

Hang Qian

831 24TH ST UNIT 42, AMES, IA, 50010

Phone : (515) 441-9618

Email : hqi@iastate.edu

Web : www.public.iastate.edu/~hqi/

EDUCATION

Ph.D. Economics, Iowa State University	2012
M.A. Finance, Fudan University, China	2007
B.A. Economics, Beijing Foreign Studies University, China	2004

RESEARCH INTERESTS

Bayesian Econometrics, Numerical Analysis, Time Series

Dissertation Title: *Essays on Statistical Inference with Imperfect Data*

WORKING PAPERS

A Flexible State Space Model and its Applications	2012
Vector Autoregression with Varied Frequency Data (Job Market Paper)	2011
Sampling Variation, Monotone Instrumental Variables & Bootstrap Bias Correction	2011
Bayesian Portfolio Selection in a Markov Switching Gaussian Mixture Model	2011
Linear Regression Using Both Temporally Aggregated and Temporally Disaggregated Data: Revisited	2010
Estimating a SUR Tobit Model when Errors are Gaussian Scale Mixtures	2009

AWARDS

University Teaching Excellence Award, Graduate College, Iowa State Univ.	Nov. 2011
GPSS Peer Teaching Award, Iowa State University	Apr. 2011

STAND-ALONE TEACHING

Intermediate Microeconomics , Enrollment: 15	Summer 2012
Principles of Macroeconomics , Enrollment: 100	Spring 2012
Intermediate Microeconomics , Enrollment: 74	Fall 2011
Intermediate Microeconomics , Enrollment: 18	Summer 2011
Principles of Macroeconomics , Enrollment: 16	Summer 2010

TEACHING ASSISTANT	
Graduate and Undergraduate Econometrics, Quantitative Methods	2007-10
Roles: Discussion group and recitation leader, substitute instructor, grader	

PRESENTATIONS	
Missouri Economics Conference, St. Louis, MO	Oct. 2011
Linear Regression Using Both Aggregated and Disaggregated Data: Revisited	
Midwest Econometrics Group Meeting, Chicago, IL	Oct. 2011
Sampling Variation, Monotone Instrumental Variables and Bootstrap Bias Correction	

REFERENCES	
Brent Kreider (Major Professor)	John Schroeter (Dissertation Committee Member)
Professor of Economics	Professor of Economics
Iowa State University	Iowa State University
(515) 294-6237	(515) 294-5876
bkreider@iastate.edu	johns@iastate.edu
Rajesh Singh	Joseph Herriges (Dissertation Committee Member)
Associate Professor of Economics	Professor of Economics
Iowa State University	Iowa State University
(515) 294-5213	(515) 294-4964
rsingh@iastate.edu	jaherrig@iastate.edu
Helle Bunzel	Petrutza Caragea
Associate Professor of Economics	Associate Professor of Statistics
Iowa State University	Iowa State University
Contact by Email	(515) 294-5582
hbunzel@iastate.edu	pcaragea@iastate.edu

JOB MARKET PAPER ABSTRACT
<p>Vector Autoregression with Varied Frequency Data</p> <p>Abstract: The Vector Autoregression (VAR) model has been extensively used to analyze dynamic relationships in the macroeconomy. A typical VAR model requires its component variables sampled at a uniformed frequency, regardless of the fact that some macroeconomic data are available monthly and some are only quarterly. Practitioners invariably align the variables to the same frequency either by aggregation or imputation, regardless of information loss or noises gain. In our paper, a VAR model with varied frequency data is studied in a Bayesian context. Lower frequency (aggregated) data are essentially a linear combination of higher frequency (disaggregated) data. The observed aggregated data imposes linear constraints on the autocorrelation structure of the latent disaggregated data. The perception of a constrained</p>

multivariate normal distribution is crucial to our Gibbs sampler. Furthermore, the Markov property of the VAR series enables a block Gibbs sampler, which performs faster for evenly aggregated data. Lastly, our varied frequency VAR model is applied to two classic structural VAR analyses, one with a long-run constraint to identify demand and supply shocks, the other with short-run constraints to identify dynamic effects of monetary policy shocks. These applications demonstrate that it is both feasible and sensible to use data of different frequencies in a new VAR model, the one that keeps the branding of the economic ideas underlying the structural VAR model but only makes minimum modification from a technical perspective.

OTHER PAPER ABSTRACT

Sampling Variation, Monotone Instrumental Variables and the Bootstrap Bias Correction

Abstract: Monotone instrumental variables (MIV) impose a weak inequality on the mean response across subpopulations to identify treatment effects. However, the unfavorable direction of the finite sample bias of the analogue MIV bound limits its applicability. To address this concern, I first propose a conservative estimator that is biased in a reversed but favorable direction. Then a simultaneous multi-level bootstrap procedure is proposed to further correct the bias. The procedure is justified under the assumption that the bias function can be well approximated by a polynomial. This multi-level bootstrap algorithm is feasible and does not suffer from the curse of dimensionality. Monte Carlo evidence supports the usefulness of this approach and it is applied to the disability misreporting problem studied by Kreider and Pepper (2007).

Linear Regression Using Both Temporally Aggregated and Temporally Disaggregated Data: Revisited

Abstract: In applied regression analysis, there are occasions in which complete data for many relevant regressors are collected but data on one or more key covariates are aggregated by household, or by group, region, time, and so on. This paper discusses regression models with aggregated covariate data. A reparameterized likelihood function is found to be separable when one endogenous variable corresponds to one instrument. In that case, the full-information maximum likelihood estimator has an analytic form and thus outperforms the conventional imputed value two-step estimator in terms of both efficiency and computability. A competing Bayesian approach implemented by the Gibbs sampler is also discussed, which is advantageous in more flexible settings where the likelihood does not have the separability property.

Bayesian Portfolio Selection in a Markov Switching Gaussian Mixture Model

Abstract: Departure from normality poses implementation barriers to the Markowitz mean-variance portfolio selection. When assets are affected by common and idiosyncratic shocks, the distribution of asset returns may exhibit Markov switching regimes and have a Gaussian mixture distribution conditional on each regime. The model is estimated in a Bayesian framework using the Gibbs sampler. An application to the global portfolio diversification is also discussed.

Full text available at <http://www.public.iastate.edu/~hqi/research.html>