

Econ 221  
Topics in Econometrics  
James D. Hamilton, UCSD  
Spring 2005

Many of the readings can be found in the following three books:

*Lancaster*: Tony Lancaster, *An Introduction to Modern Bayesian Econometrics*, Blackwell Publishing, 2004.

*TSA*: James D. Hamilton, *Time Series Analysis*, Princeton University Press, 1994.

*SSM*: Chang-Jin Kim and Charles R. Nelson, *State-Space Models with Regime Switching*, MIT Press, 1999.

In addition, copies of the slides used in some of the lectures will periodically be linked from the web version of this document (check for last-minute updates before class) at:

<http://weber.ucsd.edu/~jhamilto/Econ221.html>

## **I. Bayesian econometrics**

### A. Introduction

*Lancaster*, Chapter 1

*TSA*, Section 12.1

Morris H. DeGroot, *Optimal Statistical Decisions*, McGraw-Hill, 1970, Chapter 6, and Sections 9.1-9.6

Bradley Efron and Carl Morris, "Data Analysis Using Stein's Estimator and Its Generalizations,"

*Journal of the American Statistical Association*, 1975, vol. 70, pp. 311-319

### B. Bayesian inference in the univariate regression model

*SSM*, Sections 7.1 and 7.2

*TSA*, Section 12.2

*Lancaster*, Chapter 3

### C. Some general issues in Bayesian inference

*Lancaster*, Chapter 2

### D. Numerical Bayesian methods

*Lancaster*, Chapter 4

A.F.M. Smith and A.E. Gelfand, "Bayesian Statistics Without Tears: A Sampling-Resampling Perspective," *American Statistician*, 1992, vol. 46, pp. 84-88.

*SSM*, Sections 7.3 and 7.4

Siddhartha Chib and Edward Greenberg (1996), "Markov Chain Monte Carlo Simulation Methods in Econometrics," *Econometric Theory* 12, pp. 409-431.

James D. Hamilton, Daniel F. Waggoner, and Tao Zha, "Normalization in Econometrics," working paper, University of California, San Diego, 2004.

## **II. Vector autoregressions**

### A. Introduction

*TSA*, Section 11.6, pp. 324-336



B. Normal-Wishart priors for VARs

K. Rao Kadiyala and S. Karlsson, "Numerical Methods for Estimation and Inference in Bayesian VAR-models," *Journal of Applied Econometrics*, 1997, vol. 12, pp. 99-132.

John Geweke, "Antithetic Acceleration of Monte Carlo Integration in Bayesian Inference," *Journal of Econometrics*, 1988, vol. 38, pp. 73-89.

C. Bayesian analysis of structural VARs

Christopher A. Sims and Tao Zha, "Bayesian Methods for Dynamic Multivariate Models," *International Economic Review*, 1998, vol. 39, pp. 949-968.

D. Identification using inequality constraints

Harald Uhlig (2004), "What Are the Effects of Monetary Policy on Output? Results from an Agnostic Identification Procedure," Working paper, Humboldt University.

E. Integrating VAR's with dynamic general equilibrium models

Marco del Negro and Frank Schorfheide (2004), "Priors from General Equilibrium Models for VARs," *International Economic Review* 45, pp. 643-673

### III. Linear state-space models.

A. State-space representation of a dynamic system

TSA, Section 13.1.

B. Kalman filter

TSA, Section 13.2

C. Uses of the Kalman filter

TSA, Sections 13.3-13.6

D. Bayesian analysis of linear state-space models

SSM, Chapter 8

E. Solutions to linear rational expectations models

Olivier Jean Blanchard and Charles M. Kahn, "The Solution of Linear Difference Models under Rational Expectations," *Econometrica* July 1980, 48, pp. 1305-1317.

Robert G. King and Mark W. Watson, "The Solution of Singular Linear Difference Systems under Rational Expectations," *International Economic Review* Nov. 1988, 39, pp. 1015-1026.

Paul Klein, "Using the Generalized Schur Form to Solve a Multivariate Linear Rational Expectations Model," *Journal of Economic Dynamics and Control* 2000, 24, pp. 1405-1423.

Christopher Sims, "Solving Linear Rational Expectations Models," unpublished manuscript, Princeton University.

F. Using the Kalman filter to estimate dynamic stochastic general equilibrium models

Frank Smets and Raf Wouters, "An Estimated Dynamic Stochastic General Equilibrium Model of the Euro Area," *Journal of the European Economic Association*, Sept. 2003, 1, pp. 1123-1175.

Jean-Philippe Laforte, "Pricing Models: A Bayesian DSGE Approach for the US Economy," working paper, Federal Reserve Board, 2005.

Christopher Otrok, "On Measuring the Welfare Cost of Business Cycles," *Journal of Monetary Economics*, 2001, 47, pp. 61-92.

Frank Smets and Raf Wouters, "Comparing Shocks and Frictions in USW and Euro Area Business



Haas, Markus, Stefan Mittnik, and Marc Paoletta (2004), "A New Approach to Markov-Switching GARCH Models," *Journal of Financial Econometrics* 2, 493-530.

D. Stochastic volatility

Kim, Sangjoon, Neil Shepherd, and Siddhartha Chib, "Stochastic Volatility: Likelihood Inference and Comparison with ARCH Models," *Review of Economic Studies*, (1998), 65, 361-393

Siddhartha Chib, Federico Nardari and Neil Shephard , "Markov Chain Monte Carlo Methods for Stochastic Volatility Models", *Journal of Econometrics*, (2002), 108, 281-316