Thomas G. Thibodeau, Ph.D. Global Real Estate Capital Markets Professor Academic Director, University of Colorado Real Estate Center

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Fax: 303.492.5507 Married to Karen, 2 children: email: tom.thibodeau@colorado.edu Paul (d.o.b.: 4/20/83)

Mark (d.o.b.: 12/1/87)

DEGREES:

Ph.D. Stony Brook University, 1980 (Economics)
M.S. Stony Brook University, 1979 (Statistics)
M.A. Stony Brook University, 1976 (Economics)

B.S. University of Hartford, 1975 (Mathematics - Management Science)

PROFESSIONAL EXPERIENCE:

Global Real Estate Capital Markets Professor, University of Colorado-Boulder, 2004-Academic Director, University of Colorado Real Estate Center, 2004-

Chair, Finance Division, Leeds School of Business, University of Colorado-Boulder, 2009-2010

Managing Editor, Real Estate Economics, 2000-2006

Professor - Real Estate and Urban Land Economics, Folsom Fellow, Edwin L. Cox School of Business, SMU, 1999-2004

Visiting Professor of Real Estate - Real Estate Department, Wharton School of Business, University of Pennsylvania, 1998-1999

Visiting Scholar - Federal Reserve Bank of Philadelphia, 1999

Professor - Real Estate and Urban Land Economics, Senior Research Fellow, Edwin L. Cox School of Business, SMU, 1997-1999

Professor - Real Estate and Urban Land Economics, Marilyn and Leo F. Corrigan, Jr. Endowment, Edwin L. Cox School of Business, SMU, 1994-1997

Associate Professor of Real Estate and Urban Land Economics, Marilyn and Leo F. Corrigan, Jr. Endowment, SMU, 1992

Associate Professor - Real Estate and Urban Land Economics, SMU, 1989-1994

Assistant Professor - Real Estate and Urban Land Economics, SMU, 1983-1989

Research Associate I - The Urban Institute, 1979-1983

Research Assistant - SUNY at Stony Brook, 1976-1979

Teaching Assistant - SUNY at Stony Brook, 1975-1978

HONORS AND AWARDS:

Leeds School of Business William H. Baughn Service Award for Faculty

NAIOP Distinguished Fellow Award, 2009-2016

American Real Estate and Urban Economics Association George Bloom Award, 2008

Leeds School of Business Outstanding Research Faculty Award, 2008

President of the American Real Estate and Urban Economics Association (AREUEA), 2001.

Golden Key Teaching Award, Fall 2000.

Co-Editor, Real Estate Economics, 2000-2006

Elected Second Vice President of AREUEA, Fall 1998.

Board of Directors - AREUEA, 1996-2005

Fellow, Homer Hoyt Advanced Studies Institute, 1998-

Citizen Ambassador Program's Business and Comparative Economics Delegation to Russia and the Ukraine, 1992

Editorial Board - Real Estate Economics, 1987-1988; 1993-

Editorial Board - Journal of Real Estate Finance and Economics, 1991-

Editorial Board - Journal of Housing Research, 1996-

21st Edition of Who's Who in the South and Southwest

Marilyn and Leo F. Corrigan, Jr. Faculty Research Fellowship, 1991-1992

Edwin L. Cox School of Business Research Excellence Award, 1986

Nominated for ELCSB Research Excellence Award, 1985, 1986, 1987

The Homer Hoyt Institute Post Doctoral Award, 1985

Society of Real Estate Appraisers Young Advisory Council, 1985-1987

B.S. Cum Laude, University of Hartford, 1975

National Honor Society, 1971

PROFESSIONAL AFFILIATIONS:

American Real Estate and Urban Economics Association American Economic Association Beta Gamma Sigma

FIELDS OF INTEREST:

Measuring and modeling variation in house prices Analyzing real estate investment returns

PUBLICATIONS:

- "Interest Rates and Investment: Evidence from Commercial Real Estate," accepted for publication in *Journal of Real Estate Finance and Economics* (with Liang Peng).
- "Risk and Returns of Income Producing Properties: Core vs. Non-core," accepted for publication in *Real Estate Economics* (with Jianhua Gang and Liang Peng).
- "Idiosyncratic Risk of House Prices: Evidence from 26 Million Home Sales," 2017. *Real Estate Economics* (with Liang Peng) 45(2):340-375. DOI: 10.1111/1540-6229.12136
- "Risk Segmentation of American Homes: Evidence from Denver," 2013. *Real Estate Economics* 41(3): 569-599 (with Liang Peng).
- "Financing Residential Development with Special Districts," 2013. *Real Estate Economics* 41(1):131-163 (with Stephen Billings).
- "Housing Bubbles," 2012. *The Encyclopedia of Housing*, 2nd *Edition*. Andrew T. Carswell, ed. SAGE Publications, Inc. Los Angeles, CA. Pp. 339-342.
- "Government Interference and Market Efficiency: Evidence from the Land Market in China," 2012. *Journal of Real Estate Finance and Economics* 45(4):919-938 (with Liang Peng)
- "Intrametropolitan Decentralization: Is Government Structure Capitalized in Residential Property Values," 2011. *Journal of Real Estate Finance and Economics* 42:416-450 (with Stephen Billings)
- "Evolution of the American Real Estate and Urban Economics Association," 2009. *Real Estate Economics* 37(4):559-598 (with Patric H. Hendershott and Halbert C. Smith).
- "Where Are the Speculative Bubbles in US Housing Markets," 2008. *Journal of Housing Economics* 17(2):117-137 (with Allen Goodman).
- "The Spatial Proximity of Metropolitan Area Housing Submarkets," 2007. *Real Estate Economics* 35(2):209-232 (with Allen Goodman).
- "The Impact of Interest Rates and Employment on Nominal House Prices," 2005. *International Real Estate Review*, 8(1):26-42 (with N. Miller and M. Sklarz).
- "Have the GSE Affordable Housing Goals Increased the Supply of Mortgage Credit?," 2004. *Regional Science and Urban Economics*, 34(3):263-274 (with Brent W. Ambrose).
- "Housing Market Segmentation and Hedonic Prediction Accuracy," 2003. *Journal of Housing Economics* 12:181-201 (with Allen C. Goodman).
- "Marking Single-Family Property Values to Market," 2003. *Real Estate Economics* 31(1):1-22.

PUBLICATIONS (continued):

- "A New Spin on the Jumbo/Conforming Loan Rate Differential," 2001. *Journal of Real Estate Finance and Economics*, 23(3): 309-335 (with Brent Ambrose and Richard Buttimer, Jr.).
- "Anisotropic Autocorrelation in House Prices," 2001. *Journal of Real Estate Finance and Economics*, 23(1): 5-30 (with Kevin Gillen and Susan Wachter).
- "Spatial Autoregression Techniques for Real Estate Data," 1999. *Journal of Real Estate Literature* 7:79-95 (with Robin Dubin and R. Kelley Pace).
- "Housing Market Segmentation," 1998. *Journal of Housing Economics* 7:121-143 (with Allen C. Goodman).
- "Analysis of Spatial Autocorrelation in House Prices," 1998. *Journal of Real Estate Finance and Economics* 17(1):61-85 (with Sabyasachi Basu).
- "Dwelling Age Heteroskedasticity in Repeat Sales House Price Equations," 1998. *Real Estate Economics* 26(1):149-169 (with Allen C. Goodman).
- "House Price Indices," 1997. *Journal of Real Estate Finance and Economics*, editor, 14(1,2).
- "Dwelling Age Heteroskedasticity in Hedonic House Price Equations: An Extension," 1997. *Journal of Housing Research* 8(2):299-317 (with Allen Goodman).
- "Regression Analysis: A Cost Effective Approach for the Valuation of Commercial Property Portfolios," 1996. *Real Estate Finance* 12(4):20-28 (with Stephen T. Crosson and Charles G. Dannis).
- "Age-Related Heteroskedasticity in Hedonic House Price Equations," 1995. *Journal of Housing Research*, 6(1): 25-42 (with Allen C. Goodman).
- "House Price Indices from the 1984-1992 MSA American Housing Surveys," 1995. *Journal of Housing Research*, 6(3):439-481.
- "Some Additional Evidence on the Performance of Commingled Real Estate Investment Funds: 1972-1991," 1992. *Journal of Real Estate Research*, 7(4):433-488 (with W. B. Brueggeman and A. H. Chen).
- <u>Residential Real Estate Prices: 1974-1983</u>, 1992. Blackstone Books: Studies in Urban and Resource Economics.
- "The Relationship Between Median and Constant Quality House Prices: Implications for Setting FHA Loan Limits," 1990. *AREUEA Journal*, 18(3):323-334 (with Patric Hendershott).

PUBLICATIONS (continued):

"Tieing FHA Loan Limits to Median House Prices: A Policy to Channel FHA Credit to Higher Income Households," 1990. *Housing Policy Debate*, 1(1):79-86 (with Patric Hendershott).

"Estimating the Effect of High Rise Office Buildings on Residential Property Values," 1990. *Land Economics*, 66(4):402-408.

"Modeling Conventional Residential Mortgage Refinancing," 1989. *Journal of Real Estate Finance and Economics* 2(4):285-300 (with S. Michael Giliberto).

"Housing Price Indexes from the 1974-1983 SMSA Annual Housing Surveys," 1989. *AREUEA Journal*, 17(1):100-117.

"Filtering and Housing Markets: An Empirical Analysis," 1988. <u>Journal of Urban Economics</u>, 23(1):21-40 (with John C. Weicher).

"Microeconomic Estimates of Housing Depreciation," 1987. *Land Economics*, 63(4):372-385 (with Stephen Malpezzi and Larry Ozanne).

"Real Estate Returns and Market Responses to the 1986 Tax Reform Act," 1987. *Real Estate Review*, 17(1):69-75 (with William B. Brueggeman).

"Using Multiple Regression Analysis to Determine the Accuracy of Mass Appraisals," 1987. *The Property Tax Journal*, 6(2):119-141 (with Kerry D. Vandell).

"Tax Reform's Assault on Rental Housing: Measuring the Impact," 1986. *Real Estate Review*, 15(4):38-45 (with William B. Brueggeman).

"Estimation of Mortgage Defaults Using Disaggregate Loan History Data," 1985. *AREUEA Journal*, 13(3):292-316 (with Kerry D. Vandell).

"Real Estate Investment Funds: Performance and Portfolio Considerations," 1984. *AREUEA Journal*, 12(3):333-354 (with W. B. Brueggeman and A. H. Chen).

<u>The Elderly and Urban Housing</u>, The Urban Institute Press, Washington, D.C., 1983 (with James P. Zais).

"Explaining Metropolitan Housing Price Differences," 1983. *Journal of Urban Economics*, 13(1):51-66 (with Larry Ozanne).

RESEARCH PAPERS:

"Interest Rates and Investment: Evidence from Commercial Real Estate," August 2017 (with Liang Peng). Under revision.

"Interest Rate and Investment under Uncertainty: Evidence from Commercial Real Estate Capital Expenditures," 2014 (with Liang Peng)

RESEARCH PAPERS (continued):

Do Lower Interest Rates Reduce Investment? Evidence from Micro-level Data 2015 (with Liang Peng)

"The Effect of Airport Closure on Housing Prices," 2013 (with Chen Huo and Ron Throupe). Revise and resubmit at *Journal of Real Estate Finance and Economics*

"Beijing's Land Use Reforms," 2007 (with Wenbin Li and Ying Xaio)

"The Effect of Preservation of Open Space on Housing Markets in Mountain Resort Communities: Evidence from Summit County Colorado," 2005 (with Christopher R. Cunningham).

"Inter-City Competition for Retail Trade: Can a TIF Generate Incremental Tax Receipts?," 2004 (with Allan T. Ingraham and Hal J. Singer)

"Forecasting House Prices," 2003 (with Norm Miller and Mike Sklarz).

"Nonstationary Spatial House Price Models" 2002 (with Deepak Agarwal, Alan E. Gelfand and C.F. Sirmans).

"GSE Purchases and the Market for Low-Income Mortgage Credit" 2002 (with Brent Ambrose).

"Single-Family Housing Turnover and Submarket Housing Price Appreciation" 2000 (with Dapeng Hu).

"Investment Performance and Benefits From Global Diversification of Real Estate Equity Securities: A Preliminary Analysis," (with Professor William B. Brueggeman). The Center for Real Estate and Urban Land Economics Working Paper 97-2.

"Housing Assistance in Far North Dallas: New Construction vs. Housing Vouchers," a report prepared for Civil Action No. 3:85-CV-1210-R (North Dallas Homeowner Associations vs Dallas Housing Authority) October 23, 1996.

"Irving Affordable Housing Report," a report submitted to the City of Irving, TX in 1996.

"Methodological Issues in Measuring House Prices and Appreciation Rates," report submitted to Fannie Mae, Office of Housing Research, November 1995.

"Usage Requirements for Available Housing Data," report submitted to Fannie Mae, Office of Housing Research, December 1995.

"Are Homeowners Accurate Appraisers?: Additional Evidence," Folsom Institute for Development and Land Use Policy, Working Paper 91-1, June 1991.

"Explaining Inter-Metropolitan Variation in Real Housing Price Fluctuations," Folsom Institute for Development and Land Use Policy, Working Paper 88-3, March 1988.

RESEARCH PAPERS (continued):

"Measuring and Modeling Spatial Variation in Rates of Economic Depreciation for Residential Real Estate: A Preliminary Investigation," (with Stephen Malpezzi and Larry

Ozanne) Folsom Institute for Development and Land Use Policy, Occasional Paper 87-2, June 1987.

"Do Municipal Zoning Ordinances Influence Real Property Values?: A Literature Review and Suggested Research Design," Folsom Institute for Development and Land Use Policy, Occasional Paper 87-1, January 1987.

"Empirical Results: The Estimation of Neighborhood Ratios," Folsom Institute for Development and Land Use Policy, Working Paper 85-2, October 1985 (with Kerry D. Vandell).

"An Improved Methodology for the Estimation of Appraisal Biases," Folsom Institute for Development and Land Use Policy, Occasional Paper 85-2, July 1985 (with Kerry D. Vandell).

"The Performance of Commingled Real Estate Funds," March 1984 (with William B. Brueggeman and Andrew Chen).

"The Economic Feasibility of Alternative Utility-Sponsored Weatherization Programs in Maryland," Maryland Power Plant Siting Program, Annapolis, MD. May 1983 (with Robert Dubinsky).

"Analysis of Inconsistent Reporting in the National Annual Housing Survey," The Urban Institute, Working Paper 3252, April 1983.

"Explaining Variation Across SMSAs in Rental Housing Inflation Rates," The Urban Institute, Working Paper 3042-02, April 1982.

"Constructing Price Indexes for Housing Services from the Annual Housing Survey," The Urban Institute, Working Paper 3042-01, March 1982 (with Margery Turner).

"Modeling Alternative Housing Voucher Programs," The Urban Institute, Working Paper 3087-02, March 1982 (with Ann Bergsman and Gary Anderson).

"The Urban Institute's Housing Voucher Simulation Models: A User's Guide," The Urban Institute, Working Paper 3087-01, March 1982 (with Gary Anderson, Eric Simon and Anne Bergsman).

"Options for Funding Public Housing: Vouchers, The Fair Market Rent System, Upgrading Performance Funding," The Urban Institute, WP 3084-01, January 1982 (with Ray Struyk).

RESEARCH PAPERS (continued):

"Rent Regulations and the Market for Rental Housing Services," The Urban Institute, Working Paper 3909-01 (prepared for the 1981 President's Commission on Housing), November 1981.

"Improving the Annual Housing Survey," The Urban Institute, Working Paper 1543, August 1981.

"Deconcentration in Housing Voucher Programs: The Case for a Practical Demonstration," The Urban Institute, Working Paper 1481-1, June 1981 (with James P. Zais).

"FMRs for Existing Dwellings: An Evaluation Through Hedonic Index Methods," The Urban Institute, Working Paper 1367-4, April 1981 (with Larry Ozanne)

"Constructing a Rent Index from the Annual Housing Survey," The Urban Institute, Working Paper 1443, March 1981 (with Larry Ozanne).

"Estimating Regression Coefficients from Grouped Data When the Joint Frequencies are Unknown," Ph.D. Dissertation, SUNY at Stony Brook, April 1980.

"Characteristic Prices of Housing in 59 Metropolitan Areas," The Urban Institute, Working Paper 1367-1, February 1980 (with Larry Ozanne and Stephen Malpezzi).

"Market Effects and Housing Allowances: Demand Shifts and the Price of Housing," The Urban Institute, Working Paper 249-37, January 1980 (with Larry Ozanne).

PROFESSIONAL SERVICE:

AREUEA International Program Co-Chair 2003

AREUEA Membership Committee Chair 2001

AREUEA President, 2000

AREUEA Program Chair 1999-2000

AREUEA Board of Directors Nominating Committee 1996

AREUEA Development Committee 1988-1990

AREUEA Dissertation Awards Committee, 1987-1988, 1993-1995

JOURNAL ARTICLES/PROPOSALS REVIEWED FOR:

Real Estate Economics Journal of Econometrics

Decision Sciences Land Economics

Housing Policy Debate National Science Foundation

Journal of Housing Economics Urban Studies

Journal of Housing Research
Envrionment and Planning A
Review of Financial Studies

Southern Economic Journal
Journal of Real Estate Research
Journal of Regional Science

Journal of Real Estate Finance and Economics

UNIVERSITY SERVICE:

Chair, Leeds Building Committee, 2014-

Leeds School Personel Advisory Committee (LSPAC) 2012-

Leeds School Executive Committee, 2015--

Finance Division Chair 2009-2010

Leeds Research Awards Committee 2007

CU Standing Committee on Research Misconduct 2006-2009

Chair, Leeds Masters Curriculum and Policy Committee 2006-2007

Leeds Technology Committee 2004-2006

SMU Faculty Senate, 2003

SMU Economic Status of the Faculty, 2002-2003

SMU Computer Technology (ARCC), 2002-2003

SMU Search Committee for Women's Soccer Coach, 2003

SMU Division II Advisory Committee for Promotion to Associate Professor, 1997-1999

SMU Admissions Council, 1993-1995

SMU Council on General Education, 1992-1996

SMU Faculty Senate, 1987-1991

SMU Honorary Degrees Committee, 1990-1992

SMU Committee on Committees, 1988-1990 (Chairman for 1989-90)

SMU Computer Policy and Planning Committee, 1987-1990

SMU Nominating Committee, 1987-1988

Participated in the selection of SMU President's Scholars, 1986-

Bradfield Computer Center Research Computing User's Group, 1987-1989

Edwin L. Cox School of Business MBA Policy Executive Committee 1998-1999

Edwin L. Cox School of Business Personnel Committee, 1990-1991 and 1997-1999

Edwin L. Cox School of Business EMBA Policy Committee (Chair), 1997-1998

Edwin L. Cox School of Business Technology Committee (Chair), 1997-1998

Edwin L. Cox School of Business BBA Policy Committee (Chair), 1993-1994

Edwin L. Cox School of Business Collins Finance Chair Search Committee, 1991-1994

ELCSB Ann Cox Business Policy Chair Search Committee, 1991

Edwin L. Cox School of Business Planning Committee, 1991-1992

Edwin L. Cox School of Business MBA Director Search Committee, 1990-1991

Edwin L. Cox School of Business Dean Search Committee, 1989

COURSES TAUGHT:

Real Estate Fundamentals, SMU BBA and MBA; CU BBA

Real Estate Finance, SMU BBA, CU MBA

Real Estate Markets and Valuation, SMU BBA and MBA

Real Estate Economics, SMU MBA; CU MBA

Real Estate Risk Management, Graduate CU

Corporate Finance, SMU Executive MBA

Managerial Economics, SMU MBA, PMBA

Commercial Mortgage Backed Securities, Wharton MBA

Real Estate Development, Wharton MBA

Macroeconomics, SMU Executive MBA

COURSES TAUGHT (continued):

Short Courses Taught

ARGUS DCF/Enterprise Certification, 2009-2016

Real Estate Economics

Central University of Economics and Finance, Beijing, 2007

ARCHON Group—Financial Analysts Program, 1997-2003

- 1. Introduction to Income Property Analysis
- 2. Real Estate Valuation
- 3. Real Estate Markets

Real Estate Finance Certificate Program, 1994-2003

- 1. Principles of Valuation
- **1.** Introduction to Income Property Analysis
- 2. Mortgage Backed Securities New Security Products,

Southwestern Graduate School of Banking, 1991

Real Estate Investment, Prentiss Properties Limited, Inc., 1990

CONSULTATION:

The Analysis Group 2015

City of Boulder, Colorado 2012

Technical Advisory Board, Zillow.com 2007-

Boulder Tomorrow and Boulder Area Realtors Association 2007

National Association of Industrial & Office Properties 2007

City of Arvada, Colorado 2007

Town of Greenwich Assessors Office 2004-2005

New Fairfield, CT Candlewood Isle Homeowners Association 2005-2007

Greenwich, CT Roundhill Homeowners Assocation 2003-2004

Fidelity National Information Solutions, Inc. 2002, 2003

Converium Reinsurance, 2002, 2003, 2004

IDM Corporation, 1999-2001

Fannie Mae, 1993-1995, 1997-1999

Zurich Reinsurance, 1999, 2001

The Urban Institute, Washington, D.C., 1983, 1998-2001

U.S. Government Accounting Office, 1995

U. S. Department of Housing and Urban Development, 1993, 1999

Dallas Housing Authority, 1991, 1993

ICF, Incorporated, 1990

Tomlin Properties, 1986

National Apartment Association, 1985-1986

Dallas Central Appraisal District, Dallas, Texas, 1985

The President's Commission on Housing, Washington, D.C., 1981