



Introduction to the James Berkovec Memorial Issue

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Jim Berkovec's interest in applied economics spanned a broad subject range. His work reflected a keen ability to address timely and significant issues of public policy via the application of cutting-edge econometric methods and data. Some of his earliest research on energy and transportation economics was motivated in part by the late-1970s spike in energy costs and the challenge of delivering cost-effective travel. His early research interests covered fuel-efficient vehicles and residential energy demand (such as for heating and appliances) and culminated in his dissertation on the automobile market. His early peer-reviewed publications emanated from that work and subsequently evolved into an interest in the effects of macro-economic fluctuations on housing consumption and investment. While in the Division of Research and Statistics of the Board of Governors of the Federal Reserve System, his research moved toward labor market issues and the economics of failed banks, an important issue in the aftermath of the widespread failures of banks and savings-institutions during the late 1980s and early 1990s. By the early 1990s, he also began to work on issues surrounding racial discrimination in mortgage lending and published a series of influential papers on that topic. Further, it was through that work that Jim became a recognized expert in empirical methods of mortgage performance, notably including models of mortgage default and prepayment. Jim further deepened his expertise in



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housing and mortgages after joining Freddie Mac in 1994. At Freddie Mac, Jim took on ever more senior roles associated with assessment of loan performance. He also was active in research and in the larger profession and published an ongoing series of papers on FHA-insured loan performance, mortgage-loan discrimination, underserved borrowers and neighborhoods, coverage of the Home Mortgage Disclosure Act (HMDA), estimates of life-time homeownership rates, and determinants of home sales and single-family loan-product choice.

Jim conducted himself in a congenial and professional manner and was held in high regard by his colleagues and co-workers. He was known for his quick mind, sly smile, warmth of personality, and quiet wit. Jim was much appreciated by the broad array of colleagues with whom he co-authored papers and remained in close communication over the years. He also was broadly recognized and widely appreciated in the economics profession for the high quality of his research work. Jim's passion also carried over to interests outside of economics. One of his passions that he pursued for a long time, prior to graduate school and with family and friends, was bicycling, whether an afternoon outing or a multi-day, long-distance trek. Sadly, it was during a beautiful, sunny June day while on an afternoon bike excursion that Jim passed away from injuries related to a biking accident.

Jim's published papers provide some measure of his impact on the economics profession. In addition, Jim worked on a variety of pressing mortgage market issues at Freddie Mac that remain proprietary. The papers in this issue reflect the many cross-currents and breadth of Jim's research interests in real estate economics, especially for applied research with current policy implications.

We are pleased to publish Jim's final paper in this volume. This paper is co-authored with Yan Chang and Douglas McManus and is titled "Alternative Lending Channels and the Crisis in U.S. Housing Markets." The paper is highly relevant to the current policy debate as it explores the degree to which alternative mortgage-funding channels gave rise to the recent boom and bust in U.S. housing markets. Building on previous research that focused on subprime and Alt-A lending, the authors' approach finds that the large volume of loan originations with interest-only or negative amortization features was important in explanation of the housing bubble. This result suggests that research on the housing market bubble should focus on the impacts of loan-contract attributes rather than loan channel.

Among the last projects that Jim was involved with before his untimely passing was the Net Present Value (NPV) model that serves as the backbone of the U.S. Treasury's Home Affordable Modification Program (HAMP). Jim led a

research effort at Freddie Mac that designed the initial default model that was implemented in an early version of the HAMP NPV model. The development of the NPV model required interagency coordination, as it included research and policy team members from the U.S. Treasury, the Federal Housing Finance Agency, Freddie Mac, Fannie Mae, the Federal Deposit Insurance Corporation, and other government agencies. “The Role of Cash-flow Valuation in Assessing HAMP Mortgage Modifications: Development and Early Performance of the HAMP NPV Model,” by Holden *et al.*, discusses the development of the HAMP NPV model, its purpose, and the policy objectives that dictated its structure and limitations. The spike in loan defaults that began in 2008 triggered the need for standardized tools to evaluate financially distressed borrowers as candidates for loan modifications. A key component of HAMP was the development of a standardized model to identify troubled loans that were value-enhancing candidates for payment-reducing modifications. The NPV model computes the difference between the estimated present discounted value of the cash flow for the loan after and prior to possible modification; if the NPV is positive, then the modification is economic-value enhancing. The paper describes the responsiveness of the model to key characteristics, such as loan-to-value and credit score, and provides new evidence on the relationship between HAMP modification performance and key borrower and loan characteristics.

Jim’s concern with lending policies and possible discriminatory or disparate impacts on protected groups dates back to research begun toward the end of his tenure at the Federal Reserve Board. The widespread use of credit scoring in the underwriting and pricing of mortgage and consumer credit has raised concerns that the use of these scores may unfairly disadvantage certain borrowers by race/ethnicity, gender, age, or other protected characteristics. In “Does Credit Scoring Produce a Disparate Impact?,” Robert Avery, Kenneth Brevoort, and Glenn Canner use a unique data source that combines a nationally representative sample of credit bureau records with demographic information from the Social Security Administration and an outside vendor to examine the extent to which credit history scores may have such a disparate impact. While the authors find no evidence of disparate impact by race (or ethnicity) or gender, they do find evidence of limited disparate impact by age.

During his career at Freddie Mac, Jim became an expert in the area of mortgage costing. His colleagues Marsha Courchane and Peter Zorn explore loan costing in “Differential Access to and Pricing of Home Mortgages: 2004 through 2009.” The paper documents trends and drivers of the residential mortgage market during the recent period of boom and bust with specific focus on outcomes among minority and underserved households and communities. The analysis relies on a rich set of proprietary data that allow more expanded insights than can be obtained from HMDA alone. Research findings indicate dramatic

expansion and subsequent implosion in mortgage-credit access among those groups during the latter half of the 2000s. The authors find that the reduction in credit access was driven primarily by the changing credit mix of mortgage applicants, tighter credit standards, and the substitution of the FHA for subprime lenders as the dominant mode of non-prime originations. Additional findings during the study timeframe were that underserved and minority borrowers consistently paid higher prices for their mortgages; however, the extent of this differential varied considerably over time and across groups.

In “Mortgage Default and Prepayment Risks among Moderate and Low Income Households,” authors Roberto Quercia, Anthony Pennington-Cross, and Chao Yue Tian utilize a unique sample of community reinvestment loans to study the mortgage termination propensities. In the analysis, outcomes are compared among very low-income, low-income and moderate-income households. The authors find that very low income was associated with higher default and lower prepayment probabilities. In addition, the researchers show how classic termination determinants, including credit scores, the amount of equity in the home, and local labor market conditions vary across income classes and default and prepayment outcomes.

The volume also includes a paper on strategic default, a key area of Jim’s academic and professional work in the wake of the housing and mortgage crisis. In “Fear, Shame, and Guilt: Economic and Behavioral Motivations for Strategic Default,” Michael Seiler, Vicky Seiler, Mark Lane, and David Harrison examine underwater homeowners to identify why some decide to strategically default while others do not. Key drivers of the strategic default decision include the homeowner’s expectation of future real estate price movements, frustration with the lender, moral evaluation of the decision to strategically default, loan knowledge, political ideology, gender, income and age. While the authors also find that realized shame and guilt are consistent with *ex ante* expectations, the financial backlash experienced by strategic defaulters is less than anticipated, causing some strategic defaulters not to regret their actions. State-specific bankruptcy exemption levels and real estate laws only marginally explain the decision to strategically default, perhaps because the decision to walk away from a mortgage is emotional, and also because the implementation of these laws is uncertain and confusing to distressed borrowers.

Finally, Jim’s broad research interests covered existing-home sales models and house-value determination within a general equilibrium framework. Yongheng Deng, Stuart Gabriel, Kiyohiko Nishimura, and Diehang Zheng pick up on these research themes in “Optimal Pricing Strategy with Price Dispersion: New Evidence from the Tokyo Housing Market.” The authors adopt a multistage search model, in which the home seller’s reservation price is determined by his/her

opportunity cost, search cost, discount rate, and market parameters including the anticipated offer arrival rate and the offer price distribution. The optimal asking price is chosen so as to maximize the return from search. Theoretical results indicate that a greater dispersion in offer prices leads to higher reservation and optimal asking prices, which in turn result in a higher expected transaction price. Under the assumption that offer prices are normally distributed, a higher dispersion of offer prices also reduces time on the market for overpriced properties. A unique dataset from the Tokyo condominium re-sale market enables the authors to test those modeled hypotheses. Empirical results indicate that the standard deviation of transaction prices for each submarket, a proxy of offer price dispersion, is an important determinant of both pricing strategy and pricing outcomes.

Jim Berkovec made the world a better place. He worked on issues that mattered and was a wonderful friend and colleague. We remember Jim fondly and miss him greatly. May his memory be an inspiration to us all.

James A. Berkovec Memorial Fund

Jim's family has established a scholarship fund to support graduate economics students at MIT. Donations in memory of Jim can be made to MIT for the James A. Berkovec Memorial Fund. Checks should be payable to MIT. The following, reprinted from MIT's *Technology Review*, July/August 2011, contains additional information and background:

Jim Berkovec's son James died in a bicycle accident in 2009 at age 52. Now, he and his wife, Doris, have established the James A. Berkovec Memorial Fund to support a graduate fellowship in the Department of Economics.

"Jim found the people and the atmosphere at MIT stimulating and challenging," his father says. "He really thrived here and made a lot of friends for life."

When his son died, Berkovec says, two of his MIT friends and fraternity brothers suggested that a memorial fund be established in his name. At first Berkovec thought it was a "nice" idea, but the more he heard friends' stories of his son's success at MIT, the more he thought it was a "great" idea.

James A. Berkovec earned a bachelor's degree from MIT in 1977 in civil and environmental engineering, specializing in transportation engineering. After a stint as an analyst with Cambridge Systematics, he returned to MIT to earn a PhD in economics in 1984. For four years, he was an assistant professor of economics at the University of Virginia; then he worked at

the Federal Housing Administration in Washington, D.C. He later became a staff economist at the Federal Reserve, and in 1994 he joined Freddie Mac, where as a vice president he managed a staff responsible for economic modeling. He lived in Maryland and had three children.

After his death, Berkovec's parents chose to establish a fellowship at MIT as a way to honor their son's memory. "This enhancement of MIT's highly regarded PhD program in economics will increase the attractiveness of the MIT program, making it better able to attract the best students," Berkovec says. "We hope that this will benefit MIT and society as a whole, making the fellowship an appropriate legacy for James A. Berkovec."

For giving information, contact Rob Scott: 617-253-3394; rscott@mit.edu. Or visit giving.mit.edu.

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