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EDUCATION

Ph.D. in Economics	University of California, Riverside	Expected 06/2008
M.A. in Economics	University of California, Riverside	Awarded 09/2005
B.Eng. in Foreign Trade	Hangzhou Institute of Electronic Engineering, Hangzhou, China	Awarded 07/1995

RESEARCH INTERESTS

- **Econometrics**
  Panel Data Analysis, Nonparametric Econometrics;
  Econometric Theory, Time Series Analysis, Quantile Econometrics;
  Applied Econometrics, Financial Econometrics.
- **Microeconomics**

TEACHING INTERESTS

- Econometrics and Statistics; Business Economics.
- Microeconomics; Macroeconomics.

DISSERTATION

"'Essays on Paired Data Models, Quantile Regression and Testing Heterogeneity"
Committee: Aman Ullah (Chairperson), Tae-Hwy Lee, R. Robert Russell, Shuba Srinivasan

COMPLETED PAPERS

- "Estimation and Finite Sample Bias and MSE of FGLS estimator of Paired Data Model", with A.Ullah. Forthcoming in *Recent Advances in Linear Models and Related Areas*, Eds: Shalabh and C. Heumann to be published by Springer.
- "Nonparametric Estimation of Random Effect Paired Data Models on Trade"
- "Estimating Price Promotion Effects Using Quantile Vector-Autoregression (QVAR)", with S. Srinivasan, A. Ullah.
- "Testing Slope and Intercept Homogeneity in Panel Data Models"

WORK IN PROGRESS

- "Nonparametric Estimation of FE paired data models"
- "More Efficiency Estimation in Nonparametric Random Effect Models"

AWARDS

Dean's Fellowship Award, University of California, Riverside 2002–2007
Distinguished Graduate of China Ministry of Electronics, 1995
China Electronic Materials Corp Scholarship, 1995
Hangzhou Institute of Electronic Engineering Scholarship 1991-1995

EXPERIENCES

Instructor, Summer 2006, Summer 2007, Economics Department, UC Riverside
Industrial Organization, Introduction to Econometrics I
Teaching Assistant, Fall 2003-present, Economics Department, UC Riverside

Graduate level:	Undergraduate level:	
Econometric Methods I	Intro to Macroeconomics;	Intermediate Microeconomics;
Econometric Methods II	Microeconomics;	Intermediate Macroeconomics;
	Introduction to Econometrics	Statistics for Economics;

Trade Representative, July 1995-Sept. 2002
Sichuan Textiles Import & Export Corporation, Chengdu, Sichuan Province, China

PROFESSIONAL ACTIVITIES

- **Referee:** *Journal of Quantitative Economics* (2)
- **Affiliations:** American Economic Association
  Econometric Society
- **Conference Attended:**
  Conference in honor of Jim Press, University of California, Riverside, 6/2005
  The 7th Southwest Economic Theory Conference, University of California, Riverside, 3/2005
  The 6th Southwest Economic Theory Conference, University of California, Irvine, 3/2004

SKILLS

Computer: MATLAB, Gauss, R, S-Plus, SAS, Eviews, LaTeX.
Languages: Chinese (Native); English (Fluent)

REFERENCES

Aman Ullah
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RESEARCH SUMMARY

"Nonparametric Estimation of Random Effect Paired Data Models on Trade"
(Job Market Paper)

The empirical focus in this paper is on currency union effects on trade. Currency union refers to sovereign countries that delegated their monetary policy to some international or foreign authority but retain sovereignty in other domains. Currency unions, through the nature of integration among countries, are part of the globalization big picture. The recent convert is when European Union introduces Euro in the beginning of 2002. Then the natural question is, what is the effect of joining currency unions on economic activity, particularly trade. Mundell (1961) discussed optimal currency area and recently Rose & Engel (2002) conducted an empirical analysis using global data in 1998. Noting Rose & Engel entertained a linear model ignoring heterogeneity, Cameron & Golotvina (2005) investigated a linear model incorporating heterogeneity as random effects. While their findings confirm qualitative conclusions of Rose & Engel, no further characteristics of data are revealed.

In this paper, we investigate random effect (RE) nonparametric and semi-parametric models of trade in which the heterogeneity is introduced by additive cluster effects and the regressors explain the dependent variable following an unknown functional form. We estimate the composite error covariance matrix using the residuals from nonparametric local linear estimation. In the nonparametric case, we construct a two step estimator incorporating the error correlation structure. In the semi-parametric case, we propose a two step estimator and a series estimator. A simulation study is provided to demonstrate the properties of these estimators. Our findings show that currency union membership does increase trade. Countries in currency unions with small economic sizes will have more mutual trade as percentage of GDP than those with larger economic sizes. The difference of trade between currency union members and nonmembers are greatest for countries with small economic sizes.

"Estimation and Finite Sample Bias and MSE of FGLS estimator of Paired Data Model"

In this paper, we consider a paired data model where the dependent variable is measured according to different pairs of cross sectional units. The cross sectional dependence is introduced by each unit's influence on the paired data. Examples of such paired data can be exchange rates and trade data on countries. Cameron & Golotvina (2005) considered feasible generalized least square estimator (FGLS) for a paired data model. We consider a similar model to theirs and give a tractable FGLS estimator and investigate its finite sample bias and mean square error (MSE). Our estimator uses OLS and fixed effect (FE) residuals to estimate the covariance matrix of composite errors. Under the assumption of normal disturbances, we derive the finite sample bias and MSE of the slope estimator up to order n^{-2} and n^{-4}, respectively. We conducted simulation studies to investigate the influence of number of cross section units on bias and MSE of our FGLS estimator and the influence of changing variances of clustering effects and individual effects. We found that the change in variance of

individual effects has a much bigger effect on MSE than that of variance of clustering effect. The finite sample MSE becomes close to asymptotic MSE when n is relatively big and exhibit downward correction from asymptotic MSE for large n and upward correction for small n.

"Estimating Price Promotion Effects Using Quantile Vector-Autoregression (QVAR)"

We conduct a quantile analysis of responses of manufacturer and retailer performance to price promotions. Using the same data of Srinivasan et al. (2004), we use a quantile vector-autoregressive (QVAR) model to obtain immediate and cumulative price promotion elasticities. Based on QVAR estimates, we conduct generalized impulse response analysis using the approach of Pesaran and Shin (1998). Our results confirm the results of Srinivasan et al. (2004) for the median but we find that the response of both manufacturers and retailers has an inverted U-shape across quantiles with close to zero response at two tail quantiles. We provide a simulation study to demonstrate the revenue and profit implications of using constant price promotion elasticities versus quantile price elasticities. We conclude with the managerial implications of our findings.

"Testing Slope and Intercept Homogeneity in Panel Data Models"

Testing homogeneity of intercepts and slopes becomes an important procedure to clarify whether different cross section units share the same response to the regression variables. In many empirical studies, the SURE (seemingly unrelated regression equation) framework of Zellner (1962) can be used to test the hypothesis of slope homogeneity. SURE has the nice property of taking care of possible cross section error correlations and dynamics under N small and T large. However when N is large and T small, as in many empirical applications, SURE is not applicable. Pesaran, Smith and Im (1996) proposed a testing procedure where the standard fixed effects (FE) estimator is compared to the mean group (MG) estimator. The limitation of this test is when the regressors are strictly exogenous and/or the regressors are time lags of the dependent variable, Pesaran, Smith and Im (1996) test is not applicable. Phillips and Sul (2003) also proposed a Hausman type test for slope homogeneity for stationary first-order autoregression (AR(1)) panel data models in presence of cross section dependence, with N fixed as T goes to infinity. But under cross section dependence, their testing approach is not valid.

Pesaran & Yamagata (2005) proposed a modified version of the test by Swamy (1970) that applies to the case where cross sectional dimension N is large relative to time series dimension T. Their test is asymptotically normal under strictly exogenous regressors and normal errors as (N,T) jointly goes to infinity. This test is applicable to static as well as to stationary dynamic panel data models, possibly with heteroskedastic errors. In this paper, we look into the case of testing hypothesis of homogeneous intercepts and propose a test under identically independently distributed errors which could be nonnormal. We propose a test of heterogeneous intercept and slope under both normal or nonnormal errors and looked at their properties.