owen AT VANDERBILT

FINANCIAL MARKETS

CONTENTS

Research Workshops: A list of workshops conducted during 1998-1999. 5

Current Activities of Center Faculty: A listing of research endeavors by the faculty. 6

Faculty Research Papers: Current working papers since January 1998. 10

FINANCIAL MARKETS RESEARCH CENTER • 1999

Conference on

Coping with Global Volatility

The last Financial Markets Research Center conference of the millennium, held on April 15th and 16th, focused on the topic, "Coping with Global Volatility," a subject reflecting the significant volatility of the prior year. Emerging markets faced major difficulties in recovering from banking and exchange rate crises; Europe and the Euro headed into uncharted territory; and the near demise of Long Term Capital Management disrupted U.S. financial markets. While U.S. equities markets recovered relatively unscathed, foreign markets and fixed income markets continued to feel the aftershocks of the financial markets disruptions. The conference offered insights into the sources and effects of volatility and the appropriate response of investors and regulators.

The conference was sponsored by the Financial Markets Research Center and by a generous grant from the New York Stock Exchange.

The conference began with a presentation by **Peter Fisher,** Executive Vice President of the Federal Reserve Bank of New York, whose good offices helped resolve the LTCM crisis of the preceding September. Fisher cautioned that regulatory intervention in financial markets should be limited, noting that volatility could be a sign of either sickness or health. The role of the Federal Reserve Bank as regulator was to make markets boring, while recognizing that prices need to adjust to equilibrium levels without interference. In his view, the volatility in Southeast Asia reflected an absence of risk management systems. He concluded his remarks by emphasizing the need of executives to adopt incentive systems that reward reasonable risk taking but penalize excessive risk taking.

The first session, "Equity Volatility," was chaired by **Peter Layton**, a partner with long-time Center member Hull Trading. In the first presentation, **Robert Whaley** of Duke University discussed whether the Black-Scholes model could be improved by modeling

Peter Fisher discusses the role of regulators in financial crises.

volatility as a deterministic function of asset price and time to maturity. In a paper co-authored with Bernard Dumas of INSEAD and Jeff Fleming of Rice, he finds that such a modification does well in-sample, but performs poorly out-of-sample with regard to both valuation and hedging. **William Speth**, Director of Research at the Chicago Board Options Exchange, offered a commentary on volatility and the option market. He noted that both implied and realized volatility have remained at historically high levels the past three years. Speth attributed this pattern to the popularity of technology stocks, and their increased presence in indexes. Speth concluded by noting that the best way for the CBOE to cope with volatility is by remaining open, and he applauded the relaxation of collars and circuit breakers. **Jose Marques**, Director of Equity Research at Hull Equity Management, echoed the sentiment that volatility had risen dramatically, and commented that the frequency of 2% moves in the S&P 500 increased by a factor of more than 7 over the past year. More important, he stated that February and March of 1999 witnessed a startling increase in long-term implied volatility that might reflect the markets'

continued on page 3

FROM THE DIRECTOR

The Center has had another successful year in meeting its objectives of stimulating and supporting research in financial markets. Since the Center's founding 12 years ago, Center faculty have been in the middle of many important research issues, including the role of derivatives and the functioning of U.S. stock markets. Center faculty analyzed the triple witching phenomenon and examined the impact of futures trading on the stock market. Center faculty Bill Christie, Roger Huang and Hans Stoll provided important analyses of the Nasdaq Stock Market that led to major changes in that market's structure. We continue to work in these areas but are active as well in important new topics.

Hans R. Stoll

In this information age what could be more important than the functioning of the information process and the role of securities analysts. Center faculty are working in this area. Craig Lewis is developing measures to identify lead analysts and their impact on stock prices. Paul Chaney, Chris Hogan and Debra Jeter have examined the effect of accounting changes on analysts' forecasts of future earnings. Work of Center faculty suggests that income smoothing by corporations gives a better long-run picture of the firm's financial condition than would be the case without smoothing.

Other faculty are active in other important research areas. For example, Amar Gande and Ron Masulis are examining the capital raising process with particular attention to its international dimensions. Tarun Chordia is working in important areas of asset pricing and market microstructure. His paper, with Michael Brennan and Subra Subramanyam, on the cross section of expected stock returns was just awarded second place among all papers published in the Journal of Financial Economics in 1998. Cliff Ball's research provides insight into the stochastic process of important financial variables, which is useful in derivatives pricing and risk management. The impact of environmental costs on company stock prices has been examined by Mark Cohen.

The FMRC supports these research efforts by maintaining a research infrastructure, including data bases and programming support. Data base management and programming support are directed by Research Associate Christoph Schenzler. Among the developments in the last year, Christoph has designed and implemented web access to standard data bases maintained by the Center – Compustat, CRSP and TAQ. Other data bases will be added. At present, access to the web interface is limited to Owen School students and faculty, but the Center is ready to cooperate with others to make simplified web access available.

An important part of the Center's activities are the conferences that bring together Center members, faculty, regulators, and other experts. Last April's conference, described elsewhere in this newsletter, analyzed issues related to global volatility, which spiked just about a year ago. I want to alert you at this time to the Center's conference for next April 13-14, 2000. The topic will be Financial Markets, Information Technology and Electronic Commerce. We plan to bring together leaders from the world of finance and the worlds of electronic commerce and telecommunications to analyze the implications of new technology for financial markets and for financial regulation.

I am pleased to report that several new members have joined the Center for the coming year. They are CIBC, Merrill Lynch and the Nasdaq Stock Market. Our efforts to bring academic research to bear on important issues facing financial markets would not be possible without the support and advice of these and our other Center members.

While the Center has had a good year, it and the Owen School suffered a great loss with the death of Marty Geisel, dean of the Owen School from 1987 to 1999. Marty strengthened the Owen School in many ways and gave unqualified support to the Center. He was respected and loved as a no-nonsense dean totally dedicated to the School. His friends and colleagues will miss him. ■

GOALS OF THE CENTER

The Financial Markets Research Center at Vanderbilt University fosters scholarly research in financial markets, financial instruments, and financial institutions. Research of the Center may focus on participants in financial markets, such as brokers, exchanges, and financial intermediaries, on businesses needing financing, and on appropriate regulatory policy. The Center

1. Provides a mechanism for interaction between representatives of the financial community, researchers in financial markets, and the faculty at Vanderbilt.

2. Identifies critical research issues in financial markets and provides a focus for such research.

3. Supports research by faculty members and Ph.D. students at Vanderbilt by maintaining data bases and funding research projects.

4. Guides and disseminates research about financial markets.

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FUNDING

The Center is funded by its members and by outside research grants. Funds are used to maintain financial markets data bases and to support the Center's research projects. Members sit on the advisory board, participate in all activities of the Center, receive research reports, and give advice on the activities and research direction of the Center. Research grants for specific projects are sought from various research sponsors including foundations, government agencies, trade organizations, and corporations.

Current Center members are:

Aeltus Investment Management, Inc.
Canadian Imperial Bank of Commerce
Chicago Board Options Exchange
Chicago Mercantile Exchange
Eclipse Capital Management, Inc.
*Hull Trading Company
Merrill Lynch & Company, Inc.
The Nasdaq Stock Market, Inc.
*New York Stock Exchange, Inc.
*State Street Global Advisors
Thales Financial Group, Inc.
Timber Hill Inc.
Willis Corroon Group plc

*Indicates a lead member.

Coping With Global Volatility *(continued)*

expectation of a large correction. He concluded that the repercussions from the past year's volatility may still be working their way through financial markets.

The second session, "Fixed Income Volatility," was chaired by **Roger Huang**, Professor at the Owen School and Associate Director of the FMRC. **Cliff Ball**, Associate Professor at Owen, presented his paper, "The stochastic volatility of short term interest rates: Some international evidence," co-authored with Walter Torous at UCLA. Ball's work deals with the same issue raised by Whaley – how best to model volatility – but looks at stochastic rather than deterministic volatility models. He noted that volatility of interest rates is less persistent than stock return volatility and that reversion to the mean volatility was more rapid in fixed income markets. **Louis Scott**, Vice President of Fixed Income Markets at Morgan Stanley Dean Witter, provided the final commentary of the morning. Scott provided a practitioner's perspective on interest rate volatility, and suggested that studies of fixed income markets should focus on longer maturities since the one-month Treasuries are among the least active products.

Michael Croucy makes a point of the modeling of credit risk.

After enjoying lunch and informal discussion at the University Club, the afternoon resumed with a session on "Europe and the Euro," chaired by **David Brunner**, President of Paribas Corporation. Brunner highlighted numerous reasons why the skeptics of an eventual economic union were wrong, chief among which was the underestimation of political will. He also stressed the benefits to such a union, including the reduction in inflation, interest rates and deficits, and the elimination of foreign exchange risk. His remarks were followed by those of **Geert Rouwenhorst** from Yale who presented his paper, "European equity markets and EMU: Are the differences between countries slowly disappearing?" Rouwenhorst showed that, while both industry and country effects are important in describing differences in returns across markets, country effects continue to be dominant despite the apparent integration of Europe. He offered several explanations, including the home country bias, monetary shocks, and local economic shocks. **Brian Fabbri**, Chief Economist North America with Banque Paribas, provided the commentary. Fabbri provided an upbeat prognosis for the Euro, fueled by a predicted increase in GDP and lower inflation. European investors will no longer be constrained to investing in specific countries, and the Euro market is expected to constitute 35% of global bond indices.

David Brunner provides an overview of developments in Europe.

The final session of the day, "Emerging Markets," was chaired by **George Sofianos**, Managing Director of the New York Stock Exchange. **Laura Kodres** of the International Monetary Fund presented the first paper of the session, "A rational expectations model of financial contagion," which was co-authored with **Matt Pritsker** of the Federal Reserve Board. Kodras noted that financial shocks in one country can be transmitted to other markets for various reasons – because information shocks are correlated, because liquidity needs spill over, because of cross-market feedback trading, and because of cross-market portfolio balancing. Kodres and Pritzker emphasize the contagion that results as the hedging of risks in one country transmits those risks to another country. **Simean Djankov**, Financial Economist with the World Bank, presented the paper, "Corporate governance and risks in emerging markets: Evidence from East Asia," co-authored with Stijn Claessens, Principal Economist with the Financial Economics Group, and Larry Lang, visiting at the University of Chicago. Djankov noted that the failure of risk management systems was particularly evident in East Asia. The lack of transparency in the reporting systems resulted in high levels of information asymmetry. He cautioned that the specific governance structure wasn't as important as understanding who controlled the operations and suggested that the answer lay in "following the money!" The session concluded with two industry commentaries. The first was provided by **Dick McDonald**, Economist with the Chicago Mercantile Exchange, who described the chronology of the collapse of the Russian ruble, which was reflected in the ruble futures and options contracts traded on the CME. Futures and options trading of the ruble ceased when Russia defaulted on its debt on August 17, 1998. The second commentator was **Amy Falls**, Head Analyst for Emerging Markets at Morgan Stanley Dean Witter. She spoke on the relation between volatility and reductions in capital flows and argued that liquidity was a greater factor than solvency in explaining contagion.

Peter Layton chairs the first session.

The meeting was then adjourned for the day, and the group re-assembled for dinner and conversation at the Vanderbilt Plaza Hotel. On Friday morning the conference relocated from the University Club to the newly renovated Executive MBA classroom at the Owen School.

continued on page 4

Coping With Global Volatility *(continued)*

Clinton Lively comments on the role of models and of traders in risk management

The first session of the day, "Risk Management," was chaired by **Jeffrey Davis**, Chief Investment Officer, Fundamental Strategies, State Street Global Advisors. **Michel Crouhy**, Senior Vice President of the Canadian Imperial Bank of Commerce, began the session with his presentation, "Price risk: There is no 'holy grail', but don't bash VaR yet." Crouhy discussed how CIBC identifies, measures, and manages credit risk and explained the advantages/disadvantages of various modeling approaches. In particular, he noted the need to integrate the modeling of credit and market risk. **Paul Kupiec**, Principal Economist with Freddie Mac, presented the paper, "Risk capital and VaR." Kupiec places VaR in the context of capital structure and highlighted the importance of incorporating required interest payments on long-run debt. **Clinton Lively**, Managing Director of Global Risk Management for Bankers Trust, provided the final commentary of the session.

Lively underscored the importance of VaR as a disciplined framework for understanding risk management. He noted that model validation requires constant measurement of whether replicating portfolio's neutralize gains and losses through time, and that a traders skill can overcome model inadequacies.

The final session of the conference, "Regulatory Issues," chaired by **Hans Stoll**, Owen Professor and Director of the Financial Markets Research Center, offered a panel of experts the opportunity to express their views on the realities of regulation. **John Damgard**, President of the Futures Industry Association, commented that the futures industry is becoming a global enterprise, something that presents tremendous regulatory challenges. The competitive landscape is also shifting rapidly, as, among other things, Nasdaq is considering an electronic futures exchange, and the CME is contemplating becoming a for-profit entity. Damgard noted that OTC derivatives are best left outside the jurisdiction of the CFTC but expressed the concern of organized futures markets that must compete against less regulated markets. The second panelist, **Rick Kilcollin**, former President of the Chicago Mercantile Exchange, commented on the movement towards competition and deregulation, as evidenced by the convergence of the banking and securities firms and by the advent of technologies that change the way business is transacted. The increase in electronic communication networks (ECN) has led the SEC to question the meaning of an exchange. He noted that the advantage of avoiding the exchange designation is that the market center avoids excessive regulation but loses the ability to charge for its quotes. In the end, Kilcollin predicted even greater levels of competition, as evidenced by the NYSE's move to trade Nasdaq stocks through their own ECN. The final panelist was **Pat Parkinson**, Associate Director in the Division of Research and Statistics at the Federal Reserve Board. Parkinson directed his comments to the OTC market and outlined the pros and cons of regulating derivative dealers, as well as the OTC exchanges and clearing houses. He espoused the role of regulation in both deterring fraud and providing for protection against losses stemming from systematic risk, yet he emphasized the importance of freely functioning markets. ■

Pat Parkinson discusses the regulation of OTC derivatives.

Finance Student Activities

Owen School Finance Association

The goal of the Finance Association is to enhance Owen students' knowledge of current topics in finance as well as provide a link to the financial community. The Owen Finance Association hosted several speakers in the spring and fall of 1999 including venture capitalists, merger and acquisition specialists, fund managers, and corporate finance executives. Local venture capitalists Mike Devlin and Robert Crantz spoke to the Finance Association in the spring about their recent investment activity. Howard Schramm, Executive Vice President of Chase, kicked off the 1999/2000 school year with an overview of the global capital markets. Dr. Frank Mastrapaqua spent a lunch hour with the Finance Association explaining the investment strategies of his firm, Mastrapasqua and Associates. The Association continues to provide career counseling and internship advice for Owen's first year class. Currently, total membership exceeds one hundred students.

Max Adler Student Investment Fund

The primary purpose of the Max Adler Student Investment Club is the active management of the fund created by the generous gift of Mrs. Mimi Adler in memory of her late husband, the founder of Spencer Gifts. The Fund, which invests in small-cap stocks in several sectors including energy, technology, healthcare, retail, and financial services, has earned 25 percent in the first nine months of the year, in comparison to a return of approximately 5 percent for the Russell 2000. The Fund's performance has been driven by an overweighting in technology stocks such as PMC-Sierra Inc. (PMCS). The Fund strives to constantly balance its primary goals of maintaining solid returns on investment and creating a learning environment for students of all experience levels. Recently, the Fund completed a security selection database that allows members to systematically assess the financial and strategic aspects of prospective companies. The aim is to develop self discipline and conduct thorough research on under-followed companies. Student members give educational sessions during club meetings on such topics as "How to Research Stocks with the Latest Tools," "The Perils of Day-Trading," and "Does Technical Analysis Have a place in Investing?" For more information, see http://mba.vanderbilt.edu/maxadler/main/. ■

Research Workshops

Workshops conducted at the Owen School throughout the year provide a forum for the exchange and testing of new ideas in areas of current research. During 1998-99 the following researchers presented work on finance topics:

Seema Arora, *Vanderbilt University:* "Regulation and Competitiveness: Furthering the Debate" and "Does Pollution Prevention Improve Long-Run Stock Performance? A Matched Sample Approach"

Charles Cao, *Penn State University:* "Informed Trading in the Options Market"

Myong-Hun Chang, *Cleveland State University:* "Organizational Structure and Perpetual Innovation: A Computational Model of a Retail Chain"

Mark Defond, *University of Southern California:* "The Effect of Competitionon on CEO Turnover"

David Denis, *Purdue University:* "Internal Capital Markets, Growth Opportunities and Valuation of Corporate Diversification"

Wayne E. Ferson, *University of Washington:* "How Much Do Expected Stock Returns Move Over Time? Answers from the Options Markets"

William Goetzmann, *Yale University:* "Pairs Trading"

Joel Hasbrouck, *New York University:* "Liquidity in the Futures Pits: Inferring Market Dynamics from Incomplete Data"

Hans G. Heidle, *Vanderbilt University:* "Information Flow for Stocks within and across Industries, and Its Effect on Market Making"

Roger D. Huang, *Vanderbilt University:* "Trading Activity and Stock Price Volatility: Evidence from the London Stock Exchange"

Owen Lamont, *University of Chicago:* "Economic Tracking Portfolios"

Mike Lemmon, *Arizona State University:* "Corporate Policies Restricting Trading by Insiders"

Craig Lewis, *Vanderbilt University:* "The Long-Run Performance of Firms Adopting Compensation Plans Based on Economic Profits"

Craig MacKinlay, *Wharton School:* "Asset Pricing Models: Implications for Expected Returns and Portfolio Selection"

Robert Magee, *Northwestern University:* "State of Incorporation and the Impact of Mandated Accounting Changes: Implications for Contracting"

Steven Manaster, *CFTC:* "Sources of Market Making Profits: Man Does not Live by Spread Alone"

Ronald W. Masulis, *Vanderbilt University:* "Conditional Performance Following Securities Offerings: Is There a 'New Issues Puzzle'?"

Raghuram Rajan, *University of Chicago:* "The Cost of Diversity: The Diversification Discount and Inefficient Investment"

Laura Starks, *University of Texas at Austin:* "Voting with their Feet: Institutional Investors and CEO Turnover"

Kent Womack, *Dartmouth College:* "Why Do Firms Switch Underwriters?"

Bennet Zelner, *University of California at Berkeley:* "Political Institutions, Competition and Procurement Strategy in the US Electric Utility Industry" ■

Daane Invitational Tennis Tournament

For the first time in the history of the tournament, the host and organizer of the tournament, Dewey Daane, was not present to award the contents of the Daane Cup, having been injured by an errant tennis ball that clipped his recently operated-on nose. Instead, winner Joe Blackburn and runner-up John Damgard simply presented the contents of the cup to each other. ■

John Damgard and Joe Blackburn collect the contents of the Daane Cup.

Guest Speakers

An important aspect of the education of MBA students and the faculty at the Owen School is the opportunity to listen to and question senior executives from financial industries. Outside speakers are sponsored directly by the Financial Markets Research Center, the Owen Lecture Series, or the Finance Association, or are invited as an integral part of courses such as Monetary and Fiscal Policy and Financial Institutions. Guest speakers during the 1998-99 academic year were:

Patrick Arbor, Chairman, *Chicago Board of Trade*

Roger E. Brinner, Managing Director and Chief Economist, *The Parthenon Group - Boston* (former Group Vice President and Executive Research Director, *DRI/McGraw Hill Inc.*)

J. Alfred Broaddus, Jr., President, *Federal Reserve Bank of Richmond*

Bob Crants and Michael Devlin, Principals, *DC Investment*

Townes Duncan, President, *Solidus, LLC*

Peter R. Fisher, Executive Vice President, *Federal Reserve Bank of New York*

Edward M. Gramlich, Member, *Board of Governors of the Federal Reserve System*

James H. Graves, Partner, *J. C. Bradford & Co.* (Co-Head of *I Banking,*)

Jack Gwynn, President, *Federal Reserve Bank of Atlanta*

Jack Harrington, Vice President, *Nelson Capital*

William Hoagland, Majority Staff Director, *Senate Budget Committee*

David Kloeppel, Associate, *BT Wolfensohn*

Donald L. Kohn, Director of Monetary Affairs, *Board of Governors of the Federal Reserve System*

Joseph Langsam, Managing Director, *Morgan Stanley Dean Witter*

David A. Lereah, Chief Economist and Vice President, *Mortgage Bankers Association of America*

John Lipsky, Chief Economist and Director of Research, *The Chase Manhattan Bank*

Martin Mauro, Senior Economist, *Merrill Lynch*

James F. McCreary, Senior Vice President, *Wachovia*

Robert D. McTeer, Jr., President, *Federal Reserve Bank of Dallas*

William H. Poole, President, *Federal Reserve Bank of St. Louis*

Sean Rogers, Associate, *Salomon Smith Barney*

Dana Troxill, Financial Institutions Analyst, *Goldman Sachs*

Jack Tyrrell, Managing Partner, *Richland Ventures* ■

Current Activities of Center Faculty

CLIFFORD BALL, Associate Professor (finance and statistics). M.Sc. (Nottingham 1975), Ph.D., mathematics (New Mexico 1980).

Current research interests include equities, bonds, options, and futures contracts; empirical testing of financial models; stochastic processes and statistical applications to finance; the European monetary system; capital requirements, risk management and value-at-risk. Ball teaches finance and statistics and was a finalist for the James A. Webb Award for Excellence in Teaching. In the Fall of 1998, Ball received the award of Teacher of the Year in the International Executive MBA program run in conjunction with the University of Florida.

Professor Ball presented a paper, "True Spreads and Equilibrium Prices" (with Tarun Chordia), at a conference on mathematical finance at New York University in January 1999. Ball will present a paper on stochastic correlation at the Journal of Empirical Finance conference on risk management in Portugal this November. Ball's recent paper, "The Stochastic Volatility of Short-Term Interest Rates: Some International Evidence" (with Walter Torous), has been accepted for publication in the *Journal of Finance*.

AMY BONKOSKI, Assistant Professor (finance). B.S. finance, B.A economics (Penn State), Ph.D. (Pittsburgh 1997).

Research interests include corporate finance, governance, and investment banking.

Prior to beginning her doctoral studies, Professor Bonkoski worked for a personal financial planning firm. Her dissertation focused on the influence of ownership structure, compensation policies, and board of directors on the characteristics of firm-underwriter contracts in initial public offerings.

Bonkoski teaches the core finance class (Managerial Finance) and Securities and Portfolios.

PAUL CHANEY, Associate Professor (accounting). M.B.A., Ph.D. (Indiana 1983), C.P.A., C.M.A.

Research interests include the quality of earnings, earnings management, and the market for audit services.

Professor Chaney's paper, "The Effect of Reporting Restructuring Charges on Analysts' Forecast Revisions and Errors," with C. Hogan and D. Jeter, was published in the June issue of the *Journal of Accounting and Economics*. In September 1999, Professor Chaney is representing the Owen School at the American Accounting Association's tenth annual Corporate Accounting Policy Seminar.

TARUN CHORDIA, Assistant Professor (finance). M.B.A. (Tulane 1987), Ph.D. (UCLA 1993).

Research interests include financial institutions, asset pricing, and market microstructure. Chordia teaches securities and portfolios, fixed income markets, and financial institutions classes.

During the past year, Professor Chordia's paper, "Alternative Factor Specifications, Security Characteristics, and the Cross-Section of Expected Stock Returns" (with Michael Brennan and Avanidhar Subrahmanyam), was the second place winner, Fama-DFA prize for best paper published in the *Journal of Financial Economics* in areas of Capital Markets and Asset Pricing in 1998. His paper, "Trading Volume and Cross-Autocorrelations in Stock Returns" (with Bhaskaran Swaminathan), has been accepted for publication and is forthcoming in the *Journal of Finance*. His paper, "Commonality in Liquidity" (with Richard Roll and Avanidhar Subrahmanyam), has also been accepted for publication and is forthcoming in the *Journal of Financial Economics*. He has presented his paper, "True Spreads and Equilibrium Prices", at the Computational Finance Meetings, the NBER Market Microstructure Research Group, and the Western Finance Association meetings.

WILLIAM. G. CHRISTIE, Associate Professor (finance), M.B.A., Ph.D. (Chicago 1980, 1989).

Research interests include both market microstructure and corporate finance. His current research focuses on the relation between trading costs and tick sizes, the behavior of the Nasdaq market during trading halts, the relation between dividend announcements and the adoption of EVA compensation plans, and the long run performance of seasoned equity following rights offerings.

During the fall, Professor Christie's paper on the impact of the SEC order handling rules (with Mike Barclay, Jeff Harris, Gene Kandel and Paul Schultz) was presented at the December meetings of the National Bureau of Economic Research. He also wrote an op-ed piece for the San Jose Mercury News titled "Market is Competitive Despite having Few Dealers." His article, "Dealer markets under stress: The performance of Nasdaq market makers during the November 15, 1991 market break" (with Paul Schultz), was published in the June 1998 issue of the *Journal of Financial Services Research*. His paper, "Effects of market reform on the trading costs and depth of Nasdaq stocks" (with Barclay, Harris, Kandel and Schultz), was published as the lead article in the February 1999 issue of the *Journal of Finance*. His article, "The initiation and withdrawal of odd-eighth quotes among Nasdaq stocks: An empirical analysis," was published in the June 1999 issue of the *Journal of Financial Economics*.

Professor Christie served as a discussant at the Nasdaq-Notre Dame Microstructure conference held in April at Notre Dame, and the *Journal of Financial Intermediation* (JFI) Symposium on Law and Economics at Cornell in May. Christie was a plenary speaker at the Midwest Finance Association meetings held in Nashville in April for the session "An update on Nasdaq reforms." He also served on the program committees for the Western Finance Association, Financial Management Association and the JFI Symposium. He continues in his role as

Associate Editor for the *Review of Financial Studies, Financial Management,* and the *Journal of Financial Intermediation.* In September 1999, he was named associate dean of the Owen School.

Mark A. Cohen, Associate Professor (economics); Director of the Vanderbilt Center for Environmental Management Studies. M.A., Ph.D. (Carnegie-Mellon 1985).

Research interests include government regulation, law and economics, white-collar and corporate crime, and environmental management.

In January, Professor Cohen received a grant (with Roland Rust) from the National Institute of Justice to study the perceptions of the American public with regard to sentencing of criminals. The project will include an assessment of the public's willingness to pay for prisons and alternative forms of punishment. Cohen was appointed to the Tennessee Department of Environment and Conservation's Steering Committee on Environmental Justice, which will advise TDEC on how to incorporate environmental justice concerns into regulatory and enforcement programs. In July, Cohen was invited to serve on a panel on Environmental Justice at a conference sponsored by the University of Michigan Business School and World Resources Institute. He was also commissioned to present a paper on environmental enforcement at a workshop on environmental crime, sponsored by the National Institute of Justice and Environmental Protection Agency. In October 1999, he was an invited speaker at American Bar Association's Section on Natural Resources, Energy, and Environmental Law meetings in San Diego, CA. He also served on a panel at a workshop on the relationship between environmental performance and financial performance at the University of California, Long Beach, sponsored by the Environmental Protection Agency.

Cohen recently published a chapter entitled, "Monitoring and Enforcement of Environmental Policy," in the 1999/2000 *International Yearbook of Environmental and Resource Economics.* Since the first of the year, he has published two papers, "Why Do Corporations Become Criminals?" *Journal of Corporate Finance* (with Cindy Alexander), and "Regulating Corporate Criminal Sanctions: Federal Guidelines and the Sentencing of Public Firms," *Journal of Law and Economics* (with Cindy Alexander and Jennifer Arlen).

J. Dewey Daane, The Frank K. Houston Professor of Finance, Emeritus; Senior Advisor, Financial Markets Research Center. M.P.A., D.P.A. (Harvard 1949).

Research interests include monetary economics and international finance. He is currently engaged in writing a history of Equitable Securities Corporation, Nashville, Tennessee. During the spring semester, as part of his Seminar on Monetary and Fiscal Policy, Daane arranged for many of the guest speakers listed elsewhere in this newsletter.

Dr. Daane was re-elected to the board of directors of the National Futures Association. In February, March, and May, Daane attended NFA board of directors and finance committee meetings in Chicago, New York, and Washington, DC. In April, he participated in the annual Financial Markets Research Center conference held at Vanderbilt. In June, Daane participated in the Federal Reserve Bank of Boston's 42nd annual economic conference on Beyond Shocks: What Causes Business Cycles? held in Chatham, MA. In late August 1999, he participated in the Federal Reserve Bank of Kansas City's 23rd annual symposium on public policy issues, focusing this year on New Challenges for Monetary Policy.

Luke M. Froeb, Associate Professor (economics). Ph.D. (Wisconsin 1983).

Research interests include industrial organization, econometrics, mergers, and antitrust policy. Professor Froeb's experience as an antitrust "cop" has many business applications that he teaches to his introductory management classes. He is also the editor of Antitrust Policy at www.antitrust.org.

In January, at the annual meetings of the American Economics Association, Professor Froeb presented his work on mergers in auction markets. In April, he gave seminars on merger simulation to the Federal Reserve, the Office of the Comptroller of the Currency, both of whom are dealing with a wave of bank mergers, as well as the Federal Trade Commission, and the U.S. Department of Justice. Froeb continues work in computational economics in general, and merger simulation in particular. Professor Froeb and Professor Beavers, along with Gregory Werden at the Justice Department, are working on applying merger simulation methodology to the problem of computing damages in patent infringement cases.

In April, Froeb gave seminars on merger simulation to the Federal Reserve, the Office of the Comptroller of the Currency, the Federal Trade Commission, and the U.S. Department of Justice, all of whom must evaluate the current wave of bank mergers. Professor Froeb recently returned from the Stanford Institute of Theoretical Economics summer workshop on computational economics where he presented some of his work on simulating merger effects. He continues work in the field of computational economics, and is editing a volume on computational approaches to modeling oligopoly.

Amar Gande, Assistant Professor (finance). M.B.A. (IIMC 1988), Ph.D. (NYU 1997).

Research interests include international finance, corporate finance, and investment banking. Professor Gande teaches courses in International Financial Markets & Instruments, International Corporate Finance, and Corporate Value Management.

Professor Gande presented a paper "Bank Entry, Competition, and the Market for the Corporate Securities Underwriting" (co-authored with M. Puri and A. Saunders) at the Ninth Annual Conference of Financial Economics and Accounting in New York in October 1998 and at the Federal Reserve Bank of Chicago's annual conference on Bank Structure and Competition in Chicago in May 1999. This paper examines the competitive effects of recent commercial bank entry into the corporate debt underwriting market

continued on page 8

Faculty Activities *(continued)*

on the underwriter spreads, yield spreads and market concentration. In addition, Gande reviewed a book on international finance (Publisher: Prentice Hall) and discussed a paper "Japan's Corporate Returns on Value and Cost: A Comprehensive Look" at the annual meeting of the Western Finance Association in Santa Monica, California.

CHRIS E. HOGAN, Assistant Professor (accounting). M.B.A. (Ohio University 1990), Ph.D. (Ohio State University 1994), C.P.A.

Research interests include topics in auditing and financial accounting. Her current studies focus on auditor-client realignment, trends in auditor industry specialization, and the information content of restructuring charges.

Professor Hogan has had two articles published recently: "Industry Specialization by Auditors" (with Debra Jeter) in *Auditing: A Journal of Practice and Theory,* and "The Effect of Reporting Restructuring Charges on Analysts' Forecast Revisions and Errors" (with Paul Chaney and Debra Jeter) in *Journal of Accounting and Economics.* She presented a paper, "The Long-Run Performance of Firms Adopting Compensation Plans Based on Economic Profits" (with Craig Lewis), at The Ohio State University in April 1999.

ROGER D. HUANG, The Brownlee O. Currey Professor of Finance, M.A., Ph.D. (Pennsylvania 1980).

Research interests include financial market structure and international finance. Current research focuses on the relation between trading activity and trading volatility, stock splits, minimum price variation in stocks, American Depository Receipts, and information-based trading.

Professor Huang's paper, "FX Spreads and Dealer Competition Across the 24 Hour Trading Day" (with Ronald Masulis), was published by the *Review of Financial Studies.* Huang was interviewed twice on Channel 4 – once on September 29, 1998 during the 6:00 pm news and on October 2, 1998 during the 6:00 am show. On October 15, 1998, he gave a talk to the 7:29 Breakfast Group. In November of 1998, he presented his paper, "Tick Size, Bid-Ask Spreads and Market Structure," at the U.S. Securities and Exchange Commission and the University of Florida. In January 1999, Huang went to New York to attend the Allied Social Science Association Conference, where he chaired a session on emerging markets. From February 22-26, he was invited to be a visiting scholar at the London School of Economics where he presented his papers, "Information-Based Trading in Dealer and Auction Markets: An Analysis of Exchange Listings," "Tick Size, Bid-Ask Spreads and Market Structure," and "Informed Trading Activity and Stock Price Volatility: Evidence from the London Stock Exchange." While in London he visited Oxford University to give a seminar on Information-Based Trading in Dealer and Auction Markets: An Analysis of Exchange Listings. In July 1999, he went to Singapore to participate in the Eleventh Annual PACAP/FMA Finance Conference. While there he chaired a session on market microstructure and presented his paper, "Tick Size, Bid-Ask Spreads and Market Structure." Huang also helped to select papers for presentation as a member of the 1999 American Finance Association Program Committee, 1999 PACAP/FMA Review Committee, and 1999 European Finance Association Program Committee.

DEBRA C. JETER, Assistant Professor (accounting). M.B.A. (Murray State 1981), Ph.D. (Vanderbilt 1990).

Research interests include financial accounting and auditing, with specific interest in earnings management, components of earnings, the market for audit services, and audit opinions.

Professor Jeter is currently serving on the editorial board of *The Accounting Review.* In October 1998, she taught financial accounting in the Executive International MBA Program for the Vlerick School of Management in Ghent. She served on the Conference Paper Review Team for the first AAA Globalization Conference for 1998-99. Jeter presented her research in workshops at the University of Maryland, the University of Nebraska, and the University of Tennessee.

Jeter's paper, "Industry Specialization by Auditors" (with Chris Hogan), appeared as the lead article in the Spring 1999 issue of *Auditing: A Journal of Practice and Theory.* Another paper "The Effect of Reporting Restructuring Charges on Analysts' Forecast Revisions and Errors" (with Paul Chaney and Chris Hogan), is forthcoming in the June 1999 issue of the *Journal of Accounting and Economics.* A third paper by Jeter, "Cross-Sectional Estimation of Abnormal Accruals Using Quarterly and Annual Data: Effectiveness in Detecting Event-Specific Earning Management" (with L. Shivakumar), has been accepted for publication in the autumn 1999 issue of *Accounting and Business Research.* Jeter presented her paper, "The Effects of Accounting Choice on Analysts' Forecast Errors in Extractive Industries," at the American Accounting Association Western Region Meeting in April 1999. She is currently working on the revision of two textbooks.

CRAIG M. LEWIS, Associate Professor (finance). M.S., Ph.D. (Wisconsin 1986), C.P.A.

Research interests include corporate financial policy, accounting earnings informativeness, futures, and options. Current research topics include margin policy, convertible debt policy, and earnings forecasting and management. Lewis has published papers on the topics of the information content of implied volatilities, volatility forecasting, multiperiod corporate financial policy choices, the valuation of convertible debt, recapitalization, and earnings management. Lewis teaches corporate finance, advanced derivatives, and quantitative portfolio management. He is a past winner of the best teacher awards voted by the Executive MBA and the regular MBA programs and a 1999 recipient of the Dean's Award for Teaching Excellence.

Professor Lewis served as a discussant at the 1999 European Financial Management Association meetings in Barcelona, Spain, the 1999 meetings of the Western Finance Association (WFA) meetings held in Los Angeles in June, and the Financial Management Association meetings in Orlando, Florida this October. Lewis presented the paper, "Is Convertible Debt a Substitute for Straight Debt or Common Equity?" (with R. Rogalski and J. Seward), at the 1999 American Finance Association meetings held in New York City and the 1999 European Financial Management

meetings. He presented the paper, "Following the Leader: A Study of Individual Analysts Earnings Forecasts" (with Rick Cooper and Ted Day), at the University of Wisconsin at Madison, the Conference on Corporate Earnings in New York City, and the NBER Conference on Corporate Finance last August. The paper, "Industry Conditions, Growth Opportunities, and Market Reactions to Convertible Debt Financing Decisions" (with R. Rogalski and J. Seward), was presented at the 1999 Financial Management Association meetings. He was recently appointed as an Associate Editor of the *Journal of Corporate Finance and the Journal of Financial Research*, and he serves as referee for a number of academic journals.

Lewis's paper, "Is Convertible Debt a Substitute for Straight Debt or Common Equity" (with Rich Rogalski and James Seward), will appear as the lead article in the Autumn issue of *Financial Management*. The paper, "Global Investing: Slicing the World Into Meaningful Pieces" (with Rick Cooper), is scheduled to appear in *Advances in Financial Economics*. His paper, "Agency Problems, Information Asymmetries and Convertible Debt Security Design," was runner-up for the most significant paper prize at the *Journal of Financial Intermediation*.

RONALD W. MASULIS, The Frank K. Houston Professor of Finance. M.B.A., Ph.D. (Chicago 1978).

Research interests include investment banking, corporate finance, financial institutions, market microstructure, and international finance. His research on capital structure changes and the security issuance process is widely referenced. His current research activities center on the ADR market, dealer spreads in the foreign exchange market, long term stock price performance following common stock offerings, the impact of organizational structure on financial leverage and the relation of trading activity and stock price volatility on the London Stock Exchange, the impact of security issuance activity on stock liquidity, and returns to investing in conversions of mutual thrifts to stock ownership. Masulis teaches primarily in the corporate finance area. He offered a new course in Mergers & Acquisitions to second year MBA students that was a mixture of lectures, cases, and talks by investment bankers, and in the spring he taught another new course, Financial Engineering.

Professor Masulis presented his paper, "Intraday Market Response to Equity Offering Announcements: A NYSE/AMEX-NASDAQ Comparison" (with L. Shivakumar), at the finance workshops here and at Tulane University in November. His paper, "Conditional Performance following Security Offerings: Is There a 'New Issues Puzzle'?" (with Espen Eckbo and Oyvind Norli), was accepted for presentation at the American Finance Association annual meetings in New York in early January 1999. His paper, "FX Spreads and Dealer Competition Across the 24 Hour Trading Day" (with. Roger Huang), was published in the Spring 1999 issue of the *Review of Financial Studies*. In April, Masulis presented his paper, "Intraday Market Response to Equity Offering Announcements: A NYSE/AMEX – NASDAQ Comparison" (with L. Shivakumar), at the Nasdaq-Notre Dame Microstructure Conference. He chaired a session and discussed a paper at the Fifth Georgia Tech/Fortis International Finance Conference in May, and he chaired a session on Dividend Policy at the Western Finance Association annual meetings in Santa Monica, California in June. In the Fall, Masulis was asked to accept another term as associate editor of the *Journal of Financial and Quantitative Analysis*.

DAVID C. PARSLEY, Associate Professor (economics). A.M. (Indiana 1979), Ph.D. (California, Berkeley 1990).

Research interests are in the fields of international finance and macroeconomics. Current research is directed in two main areas: (1) purchasing power parity (PPP) and whether convergence toward purchasing power parity is impacted by the monetary regime, and (2) the role of uncertainty and expectational errors in explaining the bias in forward foreign exchange rates. Professor Parsley teaches courses in macroeconomics, international trade and commercial policy, international economics, and international business.

Professor Parsley has recently presented papers at the American Economics Association annual meetings, the Southern Economics Association annual meetings, the Board of Governors of the Federal Reserve System, and at the International Monetary Fund, where he held a position as visiting scholar. Parsley has also served as a paper reviewer for numerous professional academic journals over the past year.

HANS R. STOLL, The Anne Marie and Thomas B. Walker Professor of Finance, Director of the Financial Markets Research Center. M.B.A., Ph.D. (Chicago 1966).

Research interests include stock market structure, derivatives, and other aspects of financial markets.

Professor Stoll is President of the American Finance Association in 1999-2000. The members of the American Finance Association, the world's leading association of academic scholars in finance, elect a president annually. Stoll will preside over the next annual meeting to be held in Boston in January 2000. He was program chair for the last meeting of the AFA held in New York City in January 1999. In October, Stoll was elected president of the Economic Advisory Board of the NASD for 1999, and he chaired a meeting of the advisory board held in Washington, DC on March 12, 1999. In December, Stoll chaired a session at a conference jointly sponsored by the NYSE and the Bourse de Paris and held in Paris. In February, he lectured at the University of Krems, Austria, in a masters program in banking and finance. On March 17, he participated in a panel at the conference, "Regulation of Equity Markets," held at Baruch College in New York City. In April, Stoll organized the 12th annual conference of the Financial Markets Research Center on the topic, "Coping with Global Volatility." Stoll's recent publications include "Regulatory Capital of Financial Institutions: A Comparative Analysis" (with Clifford Ball) in *Financial Markets, Institutions and Instruments* and "Reconsidering the Affirmative Obligation of Market Makers" in the *Financial Analysts Journal*. Current working papers include, "Regulation of Financial Markets: A Focused Approach," "Exchange Rates and Firms' Liquidity: Evidence from ADRs" (with Roger Huang), "Tick Size, Bid-Ask Spread and Market Structure" (with Roger Huang). Stoll is editor of the two volume set, *Microstructure: The Organization of Trading and Short Term Price Behavior*, published by Edward Elgar in 1999. ■

Faculty Research Papers

Current working papers completed or revised since January 1, 1998 are listed below. Individual copies may be obtained by writing Pat Scott, Owen Graduate School of Management, Vanderbilt University, Nashville, TN 37203 or calling 615-322-3671 or email pat.scott@owen.vanderbilt.edu. There is a charge of $10.00 per paper for non-members of the Center. Academics may request up to five papers free of charge.

94-17 "Trading Volume and Cross-Autocorrelations in Stock Returns," by ***Tarun Chordia*** *and* ***Bhaskaran Swaminathan****. (forthcoming in Journal of Finance)*

This paper provides the first detailed examination of the relation between trading volume and cross-autocorrelation in daily and weekly stock returns. We find that returns on portfolios of high trading volume stocks lead returns on portfolios of low trading volume stocks, even after controlling for firm size. We show that these lead-lag effects arise because high volume stocks adjust to common factor information faster than low volume stocks. Non-synchronous trading or portfolio autocorrelations cannot (fully) explain these lead-lag cross-autocorrelations. Additional tests based on individual stock data from a sample of large, highly liquid firms indicate that, on average, the speed of adjustment to common information increases during earnings announcements. However, within the sample, there is no statistically reliable relationship between the change in speed of adjustment and abnormal trading volume during earnings announcement periods. Finally, cross-sectional regression tests that include other firm characteristics find that trading volume is a significant determinant of speed of adjustment even in a sample of large, highly liquid stocks. Overall, these results show that cross-sectional variations in trading volume are a significant source of the lead-lag cross-autocorrelations in stock returns.

95-01 "The Stochastic Volatility of Short Term Interest Rates: Some International Evidence," by ***Clifford A. Ball*** *and* ***Walter N. Torous****. (forthcoming in the Journal of Finance)*

This paper estimates a stochastic volatility model of short-term riskless interest rate dynamics. Estimated interest rate dynamics are broadly similar across a number of countries and reliable evidence of stochastic volatility is found throughout. In contrast to stock returns, interest rate volatility exhibits faster mean reverting behavior and innovations in interest rate volatility are negligibly correlated with innovations in interest rates. The less persistent behavior of interest rate volatility reflects the fact that interest rate dynamics are impacted by transient economic shocks like central bank announcements (Japan and UK) and other macroeconomic news (US).

95-30 "Do Market Makers Suffer from Splitting Headaches?" by ***Roger D. Huang*** *and* ***H. Martin Weingartner****. (July 26, 1999)*

Studies of transactions surrounding stock split ex-dates often conclude that splitting firms either experience a decline or an improvement in their stock's liquidity based on independent measures of trading costs and trading activity. In contrast, our evidence suggests that splits from outside into what is often deemed to be the "optimal" stock price range of $10.00 to $39.99 are "non-events" for market makers: the spread-setting behavior of the market does not change after a split. Our analysis accounts for the interdependencies between bid-ask spreads and market microstructure effects, and distinguishes between optimal and all other splitting firms.

96-20 "Margin Adequacy and Standards: An Analysis of the Crude Oil Futures Market," by Theodore E. Day and ***Craig M. Lewis****. (June 1999)*

This paper proposes two value-based standards for setting initial margin requirements on futures positions. Our approach is based on the fact that the distributions of the payoffs to futures traders and the potential losses to the futures clearinghouse can be described in terms of the payoffs to barrier options with appropriately defined strike prices and knockout boundaries. Based on this observation, we argue that initial margin requirements are adequate if the initial margin that must be posted is either (1) equal to the ex ante value of the payoffs to the futures position or (2) sufficient to reduce the value of the potential losses absorbed by the futures clearinghouse to zero. Using a numerical valuation approach that incorporates the stochastic volatility of the futures market, we examine the adequacy of margin requirements in the crude oil futures market. Our results suggest that on average the initial margin requirements set by the New York Mercantile Exchange have been in excess of the minimum margins required under our option-based standards for adequacy.

96-45 "The Information Content of Restructuring Charges: A Contextual Analysis," ***Chris E. Hogan*** *and* ***Debra C. Jeter****. (August 1998)*

Restructuring charges have appeared in financial statements with increasing frequency in recent years. Whether such charges provide information or simply allow managers to manipulate future earnings numbers has attracted the attention of a number of users of accounting information. The Press has also questioned these charges, raising such issues as whether growth trends in reported earnings are misleading for companies taking large charges and whether investors will "believe" future reported earnings or anticipate additional subsequent charges (WSJ 1/30/96; WSJ 7/6/98). Prior empirical studies addressing the stock market reaction to the announcement of asset write-offs and/or restructuring charges (Francis et al. 1996; Elliott and Hanna 1996; Kross et al. 1996; Brickley and VanDrunen 1990; Elliott and Shaw 1988) have provided mixed results; i.e. sometimes positive, sometimes negative. Our study suggests the importance of considering the nature of the restructuring charge and the context in which it is observed in interpreting the market's response. These findings support recent pronouncements of the FASB and the SEC requiring greater detail about such charges in the annual report.

97-01 "Industry Conditions, Growth Opportunities, and Market Reactions to Convertible Debt Financing Decisions," by ***Craig M. Lewis****, R. Rogalski, and J. Seward. (June 1999)*

We analyze the security design and valuation effects of 536 convertible debt security offers to assess how issuers balance the debt- and equity-related costs of external finance. Because convertible debt can be structured to mitigate several different corporate financing problems, an empirical examination of average valuation effects is likely to be uninformative. To assess these issuance motives separately, we develop a framework that characterizes how convertible debt should be designed to most effectively mitigate the debt- and equity-related costs of external finance. The primary empirical findings are that convertible debt is used to accomplish multiple purposes and that share price reactions depend on the security design. The results also clarify how operating and financial performance characteristics within industries influence the decision to issue convertible debt.

*97-02 "Mergers Among Asymmetric Bidders: A Logit Second-Price Auction Model," by **Luke Froeb, Steven Tschantz, and Philip Crooke.** (May 11, 1999)*

In this paper, we derive estimators of, and closed-form (non integral) expressions for, the distribution of bids in an extreme value, asymmetric, second-price, private-values auction. In equilibrium, prices (winning bids) and shares (winning probabilities) have a simple monotonic relationship – higher-value firms win more frequently and at better prices than lower-value firms. Since the extreme value distribution is closed under the maximum function, the value of the merged coalition also has an extreme value distribution and thus lies on the same price/share curve. Consequently, merger price effects can be computed as a movement along the price/share curve, from the average pre merger share to the post merger aggregate share. The parameter determining how much winning prices change is the standard deviation of the extreme value component. Merger efficiency claims can be benchmarked against the marginal cost reductions necessary to offset merger price effects.

*97-04 "Exchange Rates and Firms' Liqudity: Evidence from ADRs," by **Roger D. Huang and Hans R. Stoll.** (August 23, 1999)*

Exchange rate changes can, in principle, affect a firm's value by affecting the firm's earnings or its cost of funds. Existing studies using monthly data over long sample periods find little or no impact of changes in exchange rates on a firm's valuation. We examine a different potential path for exchange rate effects, namely, the effect of exchange rate variability on a stock's liquidity. Using transactions data, we examine the microstructure characteristics of United Kingdom and Mexican ADRs around two major exchange rate crises – the pound sterling withdrawal from the European Exchange Rate Mechanism in September 1992 and the Mexican devaluation of December 1994. We conclude that these events of exchange rate turbulence had little or no effect on the trading costs of ADRs in the United States. The results suggest that the impact of exchange rate volatility on market liquidity is not a conduit by which stock values are affected.

*97-08 "The Efficiency of Client-Auditor Alignments in the Presence or Absence of Direct Solicitation by Auditors," by **Paul K. Chaney, Debra C. Jeter, and Pamela Erickson Shaw.** (January 16, 1998)*

This paper provides a theoretical framework for examining the effects of direct uninvited solicitation activities on the efficiency of the alignment of clients and auditors, and for determining the extent to which available cost savings are passed to the client by the low-cost auditor. It also serves to provide additional insight into the interpretation and understanding of the empirical results provided in previous studies. Perhaps more importantly, it strengthens our knowledge of how competition in the market for professional services affects the accuracy of client expectations regarding the costs of switching to a new service provider, and ultimately professional fees and client decisions.

*97-11 "Mergers, Cartels, Set-Asides and Bidding Preferences in Asymmetric Oral Auctions," by **Lance Brannman and Luke M. Froeb.** (forthcoming in Review of Economics and Statistics)*

From Bidding data, we estimate the underlying value distribution for forest Service Timber. We find that bidder values decrease $2/mbf (thousand board feet) with each mile from the tract and that small firms (less than 500 employees) have values that are $72/mbf lower than large firms. The empirical value distribution is used to simulate various hypothetical scenarios designed to inform public policy. The most anticompetitive mergers raise price by less than three percent, and a four-percent decline in marginal costs through greater merger efficiencies is enough to offset a one-percent anticompetitive price increase. Eliminating the SBA Set-Aside program would raise timber revenues by 15 percent. A policy of granting bidding preferences to small and more distant bidders would raise revenue by about one-tenth of one percent.

*97-12 "The Effects of Assumed Demand Form on Simulated Post Merger Equilibria," by **Luke Froeb, Steven Tschantz, Philip Crooke, and Gregory Werden.** (forthcoming in Review of Industrial Organization)*

This paper investigates the properties of four demand systems that have been used to predict the effects of differentiated products mergers: the Almost Ideal Demand System (AIDS), logit, linear, and log-linear (constant elasticity). We report results of Monte Carlo experiments in which all four demand systems are calibrated to the same the same, randomly generated, premerger relative quantities and demand elasticities. Mergers are then simulated, i.e., postmerger equilibrium is computed assuming Bertrand competition. Although by construction the four demand systems share the same first-order characteristics, the choice among these demand systems significantly affects the magnitude of the predicted price effects of mergers. The predicted price increase is greatest with log-linear demand, and the smallest for linear. The median price effects for AIDS are significantly larger than for logit. The results highlight the important role played by the inherent higher-order properties of demand systems, i.e., their "curvature."

*97-21 "Intraday Market Response to Equity Offering Announcements: A NYSE/AMEX-NASDAQ Comparison," by **Ronald W. Masulis and L. Shivakumar.** (March 11, 1999)*

This study uses transactions data to compare the speed of price adjustments to seasoned equity offering announcements by NYSE/AMEX and NASDAQ stocks. We find that NASDAQ stocks react faster to equity offering announcements than NYSE/AMEX stocks over the first 15 minutes following the news release. The faster NASDAQ response is surprising given that NASDAQ stocks have on average a smaller offering size, lower equity capitalization and less frequent trading activity than NYSE/AMEX stocks. Further analysis suggests that the faster price reaction of NASDAQ stocks is due to several differences in market structure across the two types of markets. We find evidence that all the following conditions contribute to more rapid NASDAQ stock price adjustment: greater risk-taking by NASDAQ dealers, more rapid electronic order execution on NASDAQ, a more potent information trading threat (SOES bandits) on NASDAQ, stale limit orders on the NYSE/AMEX and a less efficient price discovery mechanism at the open of the NYSE/AMEX.

*97-28 "Mergers in Sealed vs. Oral Asymmetric Auctions," by **Luke Froeb, Steven Tschantz, and Philip Crooke.** (July 26, 1998)*

In this paper, we study mergers in sealed-bid asymmetric auctions. By asymmetric, we mean that bidders are drawing values out of extreme value distributions with different means. We develop an algorithm to find numerical solutions of the system of differential equations for the inverse bidding functions at equilibrium. The equilibrium inverse bidding functions are found to have a singularity, a critical value above which no bids are made, regardless of a bidder's value. It is shown that the effects of symmetry-decreasing mergers are smaller in sealed-bid auctions than in oral auctions, and vice-versa. Not only are the symmetry-decreasing merger effects smaller in sealed-bid auctions, but the marginal cost reduction necessary to offset a given price effect is also smaller. Despite the difference between sealed and oral auctions, sealed-bid merger

continued on page 12

effects are closely approximated by an Herfindahl-like formula derived from moment restrictions in oral auctions. The source of this curious similarity is not apparent.

97-30 "Official Exchange Rate Arrangements and Real Exchange Rate Behavior," by ***David C. Parsley and Helen A. Popper.*** *(August 1999)*

We study the behavior of real exchange rates under various official designations of exchange rate arrangements. Examining many currencies, we find important differences across the designated arrangements. Most notably, mean reversion is fastest when nominal exchange rates are officially pegged. We also find that adjustment is fastest when the magnitude of the real exchange rate is large; and, this nonlinear effect is also most striking among officially pegged currencies. Finally, we find that nominal exchange rates, rather than prices, do most of the adjusting.

98-02 "The Governance Structure of IPOs: Warrants As Underwriter Compensation," by ***Amy S. Bonkoski.*** *(February 1998)*

This study contributes to the understanding of how governance structure evolves and how the components of governance structure interact to form this structure. I focus on a sample of firms during the five years subsequent to the initial public offering (IPO) and distinguish between firms that have a particular monitor, a warrant-holding underwriter, and a control sample of firms that do not. I find significant differences in the levels of insider and institutional ownership, the proportion of independent directors on the board, and composition of executive compensation immediately following the IPO. I also document significant differences between these two types of firms in how the governance components evolve. During the time underwriters are required by regulation to hold warrants received at the time of the IPO, insiders have significantly greater ownership stakes and board representation. Once the underwriters are free to divest the warrant position, the firms become more like control firms: institutional ownership and the proportion of independent directors on the board increases. While the sensitivity of executive compensation to performance increases over the time period studied, the increase in this sensitivity is significantly greater for the firms that had issued warrants to its underwriter once this underwriter is no longer required to hold the warrants. Once the underwriter no longer has the incentive to monitor, the governance structure of the firms becomes more like that of control firms. The empirical findings suggest that warrants give an underwriter the incentive to actively monitor, and that this active monitoring is a substitute for other governance mechanisms.

98-07 "Seasoned Public Offerings: Resolution of the 'New Issues Puzzle'?" by ***B. Espen Eckbo, Ronald W. Masulis, and Øyvind Norli.*** *(June 1999)*

The "new issues puzzle" is that stocks of common stock issuers subsequently underperform non-issuers matched on size and book-to-market ratio. With 7,000+ seasoned equity and debt issues, we document that issuer underperformance reflects lower systematic risk exposure for issuing firms relative to the matches. As equity issuers lower leverage, their exposures to unexpected inflation and default risks decrease, thus decreasing their stocks' expected returns relative to matched firms. Also, equity issues significantly increase stock liquidity (turnover) which also lowers expected returns relative to non-issuers. Our conclusions are robust to issue characteristics, to "decontamination" of factor portfolios, and to model specifications.

98-08 "Is Convertible Debt a Substitute for Straight Debt or for Common Equity?" by ***Craig M. Lewis, Richard J. Rogalski, and James K. Seward.*** *(forthcoming in Financial Management)*

This paper examines the ability of the risk-shifting hypothesis and the backdoor equity hypothesis to explain firms' decisions to issue convertible debt. Using a security choice model, that incorporates pre-offer issue, issuer, and macroeconomic information, we document significant variation in the market reaction to new convertible debt issues depending on whether investors expect the motivation for issuance to be asset substitution or asymmetric information. Our results suggest that both motives explain the use and design of convertible debt. Some forms issue convertible debt instead of straight debt to mitigate the costs of bondholder/stockholder agency conflicts. Other issuers use convertible debt instead of common equity to reduce the costs of adverse selection. Thus, in contrast to standard securities like straight debt or common equity, which solve some financing problems but exacerbate others, hybrid securities such as convertible debt are seen as providing a more flexible funding choice that can solve conflicting financing problems.

98-09 "The Long-Run Performance of Firms That Issue Convertible Debt: An Empirical Analysis of Operating Characteristics, Analyst Forecasts, and Risk Effects," by ***Craig M. Lewis, Richard J. Rogalski, and James K. Seward.*** *(January 1999)*

Many firms issue hybrid securities such as convertible debt instead of standard securities like straight debt or common equity. Theoretical arguments suggest that firms face high debt- and equity-related external financing costs, and that convertible debt minimizes the sum of these financing costs for some issuers. Moreover, theory suggests that an appropriately designed convertible security provides efficient investment incentives. We show, however, that firms perform poorly following the issuance of convertible debt. Our empirical evidence suggests that the efficient investment decisions predicted by theory are not achieved by the actual design and issuance of convertible debt securities in practice. We suggest an alternative interpretation of convertible debt offers in which investors ration the participation of some issuers in the seasoned equity market.

98-10 "Following the Leader: A Study of Individual Analysts Earnings Forecasts," by ***Craig M. Lewis, Rick A. Cooper, and Theodore E. Day.*** *(March 1999)*

This paper develops and tests procedures for identifying lead analysts based on the timeliness of analyst forecast revisions, the trading levels associated with these revisions, and forecast accuracy. Our framework provides an objective assessment of analyst quality that differs from the standard approach that uses survey evidence to rate analysts. Using a sample of equity analysts, we find that lead analysts identified by our procedures have more price impact than follower analysts. Evidence also is presented that suggests analysts use recent stock price trends to help them modify forecast revisions, regardless of whether the analyst is a leader or a follower. Finally, we find that our ranking procedures based on timeliness, trading volume, and accuracy are consistent. That is, if analysts are selected as timeliness leaders, they also tend to be volume and accuracy leaders.

98-12 "Market Segmentation, Imperfect Information, and Closed-End Fund Discounts" by ***Tarun Chordia and Bhaskaran Swaminathan.*** *(May 1998)*

This paper makes the point that one does not have to assume that individual investors are irrational in order to generate discounts or premia on closed-end funds. The paper develops a noisy rational expectations model to examine the relative pricing of two securities with

identical cash flows. If there is a market segmentation and imperfect information, the security with less informed trading can trade at a price that, on average, is at a discount to that of the security with more informed trading. Allowing informed investors to trade in both markets results in two possible equilibria, (a) the single price equilibrium where both securities trade at identical prices, and (b) the discount equilibrium in which segmentation arises endogeneously and the security with less informed trading trades at a discount to that with more informed trading. Given that the discount equilibrium is the one that prevails empirically, there must exist other frictions which exacerbate market segmentation. These frictions, which prevent the informed investors, such as institutional investors, from arbitraging away the price differences may be related to factors such as fiduciary responsibilities, proxy regulations, litigation costs, free-rider problems, and the traditional reluctance on the part of institutions to be activists.

98-15 "Raising International Capital through ADRs: Evidence from Emerging Markets," by ***Amar Gande****. (December 1998)*

In the last five years, significant amounts of international capital were raised through ADRs by foreign firms, many of whom were first-time issuers from emerging markets. However, little is understood about the extent of underpricing of ADRs, its evolution over time and the stock-price reactions associated with the issuance of ADRs. In this paper, I model the information asymmetries about first-time ADR issuers both in the ADR market and in the home market of the issuers. Investors in the ADR market learn about the evolution of a country characteristic through sequential issues of ADRs from the same country. The commitment to adhere to the stringent SEC disclosure requirements for ADR issuers conveys favorable information about the issuing firm to investors in the home market. I derive testable implications for the underpricing of ADR issues, its dynamics over time and the announcement effects associated with first-time ADR issues on the underlying stock in the home market. My main empirical results are based on an extensive data set of ADRs listed on NYSE, AMEX and NASDAQ between 1991 and 1995. I find that first-time ADR issues from emerging markets are underpriced relative to the after-market traded price, and that later ADR issues from a country are less underpriced relative to earlier issues from the same country. Further, such ADR issues elicit a positive announcement effect on the underlying stock prices in the home market. Overall, the empirical results are consistent with the implications of the theoretical framework developed in this paper.

98-16 "Price Impact of Listings of New ADRs on Other ADRs: Evidence from Emerging Markets," by ***Amar Gande*** *(December 1998)*

The number of issuers accessing the ADR market has registered a sharp increase in the past few years. Although there is some evidence on the listing effects of new ADRs on the underlying home stock prices, little is known about the listing effects of new ADRs on other ADRs from the same country, both in the ADR market and in the home market and whether the findings are consistent with the negative post-listing performance of ADRs. My main empirical results are based on an extensive data set of ADRs listed on NYSE, AMEX and NASDAQ between 1991 and 1995. I find that listings of new ADRs from emerging markets are associated with a decline in prices of other existing ADRs from the same country. While the price decline occurs in both the US and home markets, the decline is higher in the US market. These results are consistent with a Diversification with Wealth Constraints hypothesis. That is, if the wealth allocation to ADRs from the same country were at a stable level and investors shift wealth from other existing ADRs to new ADRs from the same country to diversify their portfolios. Overall, the results are also consistent with the negative post-listing performance of ADRs documented in the literature.

98-18 "Stochastic Covariance Estimation: A Principal Components Approach," by ***Clifford A. Ball and Walter N. Torous****. (August 1998)*

Multivariate analysis of the stochastic volatility of foreign exchange rates poses a number of difficult econometric questions. This paper decomposes the multivariate time series of foreign exchange rates into principal components. The eigenvector decomposition of the covariance structure is modeled and the associated eigenvalues are allowed to vary stochastically. The methods are applied to a selection of foreign exchange rates against the US dollar using high frequency data.

98-22 "The Effects of Accounting Choice on Analysts' Forecast Errors in Extractive Industries," by ***Debra C. Jeter****. (August 1998)*

A long-standing controversy exists over whether the two acceptable methods of accounting for certain assets in extractive industries (primarily oil and gas) should continue to be allowed. This paper considers how the choice between full costing (FC) and successful efforts (SE) in extractive industries affects the degree of accuracy and bias in analysts' forecasts of earnings. When such characteristics as firm size, diversification, and leverage are controlled for, multivariate findings reveal that the choice of the FC method leads to smaller absolute errors and less upward bias in forecasts. By allowing full costing as an alternative, the standards enable a set of firms electing that method to increase the predictability of reported earnings through accounting choice, thereby accomplishing to a degree what other (generally larger) firms may accomplish through more frequent disclosures, diversification, or other means.

98-25 "Bank Crisis Communication for Y2K," by ***Robert W. Blanning and Frederick E. Talbott****. (December 1998)*

The year 2000 (Y2K) century date change may present problems for banks as two-digit date fields lead some computer systems to behave as if the year 2000 is the year 1900. Banks are preparing to meet this challenge by (1) modifying their computer systems to prevent problems from occurring and (2) preparing to respond to any problems if they should arise.

We are concerned not with the technical measures being taken to prevent and respond to problems, but rather with the ways in which banks are communicating about Y2K with their various stakeholders: customers, employees, government agencies, and the public. To this end we have (1) surveyed a sample of banks to determine what efforts they have undertaken and will undertake to ensure that their stakeholders are fully informed, (2) discussed these matters with a variety of bank customers in a focus group, and (3) prepared and used a simulated Y2K bank crisis communication case study with groups of MBA students, bankers, and other executives to obtain their views.

Our principal conclusion concerns the concept of trust. The bankers in our sample stated that their customers either (1) trust them to meet the Y2K challenge or (2) are indifferent to Y2K. In other words, those customers who care about Y2K trust their banks and bankers to solve any Y2K problems they may encounter. On the other hand, our research with customers suggests that (1) they do care about Y2K, although they feel that there is little they can do about it, and (2) they believe that in addressing Y2K the banks will act in their own best interests and possibly in the best interests of a

continued on page 14

select group of favored customers. They stressed the need for banks to (1) keep their customers and the public informed about their Y2k progress, (2) tell their customers and the public when things go wrong (i.e., don't hide anything from them), (3) teach their customers and the public how to best prepare for Y2K, and (4) tell their customers who to see and what to do to correct any problems that arise.

*99-01 "What Is the Spread without Rounding? A Monte Carlo Markov Chain Approach," by **Clifford A. Ball and Tarun Chordia**. (January 1999)*

This paper exploits Markov Chain Monte Carlo sampling methods to study the effects of the discrete tick size on quoted spreads and prices for a sample of large, New York Stock Exchange listed stocks. A model of discretization is developed where the market maker rounds the 'true' ask (bid) up (down) to the nearest tick. The effect of rounding is severe; parameter estimates are shown to be biased if this rounding is ignored. Quoted spreads are, at the very least, more than twice as large as spreads that would prevail without discretization, suggesting institutionally-mandated excess market maker profits. The adverse selection component of the spread is also far smaller than the quoted spread. The evidence suggests that reducing the tick size will result in significantly lower quoted spreads.

*99-03 "Information-Based Trading in Dealer and Auction Markets: An Analysis of Exchange Listings," by **Hans G. Heidle and Roger D. Huang**. (September 13, 1999)*

Auction markets are often touted as better trading mechanisms for unmasking informed traders than dealer markets. Our analysis of firms that transfer to an alternative exchange structure suggests that traders are more anonymous in a competing dealer market than in an auction environment. Our evidence also shows that when firms move to a new market structure, the changes in the risk of trading with an informed trader are associated with the changes in the bid-ask spread. Moreover, the changes in the bid-ask spread are more pronounced for firms with higher probability of transacting with an informed trader prior to the relocation. Our results provide evidence of differences in bid-ask spreads between dealer and auction markets that are induced by differences in market structure.

*99-04 "Commonality in Liquidity," by **Tarun Chordia, Richard Roll, and Avanidhar Subrahmanyam**. (forthcoming in Journal of Financial Economics)*

Traditionally and understandably, the microscope of market microstructure has focused on attributes of single assets. Little theoretical attention and virtually no empirical work has been devoted to common determinants of liquidity nor to their empirical manifestation, correlated movements in liquidity. But a wider-angle lens exposes an imposing image of commonality. Quoted spreads, quoted depth, and effective spreads co-move with market- and industry-wide liquidity. After controlling for well-known individual liquidity determinants such as volatility, volume, and price, common influences remain significant and material. Recognizing the existence of commonality is a key to uncovering some suggestive evidence that inventory risks and asymmetric information both affect intertemporal changes in liquidity.

*99-05 "Tick Size, Bid-Ask Spreads and Market Structure," by **Roger D. Huang and Hans R. Stoll**. (August 20, 1999)*

We propose a link between market structure and the resulting market characteristics – tick size, bid-ask spreads, quote clustering, and market depth. We analyze transactions data of stocks traded on the London Stock Exchange, a dealer market, and also traded as ADRs on the New York Stock Exchange, an auction market. We conclude that market characteristics are endogenous to the market structure. The London dealer market does not have a mandated tick size, and it exhibits higher spreads, higher quote clustering, and higher market depth than the NYSE auction market. Clustering of trade prices is similar in London and New York.

*99-08 "The Long-Run Performance of Firms Adopting Compensation Plans Based on Economic Profits," by **Chris Hogan and Craig Lewis**. (April 1999)*

Proponents of compensation plans based on economic profits argue that these plans control for deficiencies in stock-based or earnings-based bonus plans, resulting in a better alignment of managers' and shareholders' interests. The purpose of this study is to examine whether compensation plans based on economic profits do in fact produce better investment decisions. Using a sample of 52 firms adopting economic profit plans between 1986 and 1994, we document significant improvements in operating performance subsequent to adoption. However, a sample of non-adopting matched firms also shows significant improvements in operating performance for the same time period. There is no significant difference in the stock market performance of the adopters and non-adopters either. We conclude that, rather tha n realigning investment incentives to overcome agency costs of managerial discretion, managers appear to opportunistically time the adoption of economic profit plans to coincide with industry-wide improvements in operating performance.

*99-09 "Informed Trading Activity and Stock Price Volatility: Evidence from the London Stock Exchange," by **Roger D. Huang and Ronald W. Masulis**. (April 26, 1999)*

This study examines the relation between stock price volatility and trading activity on the London Stock Exchange. The analysis is based on transactions data for individual stocks comprising the FTSE 100 index. Similar to the daily volatility evidence documented for Nasdaq stocks, when daytime stock price volatility in the London market is regressed against both the number of trades and average trade size, only the number of trades is statistically significant. However, when hourly trades are separated into size categories, both the number of small trades and their average size significantly impact price volatility. When we further split the small trade category into relatively smaller and larger trades, we find that only for larger trades, close to the maximum guaranteed depth of existing quotes, are there significant positive impacts on stock price volatility from both the trade frequency and average trade size. For relatively smaller trades, neither trade activity variable is significant. Our evidence shows that while London stocks appear to have a price-volatility relation similar to that found for Nasdaq, the London results are also consistent with strategic models of informed trading, which subject uninformed traders and dealers to costly adverse selection effects.

*99-10 "Cross-Sectional Estimation of Abnormal Accruals Using Quarterly and Annual Data: Effectiveness in Detecting Event-Specific Earnings Management," by **Debra C. Jeter and L. Shivakumar**. (forthcoming in Accounting and Business Research)*

This paper addresses certain methodological issues that arise in estimating abnormal (or discretionary) accruals for detection of event-specific earnings management. Unlike prior studies (e.g., Dechow, Sloan, and Sweeney, 1995; Guay, Kothari, and Watts, 1996) that rely primarily on time-series models, we focus on the

specification of cross-sectional models of expected accruals using quarterly as well as annual data. Perhaps more importantly, we present a variation of the Jones model that is shown to be well specified for all cash flow levels. We show that the cross-sectional Jones model yields systematically positive (negative) estimates of abnormal accruals for firms whose cash flows are below (above) their industry median. Using mean squared prediction errors as well as simulation analysis, we show that our model is more powerful than the cross-sectional Jones model in detecting earnings management. In addition, we examine differences in the power of current accrual models in detecting earnings management across audited and unaudited quarters.

*99-11 "Second-Price Auctions with Power-Related Distributions: Predicting Merger Effects," by **Luke Froeb**, Steven Tschantz, and Phillip Crooke. (February 15, 1999)*

By constraining bidders to draw values from a class of power-related value distrubutions, we are able to derive closed-form expressions for the distribution of winning bids in a second-price, private-values asymmetric auction. We use the expressions to construct estimators of the bidders' value distributions and to constsruct predictors of merger effects. This paper generalizes the closed-form expressions from the logit auction model to the broader class of power-related distributions considered by Waehrer and Perry (1997). We find that predicted merger effects are dependent on the curvature of the relationship between winning bids and winning probabilities, which is related to the post merger change in variance of the merged firms' value distribution.

*99-12 "True Spreads and Equilibrium Prices," by **Clifford Ball and Tarun Chordia**. (June 10, 1999)*

Stocks and other financial assets are traded at prices that lie on a fixed grid determined by the minimum tick size permitted in the market. Consequently, observed prices and quoted spreads do not correspond to the equilibrium prices and true spreads that would exist in a market with no minimum tick size. This paper models the equilibrium movements of two latent variables: equilibrium price and spread by a bivariate autoregressive process with correlated errors. We estimate the parameters governing their movements using transaction prices and information on quoted bid-ask spreads. Due to the econometric complexities created by the rounding to a discrete grid we use Monte Carlo Markov Chain methods to implement the parameter estimation. The empirical analysis is performed on a selection of large, heavily-traded U.S. stocks. The results indicate that most of the quoted spread is attributable to the rounding of prices and the adverse selection component is small.

*99-14 "Economic Analysis of Lost Profits from Patent Infringement With and Without Noninfringing Substitutes," by Gregory J. Werden, **Luke M. Froeb**, and Lucian Wayne Beavers. (forthcoming in American Intellectual Property Law Association Quarterly Journal)*

*99-15 "Simulating Merger Effects Among Capacity-Constrained Firms," by **Luke Froeb**, Steven Tschantz, and Philip Crooke. (July 16, 1999)*

In this paper, we simulate the effects of mergers in an industry of firms facing capacity constraints. In equilibrium, each firm prices where marginal revenue equals marginal cost or, if the constraint is binding, where expected demand equals capacity. We develop an algorithm to compute Nash equilibrium. Capacity constraints on the merging firms attenuate merger effects, and capacity constraints on the non-merging firms amplify merger effects. In a retail industry where products are differentiated by location, we find that the former effect is bigger than the latter.

*99-17 "Regulation of Financial Markets: A Focused Approach," by **Hans R. Stoll**. (August 3, 1999)*

A new approach and a new regulatory mind-set are needed. Under our existing trajectory, regulation will become inefficient, unwieldy, and too costly as it attempts to deal with an ever more complex financial system. Regulators ought to focus on what needs to be regulated not simply on expanding regulatory oversight. Implicit in this mind-set is the idea that not everything must be regulated. A focused approach to regulation would separate what is regulated from what is not. Examples of how regulation can be more narrowly focused are given for banking, for securities markets, and for futures markets.

*99-19 "Evidence Production in Adversarial vs. Inquisitorial Regimes," by **Luke M. Froeb** and Bruce H. Kobayashi. (August 16, 1999)*

In the article, we model the tradeoff between adversarial and inquisitorial regimes of judicial decision-making. The advantage of the adversarial regime is the superior information of the parties while the advantage of an idealized inquisitorial regime is its neutrality. We model the tradeoff by characterizing the properties of costly estimators used by each regime. The adversarial regime uses an "extremal" estimator that is based on the difference between the most favorable pieces of evidence produced by each party. The inquisitorial regime uses the sample mean. We find that neither regime dominates the other.

*99-20 "Border, Border, Wide and Far, How We Wonder What You Are," by **David C. Parsley** and Shang-Jin Wei. (July 1999)*

This paper exploits a three-dimensional panel data set of prices on 27 traded goods, over 88 quarters, across 96 cities in the U.S. and Japan. We present evidence that the distribution of intra-national real exchange rates is substantially less volatile, and on average closer to zero, than the comparable distribution for international relative prices. We also show that an equally-weighted average of good-level real exchange rates tracks the nominal exchange rate well, suggesting strong evidence of sticky prices.

We turn next to economic explanations for the dynamics of this so-called "Border" effect. Focusing on dispersion in prices between city pairs, we confirm previous findings that crossing national borders adds significantly to price dispersion. Using our point estimates crossing the U.S.-Japan "Border" is equivalent to adding between 2.5 and 13 million miles to the cross-country volatility of relative prices. We make a direct and explicit inference on the influence of shipping costs, distance, exchange rate and relative wage variability on the "Border" effect. In our calculations, the "Border" effect disappears after controlling for these additional variables.

99-22 "Global Investing, Slicing the World Into Meaningful Pieces," by Rick A. Cooper and Craig M. Lewis. (forthcoming in Advances in Financial Economics)

This article shows that the active return distributions based on industry modeling are more stable than those based on country modeling. The superior stability of the active returns available to industry modeling comes from the fact that skewness in both the market capitalization and the number of names is much less pronounced across industries than across countries. We then examine the active return distribution in terms of a country vs. industry attribution analysis. We find that in recent years industry has explained more of the variation in stock active returns than has country. In addition, explanatory regressions of quarterly active returns against common factors seem to be as strong by industry as country over the entire sample, and stronger by industry when sub-samples are considered. ■

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