

RERI Sponsors

Sustaining Sponsor

Pension Real Estate Association

Sponsors

AEW Capital Management, LP

Association of Foreign Investors in
Real Estate

BlackRock Realty Advisors

Citi Property Investors

Cornerstone Real Estate Advisers, Inc.

Henderson Global Investors
(North America) Inc.

ING Clarion

International Council of Shopping Centers

INVESCO Realty Advisors

LaSalle Investment Management

National Association of Real Estate
Investment Trusts®

National Council of Real Estate

Investment Fiduciaries

National Multi Housing Council

Property & Portfolio Research

Prudential Real Estate Investors

REIS, Inc.

RREEF

Simon Property Group, Inc.

TIAA-CREF

Torto Wheaton Research

UBS Global Asset Management

Urban Land Institute

Deadline for receipt of expression of interest is:

December 10, 2007 5pm EST
Expression of Interest and
information requests should be
e-mailed to:

jim@prea.org

The Real Estate Research Institute
100 Pearl Street, 13th Floor
Hartford, CT 06103
Telephone: (860) 692-6341

Directed Research Request for Proposals Real Estate Research Institute

Development of New Findings and Techniques for Measuring Commercial Real Estate Investment Risk

The Real Estate Research Institute (RERI) seeks proposals for funding of research focused on the development of new approaches to measure and quantify risk in portfolios of private real estate assets. RERI is a non-profit organization created to stimulate high quality research on real estate investment and portfolio issues that will elevate the quality of real estate investment decision making.

Statement of the Research Problems

While real estate plays an important role in many institutional mixed-asset portfolios, it continues to face a credibility issue in the eyes of some investors because of concerns about performance measurement. Specifically, the precise measurement and quantification of the risk associated with private real estate has proven to be elusive. Because privately held properties trade infrequently, real estate's risk/return characteristics are traditionally measured using appraisal-based returns. Such measurements are believed to dampen real estate's observed volatility and to bias its correlations with other asset classes. In addition, real estate returns are persistent (i.e. correlated over time) which implies that standard deviation of returns is not necessarily a sufficient statistic for measuring total risk as it is in more efficient public markets. Moreover, and notwithstanding the recent introduction of NCREIF-based derivatives, most institutional investors assume some level of unsystematic risk in their (direct) real estate portfolios. Hence, there remains much work to be done in terms of understanding the potential impacts of liquidity and idiosyncratic risk in private real estate markets and the implications for pricing and real estate's optimal role in mixed asset portfolios.

These problems create a two-fold research agenda. First, while the academic community has developed myriad approaches to improve the measurement of real estate's true volatility and correlation with other asset classes, including so-called "unsmoothing" techniques (broadly defined) as well as latent variable and transaction based approaches, these have not been received with wide acceptance in the practitioner community. Perhaps unfairly, unsmoothing techniques have been criticized for being *ad hoc*, too mathematically complex, assuming overly rigorous data structure, *etc.*, while transaction-based indices have been viewed with skepticism due to their reliance on complicated statistical techniques. Consequently, this request for proposals (RFP) seeks an alternative approach that captures real estate's true volatility and correlation pattern without depending on complicated econometric models.

Second, because investors cannot purchase a pro-rata share of each property in the NCREIF index, investors cannot pursue a purely passive investment strategy – notwithstanding the aforementioned NCREIF derivatives. This introduces an element of unsystematic risk, attributable to the cross-sectional variations in real estate returns. Recent work in the academic finance area has begun to look closely at the interrelated roles of idiosyncratic risk, cross sectional dispersion of volatility and liquidity and the implications for asset pricing and asset class correlation statistics. While not closely examined in the academic real estate literature to date, the issues of cross-sectional and unsystematic risk may have more important implications for the quantification of private real estate risk compared to public stock markets (a list of select papers is included later in the RFP). A previous RERI directed research project advanced our understanding of real estate risk and return but did concomitantly examine risk particularly as reflected in the cross-sectional dispersion measurements used in the return analysis [Fisher, J. & W. Goetzman (2005) "Performance of Real Estate Portfolios" *Journal of Portfolio Management* Special Real Estate Issue.]

Board of Directors

Robert Smedley, Chairman Emeritus

Tony Ciochetti- President
MIT Center for Real Estate

Yonguo Liang- Treasurer & Secretary
Prudential Real Estate Investors

Brent Ambrose, *Penn State University*

Jeffrey Fisher, *Indiana University*

Sally Gordon, *Moody's Investor Service*

Crocker Liu, *Arizona State University*

Joseph Pagliari, *University of Chicago, Graduate School of Business*

Mark Roberts, *INVESCO Realty Advisors*

David Shulman, *Lehman Brothers, Inc. (retired)*

Advisory Board

Michael A. Anikeeff, *Johns Hopkins University*

Stephen R. Blank, *Urban Land Institute*

Stephen Brown, *Royal Institution of Chartered Surveyors*

Susanne Ethridge Cannon, *DePaul University*

Dennis Capozza, *University of Michigan*

Lijian Chen, *UBS Global Asset Management Global Real Estate*

Jim Clayton, *Pension Real Estate Association*

Jack Corgel, *Cornell University*

Steve Coyle, *Citi Property Investors*

Yongheng Deng, *University of Southern California*

Mark J. Eppli, *Marquette University*

Michael Grupe, *National Association of Real Estate Investment Trusts*

Hugh F. Kelly, *Real Estate Economics*

David Ling, *University of Florida*

Marc Louargand, *Saltash Partners LLC*

Simon Mallinson, *Investment Property Databank Ltd.*

Asieh Mansour, *RREEF*

Jack Nowakowski, *Commercial Mortgage Securities Association*

Mark Obrinsky, *National Multi Housing Council*

Steve Ott, *University of North Carolina Charlotte*

Martha Peyton, *TIAA-CREF*

Edward F. Pierzak, *Henderson Global Investors (North America) Inc.*

Douglas Poutasse, *National Council of Real Estate Investment Fiduciaries*

Jeanette I. Rice, *Verde Realty*

James Shilling, *DePaul University*

Jon Southard, *Torto Wheaton Research*

Larry Souza, *Charles Schwab Investment Management*

Raymond G. Torto, *Torto Wheaton Research*

RERI Directed Research Request for Proposals

Issues to be Addressed

RERI is seeking research proposals that address the issues outlined above from both theoretical and empirical perspectives. Consideration should be given to answering a significant number of, or all, the following research questions:

- Can new practical risk measures be developed for real estate from appraisal-based returns or otherwise that can be used to measure the diversification benefits of including real estate in a mixed-asset portfolio?
- What is the relationship between (and the relative characteristics of) the periodic cross-sectional risk of real estate returns (within real estate portfolios) and the traditional measures of risk that use the volatility over long holding periods?
- How large is the dispersion of cross-sectional volatility across single- and multiple-asset portfolios? To what degree is unsystematic risk independent across properties?
- What is the relationship between measures that examine, for example, the volatility of IRR-based returns (possibly, inflation- and/or vintage-adjusted) for sold properties and the traditional measures of risk that use appraisal-based returns over time?
- Can a formal model and empirical measurement of benchmark risk be developed that distinguishes between the discretionary active risk associated with deviating from the benchmark versus the unsystematic risk associated with the inability to buy the market? Should such a model include both types of risk as contributing to cross-sectional volatility in real estate returns among various real estate fund investment products?
- How quickly does the unsystematic risk dissipate as more properties are added to the portfolio? How should "concentration" risk (*i.e.*, a large percentage of a given portfolio is concentrated in one or a few properties) be considered?
- Are investors compensated for unsystematic risk (*i.e.* is it priced)? Should it be?
- How should the performance of investment managers be measured when their investment weights vary from the benchmark, either voluntarily in the case of a broadly diversified commingled account or are constrained to do so by the nature of their separate account?

Researchers are expected to work closely with the RERI board to produce applied, practical research that will be widely distributed to both academic and industry audiences.

Review Procedures and Important Dates

This is a two part process. Interested researchers are to submit an ***expression of interest*** by **5pm EST on Monday December 10, 2007**. Expressions of interest will be reviewed by the Directed Research Review Committee of the RERI Board of Directors. The Review Committee will decide which researchers (or research teams) will be asked to submit a more detailed proposal. Full research proposals must be submitted by **5pm on February 15, 2008**. The Committee reserves the right to waive the second round of the proposal process and decide to work directly with a researcher (or research team).

Funding

Funding of up to \$75,000 is available for research that aims to provide answers to as many of the above questions as possible. It is anticipated that 50% of the funding will be disbursed upfront upon acceptance of the proposal, and 50% upon completion of the research to the satisfaction of the RERI board as per the final agreement negotiated between the researcher and RERI.

Expression of Interest & Proposal Requirements

Expression of Interest Requirements

- 1) Concise single-spaced interest statement of no more than two pages that contains:
 - Research objective(s)
 - Initial thoughts on methodology and approach
 - Brief description of principal data sets and availability, including a plan for procuring third-party data in a timely manner, if the research will be relying on third-party data
 - Anticipated budget (RERI will not pay university overhead or equipment costs)
 - A summary of qualifications
- 2) Resumes of principal researchers showing experience and understanding of the research topic as evidenced by previous work experience, presentations, and/or publications in addition to addresses, day-time telephone numbers and e-mail addresses.

Please note:

- Only one submission per researcher or team of researchers may be submitted.
- Only emailed submissions will be accepted.

The deadline for receipt of submissions is 5pm EST December 10, 2007.

Research Proposal Requirements

Researchers or research teams who are asked to submit more detailed proposals will have to provide the following additional information:

- Detailed description of the methodology
- Research timetable
- Estimated budget showing the total cost of the project detailing specific costs including data.

***Researchers proposing to use data that are neither in hand nor readily available are advised to include in their proposals detailed descriptions of the data sources and timelines for acquisition.**

Additional Background: Cross-Sectional Dispersion & Idiosyncratic Risk

Background: Select List of References

Emerging finance literature that establish linkages between

- cross-sectional standard deviation (dispersion) and time-series correlation and volatility
- idiosyncratic risk and stock prices
- cross-section variation in liquidity, market-wide liquidity and stock prices

Ang, A., R. Hodrick, Y. Xing and X. Zhang (2007) "The Cross-Section of Volatility and Expected Returns," *The Journal of Finance*

A. Ang., J. Chenz and Y. Xing (2006) "Downside Risk" *Review of Financial Studies*.

Boehme, Rodney D., Danielsen, Bartley R., Kumar, Praveen and Sorescu, Sorin M. (2005), "Idiosyncratic Risk and the Cross-Section of Stock Returns: Merton (1987) Meets Miller (1977)" <http://ssrn.com/abstract=685703>

Fu, Fangjian (2005) "Idiosyncratic Risk and the Cross-Section of Expected Stock Returns," William E. Simon Graduate School of Business Administration working paper, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=676828

Spiegel, M. and X. Wang (2005) "Cross-sectional Variation in Stock Returns: Liquidity and Idiosyncratic Risk," Yale School of Management.

Goyal, A. and P. Santa-Clara (2003) "Idiosyncratic Risk Matters!" *The Journal of Finance*, Vol LVIII, No. 3, June

Solnik, B. and J. Roulet, (2000) "Dispersion as Cross-Sectional Correlation" *Financial Analysts Journal*, 56.

Recent Real Estate Specific Studies

Plazzi, A., W. Torous and R. Valkanov (2004) "The Cross-Sectional Dispersion of Commercial Real Estate Returns and Rent Growth: Time Variation and Economic Fluctuations," UCLA Working Paper, November.

Arvind Pai & David Geltner (2007) "Stocks Are From Mars, Real Estate Is From Venus: The Cross-Section of Long-Run Investment Performance," *Journal of Portfolio Management* Special Real Estate Issue.

About RERI

Contact Information

Submission Deadlines:

Expression of Interest
December 10, 2007 5pm EST

Proposal
February 15, 2008 5pm EST

Expressions of Interest,
proposals and information
requests should be
e-mailed to:

jim@prea.org

The Real Estate Research Institute
100 Pearl Street, 13th Floor
Hartford, CT 06103
Telephone: (860) 692-6341

RERI Directed Research Request for Proposals

Real Estate Research Institute

About the Institute

The Real Estate Research Institute (RERI) is a non-profit organization created to stimulate high-quality research on real estate investment performance and market fundamentals that will elevate the quality of real estate decision-making. Incorporated in 1987 as the NCREIF Research Institute, RERI began active program development in late 1988, and the first research grants were awarded the following year. The name of the organization was changed in 1992 to the Real Estate Research Institute in response to a broadening base of support. RERI's mission is to encourage research that applies academic theory and analytic techniques to real estate investment decision-making by:

- Establishing an agenda of key issues critical to understanding real estate markets, real estate investment characteristics and performance.
- Raising funds to support rigorous, objective and practical research on these key issues.
- Soliciting, evaluating and funding specific proposals for research from academics, industry and investment community practitioners.
- Communicating research results as broadly as possible.

Additional information can be found at www.reri.org

Expressions of interest, proposals and information requests should be
e-mailed to:

jim@prea.org

The Real Estate Research Institute
100 Pearl Street, 13th Floor
Hartford, CT 06103
USA
Telephone: (860) 692-6341