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EDUCATION

Ph.D. in Economics, University of California, Riverside, 2003-expected *June* 2008.

M.A. in Economics, Marmara University, Istanbul, Turkey, 2000-2002.

MA Thesis: Empirical Assessment of Term Structure Estimation Methods: An Application on Turkish Bond Market

B.A. in Finance and Accounting, Marmara University, Istanbul, Turkey, 1996-2000.

DISSERTATION

Title: Testing and Modeling Density Specification in Multivariate Time Series Models with Applications to Financial Data

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

RESEARCH AND TEACHING INTERESTS

Primary: Econometrics, Time Series Analysis, Financial Economics.

Secondary: Macroeconomics, Risk Management, Investment Analysis.

PUBLICATIONS

Optimality of the RiskMetrics Model, *Finance Research Letters*, 4, 137-145, September 2007, with G. González-Rivera and T-H. Lee.

COMPLETED WORKING PAPERS

Autocontours: Dynamic Specification Testing, with G. González-Rivera and Z. Senyuz, (*submitted*).

Testing and Modeling Threshold Asymmetries in Multivariate Distributions of U.S. Equity Returns.

WORK IN PROGRESS

Testing Dynamic Specification and Density Functional Form in Multivariate Time Series Models, with G. González-Rivera.

A Nonparametric Investigation of Asymmetries in Stock Returns Distributions.

AWARDS AND GRANTS

International Institute of Forecasters Conference Travel Award, 2007.

Phi Beta Kappa Alumni International Scholarship, 2007.

UC Riverside Graduate Student Association Conference Travel Grants, 2006, 2007.

Dean's Fellowship, University of California, Riverside, 2003-2008.

CONFERENCE AND SEMINAR PRESENTATIONS

UC Riverside Department of Economics, Econometrics Seminar Series, October 2007.
Far Eastern Meetings of the Econometric Society, Taipei (Taiwan), July 2007.
International Symposium on Forecasting, New York City, June 2007.
NBER-NSF Time Series Conference, Montreal, October 2006.
Conference in honor of Jim Press, Riverside, May 2005.
ERC/METU International Conference in Economics, Ankara (Turkey), September 2002.

TEACHING EXPERIENCE

Lecturer

Introductory Econometrics I, *UC Riverside*, Winter 2006, Summer 2006.
Introduction to Economics, *Marmara University*, Fall 2002.
Economics for Engineers (Teaching Fellow), *Marmara University*, Spring 2002.

Teaching Assistant (UC Riverside)

Econometric Methods III (Graduate), Spring 2006.
Macroeconomic Theory I (Graduate), Fall 2004, 2005.
Macroeconomic Theory I-II, Winter 2005, 2007, Fall 2006.
Microeconomic Theory I-II, Spring 2006, Fall 2007.
Introduction to Macroeconomics, Fall 2005.
Introduction to Microeconomics, Fall 2004.
Statistics for Economics, Summer 2005.
Forecasting in Business and Economics, Spring 2005.

OTHER PROFESSIONAL EXPERIENCE

Research Assistant for Professor Gloria González-Rivera, Spring 2005, 2007.
Financial Analyst, Risk Software Technologies (Istanbul), 2001-2003.
Intern, Istanbul Stock Exchange Listing Department, September 1999.

REFEREE FOR

Empirical Economics, Econometric Reviews, Journal of Quantitative Economics (2).

REFERENCES

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DISSERTATION SUMMARY

Chapter 1: Autocontours: Dynamic Specification Tests

Motivated with the methodological advances in nonlinear time series models with non-Gaussian density functions and in density forecasting, we focus on dynamic specification tests for the joint hypothesis of i.i.d.-ness and density functional form. We propose a new battery of tests based on the fundamental properties of independent random variables with identical distributions and introduce a graphical device -the autocontour- that helps to visualize the modeling problems. Based on the theoretical probability coverage of the autocontours, we construct asymptotic *t*-tests and chi-squared tests with standard convergence rates. The tests do not require probability integral type transformations commonly encountered in the density forecasting literature. The effects of parameter uncertainty on the distributions of test statistics are explicitly accounted for by using a simple bootstrap procedure. Monte Carlo simulations show that the finite sample performance of the tests is very good in terms of size and power even in relatively small samples. We illustrate the usefulness of this methodology within the context of GARCH and ACD models using return and duration data from the U.S. stock markets.

Chapter 2: Testing Dynamic Specification and Density Functional Form in Multivariate Time Series Models

This paper contributes to the limited literature on specification testing in multivariate time series models for which all the dependence is contained in the first two moments. Our methodology is applicable to a wide range of models including linear VAR specifications and nonlinear models with multivariate GARCH disturbances. The methodology is based on the multivariate generalization of my first chapter outlined above. In the spirit of goodness-of-fit tests, we also propose an additional test that focuses on the multivariate density functional form of the innovation vector. Although the proposed test aims to detect in-sample misspecification, it can also be applied to the evaluation of density forecasts. We offer several applications of our tests to dynamic models of multiple financial time series under multivariate Gaussian and Student-*t* distributions.

Chapter 3: Testing and Modeling Threshold Asymmetries in Multivariate Distributions of U.S. Equity Returns

My third chapter aims to simultaneously model asymmetries in the conditional means, volatilities and correlations of U.S. stock portfolios in a multivariate threshold framework. We consider alternative specifications in which the threshold variable is based on the market excess return, the size and value premiums of Fama and French (1993), and the realized volatility of the market. We find statistically significant threshold effects with respect to return based threshold variables, but not with respect to the market realized volatility. The results indicate that the threshold based on the Fama-French factors provides a computationally inexpensive and rich specification for modeling asymmetries in high dimension. Using subsampling for drawing inference, we find that small size portfolios exhibit the strongest conditional return asymmetry. In terms of the correlations with the market portfolio, defensive industries, small firms, and value firms exhibit the greatest asymmetries. Substantial asymmetry in conditional volatility appears to be a common characteristic of all portfolio groups. We evaluate the performance of the proposed model in terms of out-of-sample predictive ability and find that there are significant economic gains in incorporating asymmetries in the portfolio decisions.