Estimating Market Values from Appraised Values

Without Assuming an Efficient Market

by

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August, 1992

The author would like to thank Evaluation Associates Inc., the National Association of Real Estate Investment Trusts, and the National Council of Real Estate Investment Fiduciaries for supplying data. The author appreciates the assistance and comments of Bonnie Roberts and Patric Hendershott. This research has been partially funded by the Real Estate Research Institute. The opinions expressed in this paper are those of the author, who is alone responsible for any mistakes.

Abstract

This paper presents an approach to recovering the "true" underlying market value returns from observable appraisal-based index returns, without pre-supposing or constraining the market value returns to be unpredictable or uncorrelated across time. A structural/behavioral model is developed relating observed index returns to the underlying market returns. The procedure presented here explicitly corrects for appraisal smoothing at the disaggregate level, as well as for the aggregate index construction effects of temporal aggregation and seasonality of reappraisals. This procedure is applied to the Russell-NCREIF and Evaluation Associates Index returns to generate estimated series of market values and market returns for unsecuritized commercial properties in the United States. These are then compared to those of securitized properties represented by "unlevering" the NAREIT Index.

The recovered unsecuritized market value returns show about twice the annual volatility of the unadjusted appraisal-based indices, and get rid of most, though not quite all, of the positive autocorrelation in the appraisal-based returns, suggesting that unsecuritized property returns may be more predictable than efficient market theory suggests. The historical market values of unsecuritized commercial properties appear to closely track those of securitized properties. However, the REIT values appear to be more "noisy" in the short run, and to lead the unsecuritized property values by about a year. The paper also briefly discusses the implications which the structural/behavioral model developed here holds for optimal appraiser behavior in a portfolio context as distinct from an individual property context.