becoming increasingly popular. Prior knowledge is normally formalized either directly on deep parameters' values ('microprior') or indirectly, on macroeconomic indicators, e.g. moments of observable variables ('macroprior'). We introduce a non-parametric macroprior which is elicited from impulse response functions and assess its performance in shaping posterior estimates. We find that using a macroprior can lead to substantially different posterior estimates. We probe into the details of our result, showing that model misspecification is likely to be responsible of that. In addition, we assess to what extent the use of macropriors is impaired by the need of calibrating some hyperparameters.

Resumen Esta tesis presenta tres diferentes experimentos de política utilizando estimaciones Bayesianas de modelos DSGE. En la primera parte, se quiere demostrar que una política fiscal contracíclica es un instrumento importante para la estabilidad macroeconómica. Este resultado es robusto a diferentes controles. En la segunda parte, se demuestra las variaciones de las estimaciones de los parámetros estructurales según la descomposición ciclo-tendencia, si en uno o en dos estadios. Resulta que con un procedimiento a dos estadios la volatilidad del PIB es explicada mayormente por shocks nominales, mientras que con un procedimiento a un estadio por un shock a la inversión. Se argumenta que el procedimiento a un estadio proporciona una estructura probabilística más coherente. La tercera parte de la tesis propone una manera de estimar los parámetros estructurales utilizando la información procedente de distintos filtros. Mientras que con un tipo de estimación con un único filtro el dinero tiene poca influencia en las fluctuaciones de medio plazo, con un sistema de múltiples filtros el dinero tiene un papel importante en la transmisión de los shocks. Abstract This thesis examines three different policy experiments using Bayesian estimates of DSGE models. First, we show that countercyclical fiscal policies are important to smooth fluctuations and that this is true regardless of how we specify the fiscal rule and several details of the model. Second, we show that the sources of output volatility obtained from a cyclical DSGE model crucially depend on whether estimation is done sequentially or jointly. In fact, while with a two step procedure, where the trend is first removed, nominal shocks drive output volatility, investment shocks dominate when structural and trend parameters are estimated jointly. Finally, we examine the role of money for business cycle fluctuations with a single and a multiple filtering approach, where information provided by different filters is joint.

What is the Truth about DSGE Models?

DSGE Model for Azerbaijan

A Bayesian Estimation with Brazilian Data

Construction and Bayesian Estimation of DSGE Models for the Euro Area

Bayesian Analysis of DSGE Models with Regime Switching

*Bayesian Estimation of DSGE Models*Princeton University Press

The last twenty years have witnessed tremendous advances in the mathematical, statistical, and computational tools available to applied macroeconomists. This rapidly evolving field has redefined how researchers test models and validate theories. Yet until now there has been no textbook that unites the latest methods and bridges the divide between theoretical and applied work. Fabio Canova brings together dynamic equilibrium theory, data analysis, and advanced econometric and computational methods to provide the first comprehensive set of techniques for use by academic economists as well as professional macroeconomists in banking and finance, industry, and government. This graduate-level textbook is for readers knowledgeable in modern macroeconomic theory, econometrics, and computational programming using RATS, MATLAB, or Gauss. Inevitably a modern treatment of such a complex topic requires a quantitative perspective, a solid dynamic theory background, and the development of empirical and numerical methods--which is where Canova's book differs from typical graduate textbooks in macroeconomics and econometrics. Rather than list a series of estimators and their properties, Canova starts from a class of DSGE models, finds an approximate linear representation for the decision rules, and describes methods needed to estimate their parameters, examining their fit to the data. The book is complete with numerous examples and exercises. Today's economic analysts need a strong foundation in both theory and application. Methods for Applied Macroeconomic Research offers the essential tools for the next generation of macroeconomists.

"This paper estimates the parameters of a stylized dynamic stochastic general equilibrium model using maximum likelihood and Bayesian methods, paying special attention to the issue of weak parameter identification. Given the model and the available data, the posterior estimates of the weakly identified parameters are very sensitive to the choice of priors. We provide a set of tools to diagnose weak identification, which include surface plots of the log-likelihood as a function of two parameters, heat plots of the log-likelihood as a function of three parameters, Monte Carlo simulations using artificial data, and Bayesian estimation using three sets of priors. We find that the policy coefficients and the parameter governing the elasticity of labor supply are weakly identified by the data, and posterior predictive distributions remind us that DSGE models may make poor forecasts even when they fit the data well. Although parameter identification is model- and data-specific, the lack of identification of some key structural parameters in a small-scale DSGE model such as the one we examine should raise a red flag to researchers trying to estimate--and draw valid inferences from--large-scale models featuring many more parameters"--Federal Reserve Board web site.

Bayesian Multivariate Time Series Methods for Empirical Macroeconomics provides a survey of the Bayesian methods used in modern empirical macroeconomics.

Bayesian Analysis of DSGE Models

Identifiability and Inferential Validity

Identification Using a Diagnostic Indicator

Does the DSGE Model Fit the Chinese Economy?

Macroeconomics tries to describe and explain the economywide movement of prices, output, and unemployment. The field has been sharply divided among various schools, including Keynesian, monetarist, new classical, and others. It has also been split between theorists and empiricists. Ray Fair is a resolute empiricist, developing and refining methods for testing theories and models. The field cannot advance without the discipline of testing how well the models approximate the data. Using a multicountry econometric model, he examines several important questions, including what causes inflation, how monetary authorities behave and what are their stabilization limits, how large is the wealth effect on aggregate consumption, whether European monetary policy has been too restrictive, and how large are the stabilization costs to Europe of adopting the euro. He finds, among other things, little evidence for the rational expectations hypothesis and for the so-called non-accelerating inflation rate of unemployment (NAIRU) hypothesis. He also shows that the U.S. economy in the last half of the 1990s was not a new age economy.

This comprehensive Handbook presents the current state of art in the theory and methodology of macroeconomic data analysis. It is intended as a reference for graduate students and researchers interested in exploring new methodologies, but can also be employed as a graduate text. The Handbook concentrates on the most important issues, models and techniques for research in macroeconomics, and highlights the core methodologies and their empirical application in an accessible manner. Each chapter is largely self-contained, whilst the comprehensive introduction provides an overview of the key statistical concepts and methods. All of the chapters include the essential references for each topic and provide a sound guide for further reading. Topics covered include unit roots, non-linearities and structural breaks, time aggregation, forecasting, the Kalman filter, generalised method of moments, maximum likelihood and Bayesian estimation, vector autoregressive, dynamic stochastic general equilibrium and dynamic panel models. Presenting the most important models and techniques for empirical research, this Handbook will appeal to students, researchers and academics working in empirical macro and econometrics.

We propose a method for solving and estimating linear rational expectations models that exhibit indeterminacy and we provide step-by-step guidelines for implementing this method in the Matlab-based packages Dynare and Gensys. Our method redefines a subset of expectational errors as new fundamentals. This redefinition allows us to treat indeterminate models as determinate and to apply standard solution algorithms. We provide a selection method, based on Bayesian model comparison, to decide which errors to pick as fundamental and we present simulation results to show how our procedure works in practice.

a bayesian estimation with brazilian data

Testing by Indirect Inference

High-Frequency Financial Econometrics

Bayesian Estimation of a Small Open DSGE Model for Switzerland

Are Commodity Price Shocks Important? A Bayesian Estimation of a DSGE Model for Russia