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EDUCATION

Ph.D. in Economics, University of California, Riverside (*expected June 2010*)

Dissertation Title: Essays on Nonlinear Panel Data Models and Conditional Quantiles

Dissertation Committee: Aman Ullah (Chair), Gloria González-Rivera, Tae-Hwy Lee

M.A. in Economics, University of California, Riverside, 2005-2007

B.Sc. in Economics, Istanbul Bilgi University, Istanbul, 2001-2005

B.Sc. in Economics, London School of Economics External Studies, Istanbul, 2002-2005

RESEARCH AND TEACHING INTERESTS

Econometrics, Panel Data Econometrics, Nonparametric Econometrics, Macroeconomics,
Financial Economics

PUBLICATIONS

- “Comparison of Conditional Quantile Forecasts from Quantile Regression Models”, with Aman Ullah, *A Festschrift in Honor of Dilip Nachane*, forthcoming

WORKING PAPERS

- “Efficient Estimation of a Partially Linear Dynamic Panel Data Model with Fixed Effects: Application to Unemployment Dynamics in the U.S.”
- “A Nonparametric Prewhitening Approach to Predict Multivariate Quantiles”
- “Stochastic Frontier Models with Time-Varying Individual Effects: A Nonparametric Investigation”, with Aditi Bhattacharyya
- “Nonparametric Estimation of Dynamic Panel Data Models with Interactive Fixed Effects” (in progress)

AWARDS AND GRANTS

- Graduate Student Association Conference Travel Grant, UC Riverside, 2008, 2009
- Dean’s Fellowship, UC Riverside, 2005-2010
- University of London Awards for Academic Achievement, 2004

CONFERENCE AND SEMINAR PRESENTATIONS

- Southern Economic Association Annual Meetings, San Antonio, November 2009
- UC Riverside, Department of Economics, October 2009
- 15th International Conference on Panel Data, Bonn, July 2009

- Southern Economic Association Annual Meetings, Washington D.C., November 2008
- International Symposium on Forecasting, Nice, June 2008

TEACHING EXPERIENCE

Lecturer

- Statistics for Economics, UC Riverside, Winter 2010 (scheduled)
- Introductory Econometrics I, UC Riverside, Summer 2009
- Introduction to Money, Banking and Credit, UC Riverside, Summer 2008

Teaching Assistant (UC Riverside)

Econometric Methods II (Graduate), Econometric Methods III (Graduate), Introduction to Econometrics I, Introduction to Money, Banking and Credit, Statistics for Economics, Introduction to Macroeconomics, Principles of Economics

REFEREE FOR

Empirical Economics, Journal of Quantitative Economics, Pakistan Journal of Applied Economics

REFERENCES

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Essays on Nonlinear Panel Data Models and Conditional Quantiles

DISSERTATION SUMMARY

Chapter 1: A Nonparametric Prewhitening Approach to Predict Multivariate Quantiles

This paper proposes a new prewhitening approach to predict the conditional quantiles of time series. Our method involves the estimation in two steps and it is a combination of the multivariate conditional quantile estimator of De Gooijer et al. (2006) and the usual univariate Nadaraya-Watson (NW) conditional quantile estimator. In the first step of our estimation we use the multivariate quantile estimator because we seek to incorporate the dependence in the tails of the time series. In the second step, we correct the first step estimation with the NW estimator. In addition to nonparametric prewhitening quantile estimator (NPPQ), we also consider parametric, univariate nonparametric, multivariate nonparametric and semiparametric conditional quantile estimators. An empirical application to major stock indices from Europe is illustrated and the conditional quantiles of the stock returns are forecasted at 1%, 2.5% and 5% levels. We evaluate the performance of the models with two loss functions, a hit percentage and a Value-at-Risk loss function. We observe that NPPQ outperforms all other conditional quantile estimators in most cases under study. Moreover, gains in the accuracy of the conditional quantile forecasts become more substantial when the forecast horizon increases. If the financial returns exhibit some dependence, then we suggest our proposed estimator NPPQ. Throughout our empirical study, we find very similar results for the semiparametric and the nonparametric quantile models. When semiparametric estimator is superior to nonparametric estimator, we believe that parametric quantile model captures some form of the true quantile function in the first-step of the semiparametric estimation.

Chapter 2: Efficient Estimation of a Partially Linear Dynamic Panel Data with Fixed Effects: Application to Unemployment Dynamics in the U.S

In this paper we consider the problem of efficient estimation of a semiparametric partially linear dynamic panel data model with fixed effects. Using the series estimation method, we develop the generalized method-of-moments (GMM) estimator for the linear component of the semiparametric model. Asymptotic normality for the estimator of the parametric portion and consistency for the nonparametric component are established. We examine the finite sample performance of several dynamic panel

estimators. Our proposed GMM estimator is found to be consistent and the most efficient in the Monte Carlo experiments. Specifically, when the data generating process is nonlinear for the exogenous component, we observe gains over 90% with our GMM estimator upon the IV estimator. As an extension, we relax the assumption of partial linearity so that the model becomes a nonparametric additive model in dynamic and exogenous components. We follow a within-transformation-based method and obtain the estimators of the nonparametric functions. Asymptotic theory and bias correction for the estimators are also derived. We employ the proposed semiparametric and nonparametric estimators to an empirical exercise of unemployment dynamics at the U.S. state level. In particular, the procedures are used to estimate the convergence rates of unemployment and economic growth rates to state level equilibriums from a panel of 51 states over 13 years. We find that partially linear and nonparametric additive models could capture the nonlinearity in the economic growth rate whereas linear dynamic panel estimators fail to do so. We claim that the phenomenon of jobless recovery from the two recessions in our sample could be a possible explanation of the nonlinearities in the economic growth rate.

Chapter 3: Stochastic Frontier Models with Time-Varying Individual Effects: A Nonparametric Investigation

This paper extends a linear stochastic production frontier model with time varying individual effects to a nonparametric model in which the functional form of the production frontier is unspecified. We derive kernel estimators for such a frontier in fixed and random effects frameworks and establish asymptotic properties of the proposed estimators. We implement Monte Carlo simulations to investigate finite sample performances of our estimators. Lastly, we apply the estimators proposed in this paper to estimate the production function and time varying technical efficiency of private manufacturing establishments in Egypt over the period 1988 to 1996.