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FINANCIAL MARKETS

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FINANCIAL MARKETS RESEARCH CENTER • 1998

Conference on

Financial Markets and the Corporation

The 1998 Financial Markets Research Center conference held April 2nd and 3rd focused on "Financial Markets and the Corporation" and examined how corporations interact with financial markets in the capital-raising process. The conference honored H. Martin Weingartner on his retirement from the Owen School, and the theme of the conference recognized his long-standing research and teaching interests in corporate finance. Weingartner joined the Owen faculty in 1976 as the first holder of the Brownlee O. Currey Chair of Finance. He was instrumental in shaping the direction of the finance group and the Owen School.

The conference was sponsored by the Financial Markets Research Center, with the assistance of a generous grant from the New York Stock Exchange, one of the founding members of the Center. The panel discussion and related papers appear in the Spring 1998 volume of the *Journal of Applied Corporate Finance.*

The first session of the conference, "Global Equity Financing," was chaired by Professor **Marcus Alexis** from Northwestern University. In the first presentation, the Owen tag-team of **Amar Gande** and **Ronald Masulis** discussed the findings of their working paper, "Global Equity Fund Raising." Their paper studied recent trends among non-U.S. firms who raise equity capital outside of their home market. The study noted that the motives for the foreign sales of equity include the search for a lower cost of capital, rapid access to large quantities of capital, and more liquid secondary markets. The pair identified Amsterdam, London, Luxembourg, Tokyo, and the U.S. as the major financial centers where foreign equity was issued, with both public and private offerings increasing dramatically in both number and dollar volume during the past few years. The next speaker, **Fang Fang**, spoke on the

Marcus Alexis chairing the first session.

issue of corporate financing and the Asian currency crisis. Fang is vice president of Beijing Enterprises Holdings and holds an M.B.A. from the Owen School. He noted the peculiar problems that arise when Price/Earnings multiples are at historical highs. In a distorted capital market, firms might find issuing equity in foreign markets an attractive alternative in managing their capital structures. The P/E's reflect great optimism for the future of China, but they make investment recommendations particularly difficult. The final speaker of the session, **George Sofianos**, managing director of the New York Stock Exchange, commented on the challenges faced by the NYSE in an increasingly global economy. The NYSE currently adds approximately 60 foreign listings per year, mostly in the form of ADR's. While the U.S. captures approximately 30 percent of the value of trading in foreign companies, the distribution of this trading volume across time zones is quite unbalanced. One of the biggest challenges facing the NYSE is to provide U.S. investors with an opportunity to trade Asian stocks during the hours that the U.S. market is

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FROM THE DIRECTOR

The Center's day-to-day objectives of supporting research in financial markets always receive a pleasant jolt from the annual conference and accompanying meeting of the Center's advisory board. This year's conference on "Financial Markets and the Corporation," described in detail elsewhere in this newsletter, produced some lively interaction and stimulating discussion. As usual, conference attendees included academics, industry representatives and regulators. The conference roundtable on the Capital Structure Puzzle, chaired by Joel Stern, is published in the Spring 1998 issue of the *Journal of Applied Corporate Finance* along with three other papers from the conference. Thanks are due to Don Chew, editor of the journal, for his help in planning the sessions and particularly for his speedy and insightful editorial work. We also thank the New York Stock Exchange for a special grant in support of the conference. Five selected papers from last year's conference on "Ten Years Since the Crash," appear in the June 1998 issue of the *Journal of Financial Services Research.*

Hans R. Stoll

Faculty affiliated with the Center, drawn from the fields of accounting, economics, and finance, number eighteen. The work of individual faculty members is described in detail elsewhere in this newsletter. Overall, the research output is substantial and covers important issues in finance and related fields. Publications in the last year include work on earnings smoothing by corporations, on the components of the bid-ask spread, on the effect of Nasdaq reforms, on the determinants of expected stock returns, on currency market bid-ask spreads, on the measurement of the effects of mergers, and on many other topics. During the past year, Center faculty published in *The Journal of Finance, The Review of Financial Studies, The Journal of Financial Economics, The Journal of Corporate Finance, The Journal of Mathematical Finance, The Financial Analysts Journal, The Journal of Industrial Economics* and a variety of other journals.

A major transition this year was the retirement of H. Martin Weingartner, who founded the finance group and who has been an influential member of the Owen faculty. Upon Marty's transition to professor emeritus, Roger Huang, associate director of the Center, assumed the Brownlee O. Curry Chair in Finance previously held by Marty. Marty was honored at the conference and the conference dinner. In another noteworthy event, Dewey Daane, senior advisor to the Center, and host of the Daane Invitational Tennis tournament, celebrated his 80th birthday. Dewey continues to be active in affairs of the center and the school and continues to teach his Seminar on Monetary and Fiscal Policy. We expect to benefit from the sage advice of both Marty and Dewey for many years to come. ■

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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Senior Advisor

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.
*Chicago Board Options Exchange
Chicago Mercantile Exchange
Eclipse Capital Management, Inc.
Hull Trading Company
Morgan Stanley Dean Witter & Co.
*New York Stock Exchange, Inc.
Pacific Exchange
*Refco Group, Ltd.
*State Street Global Advisors
Thales Financial Group, Inc.
Timber Hill Inc.
Van Hedge Fund Advisors Intl., Inc.
Willis Corroon Group plc

*Indicates a lead member.

Financial Markets and the Corporation *(continued)*

closed. Sofianos offered the expansion of trading hours and the trading of home ordinary shares as potential solutions.

The second session, which resumed after the morning coffee break, was chaired by **Benjamin Wolkowitz**, managing director at Morgan Stanley and Company. **Erik Sirri**, chief economist at the Securities and Exchange Commission, presented a regulator's perspective of capital raising in his presentation, "Express Lane or Tollbooth in the Desert? The SEC's Framework for Security Regulation," a joint paper with Jennifer Bethel. Sirri argued that the SEC has been easing capital-raising regulations to help lower the issuance costs for corporations. He noted, for example, that Incorporation by Reference (IBR) permits prior SEC filings to serve as a Registration statement, and that universal shelf offerings release the firm from pre-committing to a particular mix of debt or equity securities. He points out that Rule 144A enhances the ability of Qualified Informed Buyers (QIB's) to trade privately-held securities among themselves. In the final presentation of the morning, **William Brodsky**, chairman of the Chicago Board Options Exchange, discussed "Corporate Uses of Options." He provided an overview of the use of options in corporate risk management and security issuance. Corporations sell put options as part of a share repurchase plan. The advantage is that the firm realizes the cash inflow immediately, which can help to defray the costs of stock repurchase programs. Pension funds also make use of index and equity options in their risk management programs. Thus, options provide a natural marriage between financial markets and the corporation.

Bill Brodsky discussing corporate uses of options.

The assemblage then adjourned for lunch. There they basked in the glowing rhetoric of **Joel Stern**, managing partner of Stern Stewart & Co., who extolled the virtues of Economic Value Added (EVA®) as a measure of corporate performance and a tool to motivate managers.

Panel on Corporate Financial Policy — (left to right) John McConnell, Alice Peterson, Dennis Soter, and Stewart Myers.

The first session after lunch, titled "Financial Instruments and the Corporation," was chaired by **William Brodsky**. In the first presentation, **Craig Lewis**, a member of the finance faculty at Owen, discussed "The Whys and Wherefores of Convertible Debt Security Design," joint work with Richard Rogalski and Jim Seward of Dartmouth University. Lewis highlighted many factors implicit in the design of a convertible, including coupon rate, the maturity date, and the conversion price. He also noted that convertible debt can be used as a vehicle to address the agency conflicts between bondholders and stockholders (where stockholders attempt to expropriate wealth from bondholders once the debt is issued) and as a means of backdoor equity financing when information asymmetries are acute. Lewis concluded that agency conflicts and information asymmetries both play important roles in the decision to issue convertibles. In the second presentation, **John McConnell** of Purdue University presented joint work with Ken Carow and Gayle Erwin titled "Financing publicly traded U.S. corporations in public and private security markets, 1970-1977: How, how much, when, where and with what." John noted that innovation is more the norm than the exception in the design of corporate securities and that the pace of innovation has continued unabated over the past few decades. These innovations include new securities, such as equity indexed bonds, dividend enhanced convertible bonds, and convertible exchangeable notes. These innovations are tied to modifications in features such as periodic payment, country of issuance, repayment schedules, and maturity dates.

Joel Stern preparing to comment on capital structure.

The final session on Thursday featured a panel discussion, chaired by **Joel Stern** of Stern Stewart & Co., titled "Panel on Corporate Financial Policy." The panelists included **John McConnell** of Purdue University, **Stewart Myers** from the Massachusetts Institute of Technology, **Alice Peterson**, treasurer of Sears, Roebuck and Co. (and an Owen alum), and **Dennis Soter**, partner with Stern Stewart & Co. The panelists debated the importance of debt in a corporation's capital structure and whether managers were making optimal use of the tax shield afforded by debt. The one point of agreement among the panelists was forwarded by Professor Myers, who noted that an "optimal debt policy" does not appear to be as important as ensuring that the incentives of managers and employees are aligned with those of the shareholders. The overall view from the discussion could be summarized by proposing that managers should worry first about the productivity of

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Marty Weingartner Honored

Marty Weingartner receiving a new sailboat from Hans Stoll.

H. Martin Weingartner, retiring from his position as the Brownlee O. Currey Professor of Finance after 20 years of service, was honored at various points during the conference on Financial Markets and the Corporation and was presented with an engraved crystal sailboat at the conference dinner on April 2nd. Marty came to the Owen School in 1977 after teaching at Rochester, MIT, and Chicago. He brought with him the rich academic tradition of those schools and a personal insistence on quality and rigor in all aspects of research and teaching. He played an important role in the life of the Owen School by his leadership in matters of faculty hiring and curriculum. Many would call him the academic conscience of the school. His interests spanned a broad range of subjects, including corporate finance, corporate treasury, real estate, entrepreneurship, and negotiation, and he developed many new courses in these areas. ■

Daane Invitational Tennis Tournament

(left to right) Guy Stevens, Dewey Daane, and Peter Veruki

Dewey Daane, the indefatigable host of the round-robin doubles tournament, presented the contents of the Daane cup to winner Peter Veruki and runner up Guy Stevens. Veruki proved that one can still play tennis after the knees have given out (so long as it is doubles). Stevens, who had to play a tie-breaker against Lou Scott to capture second place, proved that steadiness will win out. ■

Financial Markets and the Corporation *(continued)*

the assets, then address the firms financial structure to create value throughout the organization, and only then devote energy to issues such as an optimal debt structure.

The Friday sessions moved from the University Club to the Owen School. The first session titled "EVA®, Earnings and Stock Values" was chaired by **Rick Cooper**, who earned his Ph.D. from the Owen School and is now vice president of State Street Global Advisors. Rick's easy-going demeanor was ideal for the conflicting views offered during this session, which clashed over the relation between the adoption of EVA® and stock values. The first paper, co-authored by **Gary Biddle** and **Robert Bowen** from the University of Washington and James Wallace of the University of California, Irvine, was titled "Does EVA® help explain stock values?" The authors compare the significance of EVA® and accounting earnings in explaining cross-sectional differences in stock returns. Their evidence suggests that EVA® may be effective as an incentive to help align the interests of managers and shareholders, but there is no evidence that it contains incremental information over accounting earnings. The task of defending EVA® fell to **Stephen O'Byrne**, senior vice president of Stern Stewart & Co. O'Byrne emphasized that EVA® helped to create value through the re-alignment of incentives that place greater emphasis on variable pay tied to value creation and the linkage of current bonuses to sustained future performance. In the end, the participants agreed on the benefits of the incentives created by EVA®, but agreed to disagree on whether EVA® was a superior measure of corporate value changes relative to standard accounting earnings measures.

Jim Lodas, a principal with Center member Hull Trading Company, chaired the final session of the conference titled "Recent Developments in Financial Markets." The first speaker was **Warren Langley**, president of the Pacific Exchange. Langley indicated that, from the perspective of the Pacific Exchange, the most important changes in the market have included (1) the presence and expansion of Optimark, which appears best suited to integrate large and small orders electronically; (2) the proposed merger of Nasdaq and the American Stock Exchange, which could have competitive implications for the options business; (3) the rise of the Internet and the potential for significant order flow to be diverted away from the exchanges; and (4) the recent SEC concept release dealing with the regulation of exchanges and electronic communication systems. The final speaker of the session and the conference was **Richard McDonald**, vice president of research at the Chicago Mercantile Exchange. McDonald commented on recent contract innovations including a turn-of-the-year interest rate contract, a mini S&P contract, emerging markets currency contracts, and a credit-derivatives contract based on the level of quarterly bankruptcy filings. In addition, he noted that trading technology is expanding traders' access to overnight trading and to overseas markets. ■

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 1997-98 the following researchers presented work on finance topics:

Jeff Abarbanell, *University of North Carolina-Chapel Hill*: "Does the U.S. Stock Market Underprice Long-Term Abnormal Earnings?"

Franklin Allen, *University of Pennsylvania*: "Optimal Financial Crises"

Torben Anderson, *Northwestern University*: "Stochastic Volatility and Mean Drift in the Short Rate Diffusion: Sources of Steepness, Level and Curvature in the Yield Curve"

Gurdip Bakshi, *University of Maryland*: "Can Markovian Models Explain Option Pricing Dynamics? Lessons from High-Frequency Option Data"

Amy Bonkiski, *Vanderbilt University*: "Governance Structure of IPO's: Warrants as Underwriter Compensation"

Wolfgang Buehler, *University of Mannheim*: "An Empirical Comparison of Forward and Spot Rate Models for Valuing Interest Rate Options"

J.S. Butler, *Vanderbilt University*: "Value-at-Risk Assessment Using Kernel Density Estimators"

Robert Engel, *University of California-San Diego*: "Forecasting Market Liquidity with Transactions Data Using the ACD Model"

Amar Gande, *Vanderbilt University*: "Raising International Capital Through ADR's: Evidence from Emerging Markets"

Stuart Gillan, *U.S. Securities and Exchange Commission*: "Corporate Governance Proposals and Shareholder Activism: The Role of Institutional Investors"

Burton Hollifield, *University of British Columbia*: "An Empirical Analysis of A Pure Limit Order Market"

Joel Houston, *University of Florida*: "Banking Relationships, Financial Constraints and Investment: Are Bank Dependent Borrowers More Financially constrained?"

Ronald W. Masulis, *Vanderbilt University*: "Intraday Market Response to Equity Offering Announcement: A NYSE/Nasdaq Comparison"

Hamid Mehran, *Northwestern University*: "CEO Incentive Plans and Corporate Liquidation Policy"

Matt Pritsker, *Federal Reserve Board*: "Evaluating Value-at-Risk Methodologies"

Mark Ready, *University of Wisconsin-Madison*: "The Specialist's Discretion: Stopped Orders and Price Improvement"

Jay Ritter, *University of Florida*: "Valuing IPO's"

Paul Schultz, *Ohio State University*: "Regulatory and Legal Pressures and the Costs of Nasdaq Trading"

Sergei Severinov, *Stanford University*: "Optimal Structure of Agency with Product Complementarity and Substitutability"

Sang-Jin Wei, *Harvard University*: "The Big Players in the Foreign Exchange Market: Do They Trade on Information or Noise?" ■

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. During the year the Association hosted several speakers on finance topics.

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. Students gain practical experience in selecting investments and in actively managing a portfolio. This practical experience is supplemented by club sponsored investment contests and speakers from the investment community who discuss current topics and trends in the industry. ■

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 1997-98 academic year were:

Kenneth Abbott, Vice President — Risk Management, *Bankers Trust Company*

Roger E. Brinner, Former Group Vice President and Executive Research Director, *DRI/McGraw Hill Inc.*

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

Rick Cooper, Vice President, *State Street Global Advisors*

G. Hilton Dean, Vice Chairman, Finance, Technology & Administration, *Ernst & Young LLP*

Jim Graves, Co-Head of Investment Banking, *J.C. Bradford & Co.*

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

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

William R. Johnston, President and CEO, *New York Stock Exchange*

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

Sandra Kreiger, Senior Vice President, *Federal Reserve Bank of New York*

Phil Kreps, Partner, *Equitable Securities Corporation*

Paul Kupiec, Principal Economist, *Freddie Mac*

Jack W. Lavery, Senior Vice President and Director of Corporate and Public Policy Issues, *Merrill Lynch & Co.*

Eugene A. Leonard, President, *Corporation for Financial Risk Management*, St. Louis

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

Arthur Martinez, President and CEO, *Sears, Roebuck & Company*

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

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

Lawrence H. Meyer, Member, *Board of Governors of the Federal Reserve System*

Scott E. Pardee, Senior Lecturer and Executive Director, *Finance Research Center MIT*

Eugene B. Shanks, President, *NetRisk*

Donald E. Townswick, Equity Portfolio Manager, *Aeltus Investment Management, Inc.*

Dana Troxell, Senior Industry Analyst, *Goldman Sachs* ■

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.

Professor Ball presented a paper on stochastic covariance estimation at the High Frequency Data in Finance Conference in Zurich, Switzerland in April of 1998. Ball's recent paper, "Detecting Intramarginal Intervention within a Target Zone: Application to the European Exchange Rate Mechanism," (with Antonio Roma) has been accepted for publication in *Applied Mathematical Finance*, and his paper, "Regulatory Capital of Financial Institutions: A Comparative Analysis," (with Hans Stoll) appeared in the August 1998 issue of *Financial Markets, Institutions and Instruments*. He also serves as a referee for numerous research journals.

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

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. Research interests include corporate finance, governance, and investment banking. Bonkoski teaches the core finance class (Managerial Finance) and Securities and Portfolios.

Professor Bonkoski has spent this summer working on two projects. One investigates CEO turnover in firms during the first five years after initially going public. The other seeks to explain the variation across firms in the discount to true value firms receive when going public.

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, has been accepted for presentation at the annual meeting of the American Accounting Association in August 1998. Another paper, "The Use of Accruals in Income Smoothing: A Permanent Earnings Hypotheses," has been accepted in *Advances in Quantitative Analysis of Finance and Accounting*. "Income Smoothing and Firm Characteristics," with D. Jeter was published in *Accounting Enquiries* (August 1997). Another paper, "Income Smoothing and Underperformance in Initial Public Offerings," with C. Lewis, was published in the *Journal of Corporate Finance* in the Spring 1998 issue.

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 accepted for publication and is forthcoming in the *Journal of Financial Economics*. The above paper was presented at the Western Finance Association meetings and the NBER asset pricing conference. He has served as a referee for a number of journals including *The Review of Financial Studies, Journal of Financial Intermediation, Journal of Financial Markets, Journal of Finance,* and *Journal of Services Marketing*.

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

Research interests include both corporate finance and market microstructure. His current research focuses on the impact of the SEC rule changes on Nasdaq trading costs, the link between tick sizes and trading costs, and the long run performance of seasoned equity following rights offerings.

During the past year, Professor Christie presented his research at the International Conference for Order Flow: A Market Microstructure Conference in Maui, and the Journal of Financial Intermediation Conference on Liquidity in St. Louis. His paper, "Dealer Markets under Stress: The performance of Nasdaq market makers during the November 15, 1991 market break," joint with Paul Schultz (Ohio State) will appear in the *Journal of Financial Services Research*. His forthcoming publications also include "The effects of market reform on the trading costs and depths of Nasdaq stocks" (with Michael Barclay, Jeffrey Harris, Eugene Kandel and Paul Schultz), which will appear in the *Journal of Finance*, and "The initiation and withdrawal of odd-eighth quotes among Nasdaq stocks: An empirical analysis" (with Paul Schultz), which will appear in the *Journal of Financial Economics*. In addition, he has been invited to write the chapter, "Market Reform, " for the *Handbook of Modern Finance*, and the lead article for the Summer 1998 edition of the *Contemporary Finance Digest* titled "Evening the odds: Reform of the Nasdaq Stock Market."

Christie serves on the program committee for the Financial Management Association and the Western Finance Association and continues in his role as an Associate Editor of *Financial Management* and the *Journal of Financial Intermediation*. He served as a panelist in the session, "Pressures for Reform," at the conference on Rethinking Equity Trading at Nasdaq, sponsored by Baruch College. He was profiled in the November 1997 issue of

Ticker magazine and the March/April 1998 issue of *Business Nashville* regarding his recent work on the impact of market reform on trading costs. He also co-taught the Ph.D. seminar, "Doctoral Seminar in Capital Markets," with Wayne Ferson (University of Washington) at Arizona State University in the Winter of 1998 and now serves on the dissertation committee of one of ASU's doctoral students. He was also the recipient of the James A. Webb Jr. Award for Excellence in Teaching and the Executive M.B.A. Program Outstanding Professor Award in 1998.

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.

Professor Cohen was recently appointed Chairman of the Committee on Law and Justice Statistics, American Statistical Association. Locally, he completed his service as a member of the Commission on Law Enforcement and Justice formed by the Mayor to help reduce violent crime in Nashville.

Recent Presentations include "Does the Market Value Environmental Performance?" (Environmental Risk Management Conference Willis Corroon, Nashville, TN); "Regulating Corporate Criminal Sanctions: Evidence on the Effect of the U.S. Sentencing Guidelines," (American Law and Economics Association meetings, Berkeley, CA); "Corporate Environmentalism" and "Disclosure Policies for Pollution Control" (World Congress of Environmental and Resource Economists, Venice, Italy); "The Relationship between Financial and Environmental Performance" (BELL Conference, World Resources Institute, Los Angeles, CA); and "Does it Pay to be Green?" (Academy of Management annual meetings, San Diego, CA).

Cohen recently published the following articles: "The Cost of Mental Health Care for Victims of Crime" in the *Journal of Interpersonal Violence*; "The Monetary Value of Saving a High Risk Youth" in the *Journal of Quantitative Criminology*; "The Effect of Concealed Weapons Laws: An Extreme Bound Analysis" (joint with William Alan Bartley) in *Economic Inquiry*; and "Sentencing the Environmental Criminal" in *Environmental Crime: Enforcement Policy and Social Responsibility* (Aspen Publishers). He also served as guest editor of a special issue of *Managerial and Decision Economics*, "Firm Response to Environmental Pressures."

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.

Dr. Daane is a director of the National Futures Association, and, as a former member of the Board of Governors of the Federal Reserve System, he is invited to participate in many Federal Reserve Bank conferences every year. He is senior advisor to the Owen International Business Association and teaches a unique Seminar on Monetary and Fiscal Policy at Owen during the spring for which he brings in many of the distinguished guest speakers listed elsewhere in this newsletter.

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 December, Froeb presented a paper on mergers in auction markets at the University of Rochester. He presented a series of papers on similar topics at the American Economic Association Meetings in Chicago and at the U.S. Department of Justice in February. In April, his interactive web games were named the 1998 "Outstanding Technological Innovation" at the University of Virginia s Price Waterhouse conference on Business Education. In June he conducted a training seminar for the Justice Department on the use of his software, SimMerger™.

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.

During the past year Gande's paper, "Bank Underwriting of Debt Securities: Modern Evidence," (with Manju Puri, Anthony Saunders, and Ingo Walter) was published in the *Review of Financial Studies*. He presented his paper, "Raising International Capital through ADRs: Evidence from Emerging Markets," at the Western Finance Association (WFA) meetings in San Diego. During the summer, he worked on a paper, "Bank Entry, Competition and the Market for Corporate Securities Underwriting," (with Manju Puri and Anthony Saunders) and presented it at a brown-bag lunch meeting at Owen. He also served as a referee for the Journal of Banking and Finance and discussed a paper at the Financial Economics and Accounting Conference at SUNY Buffalo.

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

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Faculty Activities *(continued)*

current studies focus on auditor-client realignment, trends in auditor industry specialization, and the information content of restructuring charges.

Professor Hogan's paper, "Industry Specialization by Auditors," with Debra Jeter has been accepted for publication in *Auditing: A Journal of Practice and Theory.*

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

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

Professor Huang has had two papers and one book review published during the past year. "Is It Time to Split the S&P 500 Futures Contract?" appeared in the *Financial Analysts Journal*, and "The Components of the Bid-Ask Spread: A General Approach" appeared in the *Review of Financial Studies.* Both of the papers are co-authored with Hans R. Stoll. Huang wrote a review of *Management and Control of Foreign Exchange Risk* by Laurent L. Jacque for the *Journal of Finance.* His paper with Ronald W. Masulis on "FX Spreads and Dealer Competition Across the 24 Hour Trading Day" is forthcoming in the *Review of Financial Studies.*

Huang also participated in numerous professional activities since last summer. He conducted a Ph.D. seminar on "Empirical Methods in Finance with Special Emphasis on Market Microstructure" at the Aarhus School of Business, University of Aarhus, from September 29 to October 2, 1997. While on a class trip to Mexico City, he was interviewed by Diane Perez (anchorwoman) on Conexion Financiera (CNBC Spanish program) at Televisa Chapultapec on January 22, 1998. He presented his paper on the "Components of the Bid-Ask Spread: A General Approach" (with Hans Stoll) at the Stockholm School of Economics on October 3, 1997. He presented his paper on "FX Spreads and Dealer Competition Across the 24 Hour Trading Day" (with Ronald Masulis) at the University of Houston on April 10, 1998, the Chinese University of Hong Kong on May 19, 1998, and the Hong Kong University of Science and Technology on May 20, 1998. He was the New Asia Ming Yu Visiting Scholar at the Chinese University of Hong Kong from May 10 to May 23, 1998. Huang served on the 1999 American Finance Association Program Committee and the 1998 PACAP/FMA Review 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 income smoothing, components of earnings, the market for audit services, and audit opinions.

Professor Jeter is currently serving on the editorial board of *The Accounting Review.* Her paper, "Client-Auditor Realignment and Restrictions on Auditor Solicitation," (with P. Chaney and P. Shaw) appeared in the *Accounting Review* in July 1997. Another paper, "Industry Specialization by Auditors," (with C. Hogan) has been accepted for publication in *Auditing: A Journal of Practice and Theory.* "The Use of Accruals in Income Smoothing: A Permanent Earnings Hypothesis" (with P. Chaney and C. Lewis) has been accepted for publication in *Advances in Quantitative Analysis of Finance and Accounting*, and "Income Smoothing and Firm Characteristics," (with P. Chaney) was published in *Accounting Enquiries*, August 1997 issue.

In August 1997, Jeter's paper with C. Hogan, "The Information Content of Restructuring Charges: A Contextual Analysis," was presented at the Annual 1997 AAA Meeting. Her paper, "The Effect of Reporting Restructuring Charges on Analysts' Forecast Revisions and Errors," (with P. Chaney and C. Hogan) has been accepted for presentation at the annual meeting of the AAA in August 1998.

Jeter received a Dean's Award for Teaching Excellence in 1998, and in June 1998 she taught mergers and acquisitions accounting in the Program in Bank Financial Management at Owen.

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

Research interests include corporate finance, financial markets, and financial accounting. Current research topics include convertible debt, stock price responsiveness to earnings forecasts, and margin policy.

Subjects of published papers by Lewis include the information content of implied volatilities, volatility forecasting, capital structure choice, leasing, the design and valuation of convertible debt, and earnings management.

In the past year, three of Professor Lewis's papers have appeared in print. "Income Smoothing and Underperformance in Initial Public Offerings" (with Paul. Chaney), was published by the *Journal of Corporate Finance*, "Agency Problems, Information Asymmetries and Convertible Debt Security Design" (with Richard. Rogalski and Jim Seward) was published by the *Journal of Financial Intermediation*, and "Understanding the Design of Convertible Debt" (with Richard. Rogalski and Jim Seward) was published by the *Journal of Applied Corporate Finance.*

Lewis continues to work on a grant from State Street Global Advisors to investigate stock price behavior following forecast revisions by individual security analysts. The study seeks to examine whether particular analysts influence subsequent changes in stock price more than others. He presented his paper, "Margin Adequacy in Futures Markets," (with Ted Day) at the Amos Tuck School of Business at Dartmouth College. The paper, "Is Convertible Debt a Substitute for Straight Debt or Common Equity?," (with Richard Rogalski and James Seward) was presented at the University of Miami. Lewis served as a referee for numerous journals during the past year. He is a past winner of the best teacher awards voted by the Executive MBA and the regular MBA programs.

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.

Professor Masulis teaches corporate value management, corporate financial policy, corporate finance theory, asset pricing theory, topics in investment banking, financial institutions, and mergers and acquisitions. He received the Dean's Award for Teaching Excellence in 1998. His paper, "FX Spreads and Dealer Competition Across the 24 Hour Day," (with Roger Huang) is forthcoming in the *Review of Financial Studies.*

Masulis currently serves as associate editor of the *Journal of Finance*, the *Journal of Corporate Finance*, the *Journal of Financial and Quantitative Analysis,* and the *Journal of Financial Research.*

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 served as visiting scholar at the International Monetary Fund in Washington D.C. Recently published research papers include: "Exchange rates, Domestic Prices, and Central Bank Actions: Recent U.S. Experience" (with Helen Popper) in the *Southern Economic Journal*, "Convergence to the Law of One Price without Trade Barriers or Currency Fluctuations" (with Shang-Jin Wei) in the *Quarterly Journal of Economics*, and "Inflation and Relative Price Variability in the Short and Long Run: New Evidence from the United States" in the *Journal of Money Credit and Banking.*

David T. Scheffman, The Justin Potter Professor of American Competitive Enterprise. Ph.D. (MIT 1971).

Research interests include business strategy, marketing, pricing, distribution, regulation, and antitrust. Current research topics include a book on strategy, management, and valuation of intellectual property, the law and economics of punitive damages, the financial economics of the commercial aircraft industry, econometric problems arising from certain forms of data aggregation, and mergers in the electric power industry.

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 and other aspects of financial markets.

Professor Stoll spoke on the topic, "Components of the Bid-Ask Spread: A General Approach," at Cornell University in September 1997 and at Duke University in December. He presented the paper, "Exchange Rates and Firms' Liquidity: Evidence from ADRs" (with R.D. Huang), and chaired a session at a conference on International Competition for Order Flow held in Maui in January 1998. In February, he lectured in a masters program in banking and finance at the University of Krems in Austria. In March, he attended a meeting of the Economic Advisory Board of the NASD in Washington DC, and in April he attended the gala celebration in Chicago of the Chicago Board Options Exchange's 25th year. Also in April, Stoll organized the 11th annual conference of the Financial Markets Research Center. On June 24, Stoll gave the plenary lecture at the annual conference of the Multinational Finance Society in Helsinki, Finland. Recent publications include "Components of the Bid-Ask Spread: A General Approach," (with Roger D.Huang) in the *Review of Financial Studies*; "Expiration-Day Effects of the All Ordinaries Share Price Index Futures: Empirical Evidence and Alternative Settlement Procedures" (with Robert Whaley) in the *Australian Journal of Management*; "Is It Time to Split the S&P 500 Futures Contract?" (with R.D. Huang) in the *Financial Analysts Journal*; "Regulatory Capital of Financial Institutions: A Comparative Analysis," (with Clifford A. Ball), in Financial Markets, Institutions & Instruments; and "Affirmative Obligation of Market Makers: An Idea Whose Time Has Passed?" forthcoming in the *Financial Analysts Journal.*

Stoll is President-elect of the American Finance Association responsible for the next meetings of the association to be held January 1999 in New York City. He serves on the editorial board of ten academic journals.

H. Martin Weingartner, The Brownlee O. Currey Professor of Finance. M.S., Ph.D. (Carnegie Mellon, 1962).

Specialty is the financial strategy of organizations — particularly entrepreneurial ventures. Weingartner has written extensively on the uses of mathematical models in financial decision making and approaches to capital budgeting and has consulted for major financial institutions and other organizations.

Weingartner taught courses in negotiation, case studies in finance, financial decision making, and real estate finance. He is a past president of The Institute of Management Sciences and is associate editor of *Management Science.* His publications include *Mathematical Programming and the Analysis of Capital Budgeting Problems* and numerous articles. ■

Faculty Research Papers

Current working papers completed or revised since January 1, 1997 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.

*92-18 "Why Do Corporations Become Criminals? Ownership, Hidden Actions, and Crime as an Agency Cost," by **Cindy Alexander and Mark A. Cohen**. (March 1998)*

We examine the relationship between ownership structure and corporate crime. Our approach draws upon two lines of research: (1) the theory of the firm which poses ownership as a critical incentive mechanism and (2) the economic theory of corporate crime, which emphasizes the role played by top management in affecting crime in the corporation. We find that crime occurs less frequently among firms in which management has a larger ownership stake. Our results imply that penalizing "corporations" (shareholders) deters crime, and that corporate crime tends not to benefit shareholders, ex ante. Rather than being something shareholders have encouraged, corporate crime appears to reflect an agency cost limited but not optimally eliminated through the costly efforts of top management. The evidence is consistent with the notion that ownership structure plays an important role in aligning the hidden actions of top management with the shareholder interest.

*94-17 "Trading Volume and Cross-Autocorrelations in Stock Returns," by **Tarun Chordia and Bhaskaran Swaminathan**. (March 1998)*

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.

*94-49 "The Use of Accruals in Income Smoothing: A Permanent Earnings Hypothesis," by **Paul K. Chaney, Debra C. Jeter, and Craig Lewis**. (forthcoming in Advances in Quantitative Analysis of Finance and Accounting)*

We suggest and present evidence that managers smooth income around their assessments of the firms' permanent earnings. We suggest that income smoothing is a long-term strategy which accomplishes multiple purposes. We form predictions regarding the direction of discretionary accruals in a given year by comparing income before discretionary accruals to the previous year's reported earnings. We further hypothesize and present evidence that earnings response coefficients, which measure the extent to which reported earnings reflect the information used by the market in forming prices, are higher for firms that engage consistently in income smoothing.

*94-52 "Estimation of First Order Autoregressive/Unit Root Models with Rounding," by **Clifford A. Ball**. (January 28, 1997)*

Time series observations are often rounded but are commonly estimated as if no rounding were present. In this paper we study first order autoregressive models subject to rounding and implement maximum likelihood estimation under these conditions. We also assess the adequacy of simple adjustments, based on Shephard's corrections, to estimators that are calculated ignoring rounding. The limiting distribution of autocorrelation statistics is documented when the underlying time series is subject to unit roots and rounding. We apply these methods to estimate the volatility of stock prices based on intra-day quotes. In this case frequent observations are recorded irregularly subject to bid-ask spreads.

*95-13 "Environmental and Financial Performance: Are They Related?" by **Mark A. Cohen, Scott A. Fenn, Shameek Konar, and Jonathan S. Naimon**. (May 1997)*

Prior research on the relationship between financial and environmental performance has been contradictory. This Study reports on a new objective data set detailing the environmental performance of the Standard and Poor's 500 companies. Industry-balanced portfolios were constructed and the financial returns of the "high pollution" portfolios were compared to those of the "low pollution" portfolios. Overall, the study found no penalty for investing in a "green" portfolio and, in many cases, lower pollution portfolios achieved better returns than high pollution portfolios and the S&P 500 index. The study also examines the stock market reaction to new information on the environmental performance of individual firms, and provides a preliminary analysis of which comes first - good financial performance or good environmental performance.

*95-17 "FX Spreads and Dealer Competition Across the 24 Hour Trading Day," by **Roger D. Huang and Ronald W. Masulis**. (forthcoming in Review of Financial Studies)*

This study examines the impact of competition on bid-ask spreads in the spot foreign exchange market. We measure competition primarily by the number of dealers active in the market and find that bid-ask spreads decrease with an increase in the number of competing dealers, even after controlling for the effects of volatility. The expected level of competition is time-varying and is highly predictable. It also displays a strong seasonal component that in part is induced by geographic concentration of business activity over the 24 hour trading day. Our estimates show that the addition of one more competing dealer is expected to lower the average quoted spread by 1.7%.

*96-01 "The Initiation and Withdrawal of Odd-Eighth Quotes Among Nasdaq Stocks: An Empirical Analysis," by **William G. Christie and Paul H. Schultz**. (forthcoming in Journal of Financial Economics)*

Christie and Schultz (1994) found that market makers in many active Nasdaq stocks avoided odd-eighth quotes. This paper studies 67 (58) Nasdaq stocks whose market makers initiate (withdraw) odd-eight quotes. These regime shifts are often completed within the span of a day, and coincide with dramatic changes in dollar, percentage and effective spreads. In most cases, we are unable to identify comparable changes in the costs of making markets. We do identify long-run changes in average prices that may provide a partial explanation. However, we also find that these

patterns are not shared by stocks traded in auctions markets.

96-02 "Dealer Markets Under Stress: The Performance of Nasdaq Market Makers During the November 15, 1991 Market Break," by ***William G. Christie*** *and* *Paul H. Schultz. (forthcoming in Journal of Financial Services Research)*

The liquidity of the Nasdaq market was seriously undermined during the crash on October 19, 1987 when bid-ask spreads widened dramatically, and dealers reputedly withdrew from market making. This paper studies the liquidity of 36 Nasdaq issues on November 15, 1991, when average prices fell over 4%, representing the first major correction in the post-crash era. We find that bid-ask spreads, the percentage of dealers posting inside quotes, and trading volume remained virtually unaffected. Effective spreads were also largely unaffected, except for trades in excess of 1,000 shares among issues whose market makers avoided odd-eighth quotes. Our evidence implies that unlike October 1987, the liquidity of the Nasdaq market did not deteriorate appreciably during this episode of unusual market stress.

96-11 "Correlated Signals and the Speed of Adjustment," by ***Tarun Chordia*** *and Bhaskaran Swaminathan. (August 1997)*

This paper empirically examines the relation between the degree of correlation in the signals received by the informed traders, and the speed of adjustment of stock prices. Using the average correlation in analyst forecasts and the number of days to the next earnings announcement as proxies for the degree of correlation in the signals of the informed traders, we find some weak evidence that stocks with a higher degree of correlation in informed signals lead stocks with a lower degree of correlation in informed signals. Cross-sectional tests indicate that the correlation in analyst forecasts has a second order effect on the speed of adjustment of stocks to information. Most of the variation in the speed of adjustment is explained by firm size, trading volume, and stock price. Overall, the results suggest that the degree of correlation in the signals received by the informed traders may not be as strong a determinant of speed of adjustment as the number of informed traders.

96-14 "A Difference Estimator for Testing Equality of Variances for Paired Time Series," by Bruce Cooil and ***Luke M. Froeb****. (forthcoming in Journal of Time Series Analysis)*

A difference estimator of the standard error for the difference in variances of paired time series is proposed. The difference estimator uses the independence of periodogram ordinates to remove nuisance parameters. The difference estimator is easier to compute than one centered on the smoothed periodogram, but shares the same small sample shortcomings for non normal series.

96-15 "An Innovation Variance Ratio Test," by ***Luke M. Froeb****. (July 30, 1997)*

An innovation variance ratio test based on the difference between two integrated log periodograms is derived. The test uses a difference estimator to remove nuisance spectral parameters.

96-19 "Industry Specialization by Auditors," by ***Chris E. Hogan*** *and* ***Debra C. Jeter****. (forthcoming in Auditing: A Journal of Practice and Theory)*

The issue of auditor concentration has long been of interest to accounting researchers. We examine changes in concentration and in market share for industry leaders from 1976 to 1993 and, in contrast to prior literature, provide evidence that scale economies or superior efficiencies of heavy-involvement auditors are not limited to regulated industries but extend to nonregulated industries as well. We find that for the audit firms classified as market leaders, market share has increased over time, whereas market share has declined for firms with smaller share. This suggests that there are returns to investing in specialization.

96-20 "Margin Adequacy in Futures Markets," by Theodore E. Day and ***Craig M. Lewis****. (February 1997)*

This paper proposes a value-based standard for setting initial margin policy. We show that margined futures positions are a type of barrier option. Given this observation, initial margin requirements are adequate only if the initial margin which must be posted is at least equal to the ex ante value of the option-like payoff to the futures position. Using a numerical valuation approach which 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 options based standards for adequacy.

96-25 "Cross-Sectional Determinants of Expected Returns," by Michael J. Brennan, ***Tarun Chordia****, and Avanidhar Subrahmanyam. (July 22, 1997)*

We analyze the relation between equity returns, risk, and a rich set of security characteristics that includes institutional ownership, S&P 500 index membership, analyst following, and dispersion in analyst forecasts, in addition to previously examined variables such as the book-to-market ratio, firm size, the bid-ask spread, and lagged returns. Our primary objective is to determine whether these non-risk characteristics have marginal explanatory power relative to the Connor and Korajczyk (1988) risk factors. We also compare the different approaches that have been used to test asset pricing models against specific alternatives. We find that inferences are extremely sensitive to the sorting criteria used for portfolio formation, so that results based on regressions using portfolio returns should be interpreted with caution. Fama-MacBeth type regressions for individual securities suggest some new findings: risk-adjusted stock returns show a negative relation with dollar trading volume, and a positive relation with S&P 500 membership. However, previously noted book-to-market, size, and momentum effects are eliminated once account is taken of the above characteristics.

96-45 "The Information Content of Restructuring Charges: A Contextual Analysis," ***Chris E. Hogan*** *and* ***Debra C. Jeter****. (June 1997)*

In recent years, the phrase "restructuring charges" has become increasingly popular and ambiguous. Whether these charges convey information or serve simply as a dumping ground to facilitate future manipulation of the earnings numbers is a question of interest to various groups. Prior empirical studies addressing the stock market reaction to the announcement of asset write-offs and/or restructuring charges have provided mixed results. For a sample of firms taking restructuring charges in the early 1990's, we examine market returns around the announcement of the restructuring charge and their relation to unexpected earnings and the components of the restructuring charge. We find evidence that the disaggregation of restructuring charges is informative to investors. However, the market's response differs depending on whether the charges are categorized as asset write-offs or as severance and other cash outlay charges. In addition, the market interprets restructuring charges differently for profit versus loss firms, and for firms with and without recent management changes.

97-01 "Industry Conditions, Growth Opportunities, and Market Reactions to Convertible Debt Financing Decisions," by ***Craig M. Lewis****, R. Rogalski, and J. Seward. (February 1997)*

This paper examines the relation between share price reactions around convertible debt issue announcements and the profitability of the issuing firm's growth opportunities. We find that investor reactions are positively related to the profitability of the issuing firm's

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investment opportunities, although the relationship is not statistically significant across the full issuer universe. Further analysis suggests that growth opportunities are significant determinants of investor reactions when we consider differences in issuer credit quality as well as industry-specific and industry-adjusted measures of operating and financial performance. For investment grade issuers, share price reactions depend on industry-adjusted and industry-specific growth opportunities and leverage. By contrast, speculative grade issuers have share price reactions that depend on their pre-issue profitability, pre-issue stock market conditions and industry-specific growth opportunities. Our results highlight the importance of including industry measures of operating and financial performance, measures of general economic conditions, and issuer creditworthiness in understanding investor reactions to convertible debt financing announcements.

97-02 Mergers Among Asymmetric Bidders: A Logit Second-Price Auction Model," by ***Luke Froeb****, Steven Tschantz., and Philip Crooke. (May 6, 1998)*

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' Liquidity: Evidence from ADRs," by ***Roger D. Huang*** *and* ***Hans R. Stoll****. (September 15, 1997)*

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's ADRs around the time of pound sterling withdrawal from the European Exchange Rate Mechanism in September 1992 and Mexican ADRs during the time of 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. (May 29, 1997)*

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.

97-09 "A Re-examination of Some Popular Security Return Anomalies," by Michael J. Brennan, ***Tarun Chordia****, and Avanidhar Subrahmanyam. (June 23, 1997)*

We re-examine the relation between stock returns, measures of risk, and a set of non-risk security characteristics, including the book-to-market ratio, firm size, the bid-ask spread, the stock price, the dividend yield, and lagged returns. Our primary objective is to determine whether these non-risk characteristics have marginal explanatory power relative to the loadings on the Connor and Korajczyk (1988) risk factors. Fama-MacBeth type regressions using risk adjusted returns on individual securities shed light on earlier anomalous findings and reveal new relations. The widely cited book-to-market and momentum effects are somewhat attenuated once account is taken of the Connor and Korajczyk factors. Firm size is shown to have no incremental explanatory power for returns in the presence of trading volume, suggesting that firm size is a proxy for liquidity. Finally, dividend yield effects consistent with a changing tax code are detected.

97-10 "The Effects of Market Reform on the Trading Costs and Depths of Nasdaq Stocks," by Michael J. Barclay, ***William G. Christie****, Jeffrey H. Harris, Eugene Kandel, and Paul H. Schultz. (forthcoming in Journal of Finance)*

The relative merits of dealer versus auction markets have been a subject of significant and sometimes contentious debate. On January 20, 1997, the Securities and Exchange Commission began implementing a series of reforms that permit the public to compete directly with Nasdaq dealers by submitting binding limit orders. In addition, superior quotes placed by Nasdaq dealers in private trading venues began to be displayed in the Nasdaq market. We measure the impact of these new rules on various measures of performance, including trading costs and depths. Our results indicate that quoted and effective spreads fell dramatically without adversely affecting market quality.

97-11 "Mergers, Set-Asides and Bidding Preferences in Asymmetric Second-Price Auctions," by Lance Brannman and ***Luke M. Froeb****. (April 14, 1998)*

This paper studies competition in asymmetric oral-auction markets for Forest Service timber. Bidder asymmetry is modeled as a function of hauling distance and firm size. We use a within-auction estimator based on the differences between losing bids to estimate the joint distribution of bidder values. 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 estimated 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 under a consumer-welfare standard. Eliminating the Small Business Administration 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. (1997)*

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."

97-13 "A Robust Test for Consumer Welfare Enhancing Mergers among Sellers of a Homogeneous Product," by ***Luke M. Froeb*** *and* ***Gregory J. Werden****. (forthcoming in Economics Letters)*

Antitrust enforcement agencies and courts use net effect on price as a touchstone for the legality of mergers. This paper derives a simple, and completely general, condition for implementing that standard when industry equilibrium is static Nash in quantities (Cournot).

97-14 "Affirmative Obligation of Market Makers: An Idea Whose Time Has Passed?" by ***Hans R. Stoll****. (forthcoming in Financial Analysts Journal)*

Equities market makers on exchanges regulated by the SEC are subject to an affirmative obligation to make "fair and orderly markets." In return for accepting this obligation, they are granted certain benefits, such as ready access to order flow and information advantages. Financial economists have long been skeptical of the efficacy of a legal requirement to "do good," and have found little, if any, evidence that the requirement contributes to the quality of markets. As electronic communications increase competition across trading systems, the ability to impose an affirmative obligation declines. Market makers are reluctant to stabilize markets at a loss to themselves when competition limits their ability to capture their designated benefits. In addition, as more liquidity is provided directly by electronic delivery of customer orders, the need for market makers declines.

97-19 "Does the Market Value Environmental Performance?" by ***Shameek Konar*** *and* ***Mark A. Cohen****. (May 1997)*

Previous studies that attempt to relate environmental to financial performance have often led to conflicting results due to small samples and subjective environmental performance criteria. We report on a study that relates the market value of firms in the S&P 500 to objective measures of their environmental performance. After controlling for variables traditionally thought to explain firm level financial performance, we find that bad environmental performance has a significant negative effect on the intangible asset value of firms. The average "intangible liability" for firms in our sample is 360 million dollars - approximately 8.4% of the replacement value of tangible assets. We conclude that legally emitted toxic chemicals have a significant effect on the intangible asset value of publicly traded companies. A 10% reduction in emissions of toxic chemicals results in a $31 million increase in market value. The magnitude of these effects varies across industries, with larger losses accruing to the traditionally polluting industries.

97-20 "Why Do Firms Pollute (and Reduce) Toxic Emissions?" by ***Shameek Konar*** *and* ***Mark A. Cohen****. (March 1997)*

There is a growing trend in both the U.S. and abroad for firms to reduce emission levels beyond the legally required mandate. One of the most publicized examples of this phenomenon in the U.S. is the release of toxic chemicals. These emissions have come under increasing scrutiny since passage of the "Right-to-Know" law mandating the public availability of toxic release inventory (TRI) information beginning in 1989. In response to this new information, some firms have dramatically reduced toxic chemical emissions. This paper explores the factors that both explain differences across firms in their initial toxic emission levels and in the reductions beyond any legally required levels subsequent to the availability of public information on TRI. The underlying theory is that firm-level pollution varies because of firm-specific factors that affect both the "ability" and "incentive" for firms to reduce pollution. In comparing emission levels between 1989 and 1992, we find that the largest firms are most likely to reduce emissions subsequent to this new information being made public. We also find that financial ability plays an important role in emission levels. On the other hand, we were unable to find any evidence that firms who advertise more heavily to consumers or had significant negative media attention concerning their emission levels reduced their emissions more than average after controlling for firm size.

97-21 "Intraday Market Response to Equity Offering Announcements: A NYSE/AMEX-NASDAQ Comparison," by ***Ronald W. Masulis*** *and* ***L. Shivakumar****. (June 27, 1997)*

This study compares the speed of price adjustment for stocks on the NYSE/AMEX with the speed on NASDAQ to seasoned equity offering announcements using transactions data. We find that NASDAQ stocks react faster to equity offering announcements than NYSE/AMEX stocks. The faster NASDAQ response is surprising given that these stocks are less frequently traded and have smaller equity capitalization than the NYSE/AMEX stocks. Further analysis suggests that the faster reaction of NASDAQ stocks is due to a faster response to information by traders and dealers on NASDAQ and due to the existence of stale limit orders slowing the observed price reaction on the NYSE/AMEX. In addition, consistent with NYSE/AMEX specialists bearing greater adverse selection risk from market making, these stocks exhibit larger average bid-ask spread reactions to equity offering announcements than do NASDAQ stocks, which appears to be a further cause of the slow price reactions of NYSE/AMEX stocks to new information.

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 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.

97-29 "The Effect of Reporting Restructuring Charges on Analysts' Forecast Revisions and Errors," by ***Paul K. Chaney, Chris E. Hogan,*** *and* ***Debra C. Jeter****. (June 1998)*

Unlike prior studies which examine the market's reaction to restructuring charges and find evidence of a generally positive, although sometimes mixed, response, we examine the effect of the restructuring charge on analysts' forecast revisions and errors and provide evidence generally consistent with a

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negative interpretation. Specifically, subsequent to a restructuring charge announcement, analysts revise their one-year ahead and two-year ahead earnings forecasts downward on average. Further, when we examine the forecast errors in the year following the restructuring charge, we find evidence that the analysts' accuracy has declined and, despite the downward revision, analysts are still biased in the direction of over-optimism.

97-30 "Exchange Rate Arrangements and Purchasing Power Parity," by ***David C. Parsley*** *and Helen A. Popper. (February 1998)*

We study the behavior of real exchange rates under alternative exchange rate arrangements using a panel of 82 countries for over 30 years. We first provide summary statistics that describe the extent of PPP deviations under alternative exchange rate arrangements. While we find the overall size of deviations to be roughly comparable across arrangements, we note that their variability differs markedly, though not as greatly as commonly supposed. Next, we test for the presence of a unit root in the real exchange rate, and we provide estimates of the speed of its mean reversion under alternative exchange rate arrangements. We find faster reversion in those countries with a dollar peg than in those without it. We also find that convergence depends positively on the size of the deviation. The extent of this nonlinearity also differs across the various arrangements: the adjustment under a peg is highly nonlinear. Finally, we use the more general error correction framework to examine separately the adjustments of the nominal exchange rate and of relative prices under alternative exchange rate arrangements. While we find that both exchange rates and prices typically adjust to deviations, we find that exchange rates carry out the lion's share of the adjustment. This result holds across all exchange rate arrangements we examine, including those classified as maintaining a peg.

98-01 "The Entry-Inducing Effects of Horizontal Mergers," by ***Luke Froeb*** *and Gregory J. Werden. (forthcoming in Journal of Industrial Economics)*

Antitrust case law suggests that entry normally prevents or reverses anticompetitive effects from horizontal mergers. But the opportunity for entry created by an anticompetitive merger plausibly is too small to induce entry, even absent any Stiglerian "barriers to entry." This is illustrated in the context of a Cournot model with a homogeneous product and a Bertrand model with differentiated products. Significant entry also makes otherwise profitable Bertrand mergers unprofitable, assuming no efficiencies. Consequently, the entry issue can be collapsed into the efficiency issue: If a merger does not generate significant efficiencies, it also cannot be expected to induce entry.

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 "Conditional Performance Following Security Offerings: Is There a 'New Issues Puzzle'?" by B. Espen Eckbo, ***Ronald W. Masulis,*** *and Øyvind Norli. (May 1998)*

The new issues puzzle" represents the finding that firms issuing common stock subsequently experience stock price underperformance relative to a set of non-issuing control firms over three and five year horizons. We critically examine the empirical methodology behind the puzzle using a sample of seasoned public offerings of debt and equity by industrial firms and public utilities. Replication of the conventional matching procedures yields similar evidence of long term stock return underperformance. However, equal- and value- weighted portfolios of security issuers and control firms fail to show long term underperformance when using multi-factor return benchmarks that allow for time varying expected returns.

98-08 "Is Convertible Debt a Substitute for Straight Debt or Common Equity?" by ***Craig M. Lewis,*** *Richard J. Rogalski, and James K. Seward. (October 1997)*

This paper examines whether issuers substitute convertible debt financing for straight debt or common equity. When we classify convertible debt issuers as 'debt-like' or 'equity-like' using a security choice model, we find that 'debt-like' issuers substitute convertible debt for straight debt to mitigate agency costs caused by risk-shifting investment opportunities. 'Equity-like' issuers substitute convertible debt for common stock to reduce the adverse selection costs of a direct equity issue. Our findings suggest that some issuers use convertible debt to control bondholder/stockholder agency conflicts, while other issuers use convertible debt as backdoor equity financing.

98-09 "The 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. (December 1997)*

This paper examines post-issue operating performance, risk characteristics, and analyst forecasts to more fully understand issuer motivations for, and investor reactions to, the issuance of convertible debt. The main finding is that announcements of convertible debt offerings convey information about a firm's future operating performance and future risk changes. Issuer systematic risk declines, while unsystematic risk increases significantly in the post-offer period. Short-term and long-term measures of operating performance deteriorate. The former effect is caused by industry conditions, while the latter is issuer-specific. Finally, we find that analysts consistently overestimate issuer near-term earnings and long-term earnings growth rates. The results provide support for risk-shifting and adverse selection motives for the use of convertible debt.

98-10 "Following the Leader: A Study of Individual Analysts Earnings Forecasts," by ***Craig M. Lewis,*** *Rick A. Cooper, and Theodore E. Day. (March 1998)*

98-11 "Regulating Corporate Criminal Sanctions: Evidence on the Effect of the U.S. Sentencing Guidelines," by Cindy R. Alexander, Jennifer Arlen, and ***Mark A. Cohen.*** *(March 20, 1998)*

This paper investigates the impact of the U.S. Sentencing Guidelines governing organizational defendants, which came into effect in

1991. Our empirical analysis focuses on publicly held firms convicted of crimes in Federal courts in 1988-1996, and analyzes both criminal fines and total sanctions (defined as nonfine criminal sanctions, civil sanctions and administrative sanctions). The empirical analysis has two parts. First we examine the extent to which criminal fines and total sanctions are higher under the Guidelines than they were previously. We find that both tend to be substantially higher than before, although the increase in criminal fines exceeds the increase in total sanctions. The second part investigates these observed penalty increases more closely. We are interested in whether increased sanctions are attributable to the mandatory constraint imposed by the Guidelines, or whether judges would have increased sanctions during this period even if not subjected to mandatory sentencing provisions. Our empirical results are consistent with the view that, while the Guidelines may have forced judges to impose higher fines than they would otherwise have imposed, the Guidelines did not constrain the total sanction. That is, substitution between mandatory criminal fines and other non-fine pecuniary sanctions appears to have occurred. We explore several alternative explanations for this somewhat surprising finding.

98-12 "Market Segmentation, Imperfect Information, and Closed-End Fund Discounts" by Tarun Chordia and Bhaskaran Swaminathan. (May 1997)

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 single price equilibrium where both securities trade at the same price and a discount equilibrium. 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.

*98-13 "Market Reform," by **William G. Christie**. (forthcoming in Handbook of Market Finance)*

*98-14 "Evening the Odds: Reform of the Nasdaq Stock Market," by **William G. Christie**. (forthcoming, in Contemporary Finance Digest)*

Beginning in January 1997, the Nasdaq Stock Market was transformed by the implementation of new order handling rules. This article describes the events that led to the adoption of these new rules, and the impact of these market reforms on investors' trading costs. The article also undertakes a survey of recent research that provides opposing views on the competitiveness of markets designed around dealer intermediaries.

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

In the past few years, significant amounts of international capital were raised by foreign firms through ADRs. Many of them were first-time issuers from emerging markets. However, very little is known about the issues related to the raising of international capital through first-time ADR issues, such as underpricing, announcement effects and issuance premiums (or discounts). This paper specifically addresses these issues. In this paper, I model the information asymmetries about these first-time ADR issuers both in the ADR market and in the home market. Investors in the ADR market learn about the evolution of a country factor through sequential issues of ADRs from the same country. Further, due to the stringent disclosure requirements associated with ADR issues, an announcement of a first-time ADR issue conveys 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. My main empirical results are based on an extensive data set of ADRs listed on NYSE, AMEX and NASDAQ. I find that first-time ADR issues from emerging markets are underpriced relative to the after-market traded price and the degree of such underpricing for ADR issues from the same country declines over time. Further, such issues elicit a positive announcement effect on the underlying stock prices in the home market. In addition, these issues are typically offered at a discount relative to the underlying home stock prices. Overall, the empirical results are consistent with the implications of the theoretical framework developed in this paper.

98-16 "Price Impact of New ADRs on ADRs: Evidence from Emerging Markets," by Amar Gande (February 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. 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.

98-17 "Bank Entry, Competition and the Market for Corporate Securities Underwriting," by Amar Gande, Manju Puri, and Anthony Saunders. (July 1998)

This paper examines the competitive effect of recent commercial bank entry into the market for corporate debt underwriting through Section 20 subsidiaries. In particular, we examine the impact of bank entry on underwriting spreads, ex-ante yield spreads of corporate debt issues, and market concentration. We find that underwriting spreads have declined significantly with bank entry, consistent with the market becoming more competitive. Additionally, we find that ex-ante yield spreads have also declined with bank entry, consistent with (i) bank entry resulting in improved information production and certification of underwritten securities by underwriters, and (ii) reduced underwriter spreads not being offset by higher yields (lower prices) for the issuer. Both effects are strongest among lower-credit rated and small-sized debt issues where banks have underwritten a relatively larger proportion of such issues. Further, post-bank entry we find no evidence of a difference in underwriter spreads of debt issues underwritten by banks relative to those underwritten by investment houses. Our results also indicate that bank entry has decreased market concentration. Overall, our results suggest that bank entry has had a favorable pro-competitive effect on underwriter spreads, ex-ante yield spreads and market concentration.

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

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"Understanding the Design of Convertible Debt," by Craig M. Lewis (with Richard J. Rogalski and James K. Seward), *Journal of Applied Corporate Finance,* Vol.11, No.1, Spring 1998.

"Agency Problems, Information Asymmetries and Convertible Debt Security Design," by Craig M. Lewis (with R. Rogalski and J. Seward), *Journal of Financial Intermediation,* 7, 1998.

"Exchange Rates, Domestic Prices, and Central Bank Actions: Recent U.S. Experience," by David C. Parsley (with Helen A. Popper), *Southern Economic Journal,* 64(4), 1998.

"Expiration-Day Effects of the All Ordinaries Share Price Index Futures: Empirical Evidence and Alternative Settlement Procedures," by Hans R. Stoll (with Robert E. Whaley), *Australian Journal of Management,* Vol.22, No.2, December 1997.