

January 2010

## **CURRICULUM VITAE**

Clifford A. Ball  
Professor of Management  
Owen Graduate School of Management  
Vanderbilt University  
Nashville, Tennessee 37203

British Citizen  
Permanent Resident of U.S.A.

### **EDUCATION**

B.Sc., Mathematics, University of Nottingham, 1974  
M.Sc., Mathematics, University of Nottingham, 1975  
Ph.D., Mathematics, University of New Mexico, 1980

### **ACADEMIC APPOINTMENTS**

Assistant Professor of Statistics, University of Michigan, 1980-86  
Visiting Associate Professor, London Business School, 1987-88  
Associate Professor of Statistics, University of Michigan, 1987-90  
Associate Professor of Management, Owen Graduate School of Management,  
Vanderbilt University, 1990-2001  
Professor of Management, Owen Graduate School of Management,  
Vanderbilt University, 2002 - Present

### **NON-ACADEMIC EMPLOYMENT**

Spent sabbatical leave working in New York at the headquarters of Shearson Lehman specializing in options and fixed income research.

Consultant in equity portfolio performance measurement for Van Hedge Funds.

### **OFFICES IN PROFESSIONAL ASSOCIATIONS**

President:

Ann Arbor Chapter, American Statistical Association, 1983-84

Research Associate:

The Center for the Study of Futures Markets, Columbia University

## PUBLICATIONS IN REFERRED JOURNALS

- [1] "A Nonparametric Approach to Accelerated Life Testing," (Moshe Shaked, William J. Zimmer and Clifford A. Ball). **Journal of the American Statistical Association**, 74, 694-699, September 1979.
- [2] "Gold and the Weekend Effect," (Clifford A. Ball, Walter N. Torous and Adrian E. Tschoegl). **Journal of Futures Markets**, 2, No. 2, 175-182, Summer 1982.
- [3] "The Decision to Establish a Foreign Bank Branch or Subsidiary: An Application of Binary Classification Procedures," (Clifford A. Ball and Adrian E. Tschoegl), **Journal of Financial and Quantitative Analysis**, XV11, No. 3, 411-424, September 1982.
- [4] "A Simplified Jump Process for Common Stock Returns." (Clifford A. Ball and Walter N. Torous), **Journal of Financial and Quantitative Analysis**, 18, No. 1, 53-65, March 1983.
- [5] "Bond Price Dynamics and Options." (Clifford A. Ball and Walter N. Torous), **Journal of Financial and Quantitative Analysis**, 18, No. 4, 517-531 December 1983.
- [6] "The Maximum Likelihood Estimation of Security Price Volatility: Theory, Evidence, and Application to Option Pricing." (Clifford A. Ball and Walter N. Torous), **Journal of Business**, 57, 97-112, January 1984.
- [7] "The Degree of Price Resolution: The Case of the Gold Market." (Clifford A. Ball, Walter N. Torous and Adrian E. Tschoegl), **Journal of Futures Markets**, 5, No. 1, 29-43, Spring 1985.
- [8] "An Empirical Investigation of the EOE Gold Options Market." (Clifford A. Ball, Walter N. Torous and Adrian E. Tschoegl), **Journal of Banking and Finance**, 9, 101-113, 1985.
- [9] "On Inferring Standard Deviations from Path Dependent Options." (Clifford A. Ball, Walter N. Torous and Adrian E. Tschoegl), **Economics Letters**, 18, No. 4, 377-380, 1985.
- [10] "On Jumps in Common Stock Prices and Their Impact on Call Option Pricing." (Clifford A. Ball and Walter N. Torous), **Journal of Finance**, XL, No. 1, 155-173, March 1985.
- [11] "Futures Options and the Volatility of Futures Prices." (Clifford A. Ball and Walter N. Torous), **Journal of Finance**, XLI, No. 4, 857-870, September 1986.
- [12] "Estimation Bias Induced by Discrete Observations," (Clifford A. Ball), **Journal of Finance**, XLIII, No. 4, 841-865, September 1988.
- [13] "Investigating Security Price Performance in the Presence of Event-Day Uncertainty." (Clifford A. Ball and Walter N. Torous), **Journal of Financial Economics**, 22, 122-153,

October 1988.

[14] "A Jump Diffusion Model for the European Monetary System," (Clifford A. Ball and Antonio Roma), **Journal of International Money and Finance**, 12, 475-492, October 1993.

[15] "A Review of Stochastic Volatility Models with Application to Option Pricing," (Clifford A. Ball), **Financial Markets, Institutions, and Instruments**, 2, No. 5, 55-71, December 1993.

[16] "Target Zone Modelling and Estimation for European Monetary System Exchange Rates." (Clifford A. Ball and Antonio Roma), **Journal of Empirical Finance**, 1, 385-420, 1994.

[17] "Stochastic Volatility Option Pricing," (Clifford A. Ball and Antonio Roma), **Journal of Financial and Quantitative Analysis**, 589-607, December 1994.

[18] "On Unit Roots and the Estimation of Interest Rate Dynamics." (Clifford A. Ball and Walter Torous), **Journal of Empirical Finance**, 215-238, 1996.

[19] "Comment on Andy Lo's paper," (Clifford A. Ball), Fat-Tails, Long Memory, and The Stock Market Since the 1960's. **Economic Notes**, 26, No. 2, 247-250, 1997

[20] "Regulatory Capital of Financial Institutions: A Comparative Analysis," (Clifford A. Ball and Hans R. Stoll), **Financial Markets, Institutions and Instruments**, 7, No. 3, 1-57 August 1998.

[21] "Detecting Mean Reversion within Reflecting Barriers: Application to the European Exchange Rate Mechanism." (Clifford A. Ball and Antonio Roma), **Applied Mathematical Finance**, 5, 1-15, 1998.

[22] "The Stochastic Volatility of Short-term Interest Rates: Some International Evidence." (Clifford A. Ball and Walter Torous), **Journal of Finance**, LIV, No. 6, 2339-2359, December 1999.

[23] "Stochastic Correlation Across International Stock Markets." (Clifford A. Ball and Walter N. Torous), **Journal of Empirical Finance**. 7, 373-388, 2000

[24] "True Spreads and Equilibrium Prices" (Clifford A. Ball and Tarun Chordia), **Journal of Finance**, Vo. 56, No. 5, 1801-1835, October 2001.

## **CURRENT RESEARCH INTERESTS**

Equities, bonds, options, and futures contracts; empirical testing of financial models; stochastic processes and statistical applications to finance; stochastic volatility and correlation the European monetary system; capital requirements, risk management and value-at-risk.

## **WORKING PAPERS**

- [A] "Estimation of First Order Autoregressive/Unit Root Models with Rounding." WP #452
- [B] "Stochastic Covariance Estimation: A Principal Components Approach," with Walter Torous WP #818
- [C] "Regime Shifts in Short Term Riskless Interest Rates" with Walter Torous. WP #130
- [D] "Contagion in the Presence of Stochastic Interdependence" with Walter Torous WP #04-12

## **GRANTS RECEIVED**

The Centre for the Study of Futures Markets, Columbia University, 1984  
American Community Banker Grant, 1995/96  
Chicago Board Options Exchange Grant, 1995/96  
Chicago Mercantile Exchange Grant, 1995/96

## **UNIVERSITY COMMITTEES**

Research Committee  
Committee on Instruction  
IEMBA Foresight Committee  
Admissions Committee  
University Appeals Committee  
University Benefits Committee  
Recruiting Committee Chair  
Owen Executive Committee  
Dean Search Committee  
Executive Committee, Graduate School Council

## **ADMINISTRATIVE ROLES**

Director of Ph.D. Program, Owen School  
Faculty Director MS Finance Program, Owen School

## **GRANT REVIEWER**

National Science Foundation

## **MEMBERSHIPS**

American Finance Association  
American Statistical Association  
The Econometric Society  
Beta Gamma Sigma  
Owen Associates

## **Ph.D. SUPERVISION**

## **DISSERTATION COMMITTEE**

Sang Sin An:

“On the Ordinary Ridge Regression Estimator Based on a Fixed  
Biasing Constant”

Thomas John George:

“The Impact of Insider Trading on Market Efficiency and  
Outsiders’ Welfare”

Tae Park:

“Adjustable Rate Mortgages and Mortgage Backed Securities”

John Schatzberg:

“Voluntary Liquidation and Stockholder Returns”

Seth Sarabjeet:

“The Price Effects of Information Releases: The Case of Dividends”

Chitranjan Sinha: (Chair of Committee)

“Estimating Risk Premia and Volatility: Applications to Option Pricing”

Veronika Krepely (co-chair of Committee)

“Essays on Liquidity and Trading Activity”

## **REFEREE FOR NUMEROUS LEADING ACADEMIC JOURNALS (Selected)**

Journal of the American Statistical Association  
Journal of Business  
Journal of Business and Economic Statistics  
Journal of Finance  
Management Science  
The Review of Financial Studies  
The Journal of Empirical Finance  
Journal of International Money and Finance  
Journal of Financial and Quantitative Analysis  
Journal of Futures Markets  
Real Estate Economics

**Associate Editor:** Journal of Empirical Finance

## TEACHING EXPERIENCE

Taught widely in finance, statistics, and econometrics

Undergraduate, graduate and Ph.D. classes in introductory statistics, applied regression, advanced econometrics, corporate finance, investments, options, stochastic processes and advanced financial theory.

Awarded Grant for Teaching Excellence at Owen, 1992

Ranked in top five at Owen among outstanding faculty in the 1992 Business Week survey

Finalist for Webb Teacher of the Year at Owen, 1992

IEMBA Professor of the Year for Teaching Excellence, 1998

(International Executive MBA) This 20-month joint program involved experienced Vanderbilt and University of Florida business faculty.

Recent Courses taught at Owen:

MGT 381	Managerial Statistics (Core MBA class in Statistics)
MGT 403A, B	Financial Econometrics (Core 2 module sequence in MS Finance)
MGT 431	Investment Management (MBA required elective for Finance concentration)
MGT 482	Managerial Statistics II (Elective MBA class in Applied Regression Analysis)
MGT 539	Risk Management (Elective MBA class)
MGT 681	Stochastic Processes (Elective class for advanced MBA and Ph.D. students)
MGT 632	Advanced Finance Theory (Advanced Ph.D. class in Finance Theory)

## PROFESSIONAL MEETINGS AND PRESENTATIONS

Presentations at Michigan, Wharton, Duke and London Business Schools. Active at Western Finance Association Meetings, European Finance Association Meetings, American Statistical Association Meetings and American Finance Association Meetings.

## **SELECTED RECENT PROFESSIONAL MEETINGS AND PRESENTATIONS**

August 1993

Presented a series of lectures on stochastic volatility to research groups in equities and fixed income research at Goldman Sachs, New York.

October 1993

Presented a "Review of Stochastic Volatility Option Pricing," at the 20th Anniversary Conference of the Black-Scholes-Merton Option Pricing Model at Duke University. Black, Scholes and Merton were all in attendance for my talk.

January 1994

Presented "On Unit Roots and Estimation of Interest Rate Dynamics" at the American Finance Association Meetings in Boston.

February 1994

Discussed a target zone exchange rate paper by Bernard Dumas at the Federal Reserve Conference on Derivatives in Miami.

June 1994

Presented "A Stochastic Volatility Model for Short Term Interest Rates and the Detection of Structural Shifts" at the Western Finance Association Meetings in Santa Fe.

April 1995

Discussed a paper on trading practices and volatility at the 1st conference on High Frequency Data in Finance in Zurich, Switzerland.

May 1995

Discussed a paper on implied risk premium in futures contract derivatives at the Chicago Board of Trade Meetings in Chicago.

December 1996

Discussed a paper on risk management and derivatives at a conference in Siena, Italy sponsored by Banca Monte dei Paschi.

April 1998

Presented paper on stochastic covariance estimation at the High Frequency Data in Finance Conference in Zurich, Switzerland.

January 1999

Spread paper presented at Computational Finance '99, in New York City

March 1999

Spread paper presented at NBER Conference in Boston

November 1999

Stochastic Correlation paper presented at the Journal of Empirical Finance Conference in Portugal.

August 2000

Discussed paper on exotic options at the European Finance Association Meetings in London, UK.

June 2001

Western Finance Meetings in Tucson, Arizona

June 2003

Discussed term structure paper at the Western Finance meetings in Los Cabos, Mexico

## **MISCELLANEOUS**

Community Presentations on Financial Planning  
National Radio Live Interviews on the European Monetary System  
Vanderbilt 7:29 Club Presentations  
Dean's Reception in Washington, D.C. Presentation