

## John P. Harding

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### Educational Background

Ph.D.	1994	Finance and Real Estate	University of California at Berkeley
MBA	1968	Mathematical Methods	University of Chicago
BS	1967	Industrial Engineering	Northwestern University

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### PROFESSIONAL EXPERIENCE:

8/96 to present **UNIVERSITY OF CONNECTICUT**

Professor--Finance Department

My responsibilities as a tenured full professor include research, teaching and service.

*Research:* My research program focuses on real estate related financing decisions. Within this broad area, my work comprises three major streams: 1) the determinants of house prices and house price dynamics; 2) mortgage and mortgage-backed security risk assessment, valuation and the related issues of prepayment, underwriting, credit risk assessment and default resolution and 3) the financing decisions of firms, primarily real estate related firms such as REITs.

The first two streams are closely related because mortgage risk and valuation depend critically on the underlying asset value process. My published research in these areas has its origins in my dissertation on the optimal refinancing strategy of mortgagors. While part of that work focused on the importance of looking at borrower's long-term strategy for financing, another part emphasized the important role of borrower mobility in mortgage-backed security valuation. I have pursued that topic in two additional papers—one in the *Journal of Fixed Income* and the second in *Real Estate Economics*. The latter paper “Movers and Shuckers: Interdependent Prepayment Decisions” was the first paper to separately model mortgage refinancing and terminations resulting from borrower mobility by combining transactions data with mortgage termination data. Previous mortgage literature tended to model the combination of those two hazards because it was difficult to separate them. This paper has triggered significant interest by other authors and generated more than thirty-five citations. In addition to work on residential mortgages, I, together with various co-authors, have undertaken extensive research on the risk and return characteristics and valuation of Commercial Mortgage Backed Securities (CMBS). Our early work on CMBS studied the relationship between initial tranche prices and the underlying mortgage characteristics. We found that markets were efficient in pricing price objective risk characteristics. We subsequently extended this work by collecting loan performance data on the individual loans underlying the CMBS describing their prepayment and default behavior. Using this additional data enabled my co-authors and I to explore the initial pricing issue in greater depth and to study the underwriting of commercial mortgages.

The recent turmoil in the mortgage and housing market has raised additional issues that I have explored. For example, one rationale for using public funds to prevent foreclosures is the conventional wisdom that there are significant negative externalities associated with foreclosure. In particular, an important question is whether having a foreclosure in a neighborhood reduces the value of all houses in the neighborhood. Using flawed methodology, many papers suggested that there was a very significant externality which in turn supported public efforts to reduce foreclosures. My co-authors (Eric Rosenblatt and Vincent Yao) and I used a different approach to estimating the spillover effect of foreclosure and found that the effect was much smaller than previously estimated and that the effect diminishes rapidly

with distance. Working with the same co-authors, we have also explored the question of the “foreclosure discount”. The public media have reported estimates that foreclosed homes sell at very substantial discounts to market value. Using a large data base comprising normal and foreclosure sales from several different MSAs, we carefully control for the inherent endogeneity in most earlier estimates of the foreclosure discount and provide evidence of a much smaller discount—one consistent with market efficiency.

A second stream of research has focused on the determinants of house prices. My first paper in this area focused on how maintenance influences individual house prices. Although maintenance is a major factor in determining house prices, it has not been extensively studied in the literature. Working with co-authors, I explored this issue in several papers beginning with “Do Owners Take Better Care of Their Housing than Renters (*Real Estate Economics*, 2000).

In that paper, we confirm the agency problem that mortgage debt creates and demonstrate that borrowers with high loan-to-value ratio loans spend less on maintenance than borrowers with a larger equity stake in the home. A second paper (“Estimation of Bargaining Effects in Hedonic Models: Evidence from the Housing Market”) studied the effect that agent bargaining power has on negotiated house prices. In this influential paper (more than sixty-five citations) my co-authors (Stuart Rosenthal and C.F. Sirmans) and I develop a technique to identify bargaining effects in a hedonic model and use the results to explain the puzzling seasonality observed in the time series of house prices.

In “Depreciation of Housing Capital and the Gains from Homeownership” (*Journal of Urban Economics*, 2007), Stuart Rosenthal, C.F. Sirmans and I develop a method to decompose the observed change in house prices into three components: general house price inflation, depreciation and the value added by homeowner maintenance. Our results show that frequently cited measures of house price inflation based on standard repeat sales models underestimate the true rate of house price inflation. We also show that depreciation of the value of housing is higher than most previous estimates that did not control for maintenance.

The third research stream focuses on firm financing decisions as opposed to individual financing decisions. REITs have often been used as a natural laboratory for studying issues in corporate finance and my coauthors and I have studied the financing choices of REITS and other regulated financial institutions. In “Explaining the Variation in REIT Capital Structure: The Role of Asset Liquidation Value”, my coauthors and I were able to provide evidence supporting the Shleifer and Vishny theory that asset liquidity influences a firm’s capital structure choices. This work on REIT capital structure has led to additional related papers looking into REITs’ use of share repurchase programs as part of their financing plan and the effects of corporate governance characteristics on capital structure. Another financing-related paper: “Does Liberalization Reduce Agency Costs? Evidence from the Indian Banking Sector” (with C. Ghosh & B.V. Phani published in the *Journal of Banking and Finance*, 2008) confirms that deregulation of firm ownership and the resulting increase in market monitoring can reduce agency costs associated with entrenched management. In another paper, my co-authors and I study the important question of capital regulation for financial institutions. In “The Optimal Capital Structure of Banks Under Deposit Insurance and Capital Requirements”, we identify the circumstances under which regulated financial institutions voluntarily maintain excess capital over that required by regulators and the importance of both firm franchise value and the regulator’s ability to strip shareholder equity to that result.

A recent addition to this line of research was an exploration of the market reaction to restatement announcements. In a paper recently accepted at the *Journal of Financial and Quantitative Analysis*, my co-authors (Katsiaryna Bardos and Joseph Golec) and I study the market’s reaction to misstated earnings during the “error period” prior to a formal restatement announcement. We find evidence that investors are misled by a firm’s mis-statement of earnings early in the error period, but when the mis-reporting persists, investors begin to anticipate the restatement and the stock’s performance lags that of the control group.

*Teaching:* I teach courses at the undergraduate, MBA and Ph.D. levels. My teaching specialties are closely related to my experience in the real estate finance industry and my ongoing research on mortgages, house price dynamics and real estate financing decisions. At all levels, I believe three skills are critical: an understanding of the basic principles upon which capital markets operate, a sound analytical approach to problem solving and risk management

and the ability to effectively communicate ideas. My overall goal is to challenge and help students to develop these three skills.

At the undergraduate level, I teach Real Estate Finance, Real Estate Principles and Financial Institutions and Markets. In each class, I challenge students with problem sets—most of which force them to think about problems not covered in the textbooks and that require the students to understand the analysis and not simply use “cookbook” solutions. To encourage group learning and teamwork, most problem sets are team projects that require students to collaborate and I generally require a group presentation on a term research project. I use a variety of methods to keep students interested in current market developments related to the course.

At the MBA level, I teach Real Estate Capital Markets. Although this course covers both the primary and secondary mortgage markets, more than half of the course is devoted to mortgage-backed securities and the use of the capital markets and asset-backed securities to raise capital for real estate. With the MBA classes, I believe group work is even more important because the students generally have real world experience themselves that they can share with their classmates. In the MBA course, I place additional emphasis on understanding the origins of our current market institutions and relating current market developments to the theory we are studying. Housing and mortgage market developments over the last few years have been especially conducive to fostering such discussions. In the 2010-2011 academic year, I will be teaching fixed income analysis in the University’s new Masters program in Financial Risk Management.

My Ph.D. seminar covers financial economics, an introduction to stochastic calculus and the application of stochastic calculus to advanced asset and derivative valuation. In this seminar, I place special emphasis on the skills needed to become a productive scholar. I have challenged students to develop critical reading skills to understand and question basic assumptions and to think about extensions and applications. I have served as advisor or co-advisor for fifteen Ph.D. students, including three from the Economics program.

*Service:* I participate in the activities of the Center for Real Estate including planning for and participating in the annual conferences sponsored by the Center, curriculum design and student counseling. I have served on the School of Business Administration’s facility planning, undergraduate curriculum, technology and Masters Programs committees and the finance department’s undergraduate curriculum committee and Ph.D. committee and merit advisory committee. I have been elected to two different terms on the Dean’s Advisory Committee that reviews promotion and tenure cases and advises the Dean. I advise an average of approximately twenty-five undergraduate finance and real estate majors and have served as associate advisor or co-advisor on fourteen Ph.D. committees.

5/95 to 7/96      **FEDERAL HOME LOAN MORTGAGE CORPORATION**  
Senior Vice President - Research and Planning

My responsibilities at Freddie Mac included directing the research efforts and the corporate planning process. At the time, Freddie Mac was a \$300 billion, stockholder-owned, corporation established by the United States Congress to create a continuous flow of funds to mortgage lenders. Freddie Mac purchases mortgages and issues debt and mortgage-backed securities. The research area was responsible for both basic and applied research related to pricing credit risk, portfolio management and capital planning. The corporate planning department was responsible for directing and coordinating the preparation of the annual corporate plan and budget and for analysis of special business and strategic issues.

8/89 to 5/95      **UNIVERSITY OF CALIFORNIA AT BERKELEY**  
Ph.D. Program in Finance and Real Estate

My dissertation, *Rational Mortgage Valuation Using Optimal Intertemporal Refinancing Strategies and Heterogeneous*

*Borrowers* extended previous work on rational mortgage valuation. I solved for the prepayment boundary using a dynamic programming algorithm that minimizes total borrower cost (interest plus transaction cost) over the borrower's remaining horizon. By including borrower heterogeneity in expected tenure, I overcome many of the problems traditionally associated with rational prepayment models.

While pursuing my degree, I served as teaching assistant for courses in Real Estate and Finance at both the graduate (MBA) and undergraduate levels. During the fall 1994 semester, I served as adjunct professor at Berkeley.

12/86 to 8/92     **H.F. HOLDINGS, INC.**  
Senior Vice President and Chief Financial Officer

H.F. Holdings was a savings and loan holding company owned by William E. Simon and a small group of investors. During the time I was CFO, H.F. Holdings and its affiliates acquired five savings and loan associations and one commercial bank with total assets of approximately \$10 billion. My responsibilities included directing the financial analysis related to the acquisitions, negotiations with FSLIC, preparation of business plans for the new acquisitions and overseeing the performance of the acquired institutions. In addition, I participated in the negotiation of the financing (both public and private) of the acquisitions and the sale of both public and private debt and equity issues. I worked full time for H.F. Holdings until 8/89 and then worked on a part time basis while attending the University of California.

10/85-9/86     **NATIONAL PERMANENT BANK, FSB**  
Senior Executive Vice President & Chief Financial Officer

I joined National Permanent as part of a regulator-directed change in management. I managed the finance, asset/liability management, investment, planning and data processing departments. During my tenure as CFO, the Bank's operating loss improved from a \$10 million loss in 1985 to a breakeven operation in 1986. I directed the implementation of new systems and procedures that assisted in the marketing of the bank to potential acquirers. In September 1986, Citibank acquired the bank from the FSLIC.

6/75-10/85     **FEDERAL NATIONAL MORTGAGE ASSOCIATION**  
Acting Chief Financial Officer and Senior Vice President for Planning and Financial Analysis

In my last year at Fannie Mae, I managed the finance, accounting, planning and administrative services departments. During that time I chaired both the Asset/Liability Committee and the Loan Pricing Committee.

I began my career in the planning department and steadily took on additional responsibilities in the areas of finance, mortgage-backed securities and financial accounting. Some of my accomplishments at Fannie Mae include:

- Developed state of the art models for evaluating mortgage products and asset/liability strategies.
- Implemented a new approach to asset/liability management that helped return the corporation to profitability while reducing interest rate risk.
- Created a corporate finance department that sold innovative securities and tapped new markets to save the corporation more than \$10 million per year in interest expense.

11/73-6/75     **BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM**  
Program Manager- Financial Planning and Control

Served as financial and quantitative analyst in the Bank Operations area.

1/69 - 11/73     **UNITED STATES STEEL RESEARCH**  
Senior Research Engineer

Served as internal consultant for U. S. Steel applying operations research techniques to lower the cost and improve the quality of steel manufacturing processes.

**Other Professional Experience:**

**Boards of Directors**

6/87-7/92

Honfed Bank, FSB  
Honolulu, Hawaii

9/88-5/91

Western Federal Savings and Loan  
Marina Del Rey, California

**Professional Designations:**

Chartered Financial Analyst

**Professional Societies:**

AFA, AREUEA, ARES, AEA, CFA Institute, ICFA

## **Publications:**

“Do Investors See Through Mistakes in Reported Earnings?” with Katsiaryna Salavei Bardos and Joseph Golec. *The Journal of Financial and Quantitative Analysis*. Forthcoming.

"The Contagion Effect of Foreclosed Properties" with Eric Rosenblatt and Vincent Yao. *The Journal of Urban Economics*, 2009. 66(3):164-178.

“Regulation of Large Financial Institutions: Lessons from Corporate Finance” with Stephen L. Ross. *Connecticut Insurance Law Journal*. 16 (1) 2009-2010.

“Entrenchment and Incentives: How Governance Influences REIT Capital Structure” with Chinmoy Ghosh, Erasmo Giambona and C.F. Sirmans. *The Journal of Real Estate Finance and Economics*. Forthcoming.

“The Role of Managerial Stock Option Programs in Governance: Evidence from REIT Stock Repurchases” with C. Ghosh, E. Giambona, O. Sezer and C.F. Sirmans; forthcoming, *Real Estate Economics*.

“The Effect of Liberalization of Foreign Investment Limits on Domestic Equity Prices: Evidence from the Indian Banking Sector” with Chinmoy Ghosh and B.V. Phani; *Journal of Banking and Finance* (March 2008) 32(3): 405-419.

“Explaining the Variation in REIT Capital Structure: The Role of Asset Liquidation Value” with E. Giambona and C.F. Sirmans. *Real Estate Economics* (2008) 30(1).

“The Role of Executive Stock Options in REIT Repurchases”, with C. Ghosh, O. Sezer and C.F. Sirmans. *Journal of Real Estate Research* (2008) 30(1).

“Depreciation of Housing Capital and the Gains from Homeownership” with S. Rosenthal and C.F. Sirmans. *Journal of Urban Economics* (March 2007) 61(2):193-217.

“Underwriting Commercial Mortgages: How Well Do Lenders Manage the Risks?” with G. Turnbull, R. Grovenstein, C.F. Sirmans and S. Thebpanya. *Journal of Housing Economics* (December 2005) 14(4).

"Pricing of Commercial Mortgage-Backed Securities: Evidence from Modern Conduit Issues," with C.F. Sirmans and Sansanee Thebpanya. *Journal of Fixed Income* 14(1) (Summer 2004); 69-87.

“Investment Characteristics of Low- and Moderate-Income Mortgage Loans,” with G. Goldberg. *Journal of Housing Economics*. 51(3) (September 2003): 151-180.

"Estimating Bargaining Effects in Hedonic Models: Evidence from the Housing Markets" with J. Knight and C. F. Sirmans. *Real Estate Economics*. (Winter 2003) 31(4): 601-622.

“Estimating Bargaining Power in Markets for Heterogeneous Products”, with C. F. Sirmans and Stuart S. Rosenthal. *The Review of Economics and Statistics* (February, 2003). 85(1): 178-188.

“Renegotiation of Troubled Debt: The Choice between Discounted Payoff and Maturity Extension” with C. F. Sirmans. 2002. *Real Estate Economics*. v30, n3 (September 2002): 475-503.

"Movers and Shuckers: Interdependent Prepayment Decisions" with J. Clapp, G. Goldberg and M. LaCour-Little. 2001. *Real Estate Economics*. v29, n3 (September 2001): 411-450.

"Mortgage Valuation with Optimal Intertemporal Refinancing Strategies." 2000. *The Journal of Housing Economics*, v9, n4 (December 2000): 233-266.

"Deficiency Judgments and Borrower Maintenance: Theory and Evidence" with C. F. Sirmans and T. Miceli. 2000. *The Journal of Housing Economics* v9, n4 (December 2000): 267-285.

"Do Owners Take Better Care of Their Housing than Renters?" with T. Miceli and C.F. Sirmans. 2000. *Real Estate Economics* v28, n4 (December 2000): 663-681.

"Expected Mobility: Part of the Prepayment Puzzle" with J. Clapp and M. LaCour-Little. 2000. *The Journal of Fixed Income*, v10, n1 (June 2000): 68-78.

"A Closed Form Formula for Valuing Mortgages"; 1999. with P. Collin Dufresne. *The Journal of Real Estate Finance and Economics*. 19(2):133-146.

"Estimating Borrower Mobility from Observed Prepayments." 1997. *Real Estate Economics*. v25, n3 (Fall 1997):347-371.

"Commercial Mortgage-Backed Securities: An Introduction for Professional Investors." with C. F. Sirmans. *Real Estate Finance*. v14, n1 (Spring 1997): 43-51.

"Research on CMBS -- Is the Past Prologue to the Future?" *Real Estate Finance*. v24, n4 (Winter 1998).

"Mortgage Sales: An Investor Analysis." with T. Ronzetti. *Mortgage Banker*. v38, n12 (Sept 1978):31-34,43-46.

**Presentations:**

"Litigation Risk and Market Reaction to Restatements", WEAI 85th Annual Meetings, Western Economics Association International. (June 28, 2010 - June 30, 2010). Joint work with K. Bardos and J. Golec.

"Foreclosure Discount: Myth or Reality?", 2010 Allied Social Sciences Meetings, American Real Estate and Urban Economics Association. (January 4, 2010 - January 6, 2010).Joint work with E. Rosenblatt and V. Yao.

"Do investors see through mistakes in reported earnings?", Southern Finance Association Annual Meeting, Southern Finance Association. (November 19, 2009 - November 21, 2009). Joint work with K. Bardos and J. Golec.

"Do investors see through mistakes in reported earnings?", Financial Management Association Annual Meetings, Financial Management Association. (October 21, 2009 - October 24, 2009). Joint work with K. Bardos and J. Golec.

"Do investors see through mistakes in reported earnings?" (July 24, 2009 - July 27, 2009). Joint work with K. Bardos and J. Golec.

"The Contagion Effect of Foreclosed Properties" AREUEA Annual Meeting, January, 2009. Joint work with K. Bardos and J. Golec.

"The Contagion Effect of Foreclosed Properties" Homer Hoyt Institute, January, 2009. Joint work with E. Rosenblatt and V. Yao.

"Depreciation of Housing Capital and the Gains from Homeownership" (joint work with S. Rosenthal and C.F. Sirmans) at Real Estate Seminar, Massachusetts Institute of Technology. April, 2007 and Fannie Mae, September, 2007.

"The Effect of Liberalization of Foreign Investment Limits on Domestic Equity Prices: Evidence from the Indian Banking Sector" (joint work with Chinmoy Ghosh and B.V. Phani) Eastern Finance Association, March, 2007

"The Optimal Capital Structure of Banks under Deposit Insurance and Capital Requirements" (joint work with Xiaozhong Liang and Stephen Ross), University of California at Berkeley, October, 2006.

"Introduction to Commercial Mortgages" at the quarterly meeting of the Connecticut Society of Mortgage Brokers. April 2005.

"Depreciation of Housing Capital and the Gains from Homeownership" (joint work with S. Rosenthal and C.F. Sirmans) at the Weimer School of Advanced Real Estate Studies. January 2005.

"Real Options with Depreciating Assets" (joint work with J. Clapp) at the ASSA Meetings, January, 2005.

"Allocation of Borrowers across Depository and Non-Depository Institutions: Effect of Proximity on Access to Banking Services" (joint work with AKM R. Hossain and Stephen L. Ross) at the ASSA Meetings, January 2005.

"Is My Home Worth What I Think?" (joint work with S. Rosenthal and C.F. Sirmans) at the ASSA Meetings, January 2004.

"Estimating Bargaining Power in Markets for Heterogeneous Goods" (joint work with S. Rosenthal and C.F. Sirmans) at the University of California at Berkeley; March 2001.

"Estimating Bargaining Power in Markets for Heterogeneous Goods" (joint work with S. Rosenthal and C.F. Sirmans) at the ASSA meetings; January 2000.

"Movers and Shuckers: Interdependent Prepayment Decisions" (joint work with J. Clapp and M. LaCour-Little) at the ASSA meetings, January 2000.

"Renegotiation of Troubled Debt: The Choice between Discounted Payoff and Maturity Extension" at the George Washington University, December 1999.

“The Option to Renegotiate Maturity” at the Weimer School for Advanced Studies in Real Estate and Land Economics. May 1999.

“Movers & Shuckers: Interdependent Prepayment Decisions” at the AREUEA Mid Year Meetings. May 1999.

“The Option to Renegotiate Maturity” at Annual AREUEA meetings in New York. January 1999.

“A Closed Form Formula for Valuing Mortgages.” with P. C. Dufresne at the AREUEA Meeting in New Orleans; January 1997.

"Rational Mortgage Valuation Using Optimal Intertemporal Refinancing Strategies and Heterogeneous Borrowers" at the AFA Meetings in Washington, D.C.; January 1995.

### **Working Papers**

“Litigation Risk and Market Reaction to Restatements” with K. Bardos and J. Golec.

“Foreclosure Discount: Myth or Reality? With E. Rosenblatt and V. Yao. (Under review at the *Journal of Urban Economics*)

“The Optimal Capital Structure of Banks Under Deposit Insurance and Capital Requirements” with Xiaozhong Liang and Stephen Ross. Revise and resubmit from *The Journal of Banking and Finance*.

“The Option to Redevelop: A Case Study of Waltham Massachusetts.” With R. Peiser. (Revise and resubmit from the *Journal of Real Estate Practice and Education*).

### **Advising of Ph.D. Students**

I have served on the dissertation committee for the following students who have completed their Ph.D. at the University of Connecticut.:

#### *Completed:*

Robert Campbell

Kathy Czymnik

Zhi-lan Feng

Ozcan Sezer

Sansanee Thebpanya

AKM Rezaul Hossain (Economics)

Xiaozhong Liang (Economics)

Rupendra Paliwal (Finance)

Ravi Mateti (Finance)

Katya Salavei (Finance)

#### *Currently serving on the dissertation committee for the following students*

Kevin McLaughlin (Finance)

**Awards**

Named “MBA Teacher of the Year for Real Estate” in April 2009. This honor is bestowed by the MBA Graduate Student Society.

Elected a Fellow of the Weimer School of Advanced Studies in Real Estate and Land Economics. January 2009

Named an Ackerman Scholar at the University of Connecticut School of Business 2003-2005.

Winner of 1999 Weimer School post doctoral award

Winner of the AREUEA Outstanding Dissertation Award for 1995.