

Inflation Uncertainty and Real Estate

Lingxiao Li and Timothy Riddiough

Department of Real Estate and Urban Land Economics, University of Wisconsin-Madison

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Executive Summary

Inflation as well as deflation risks (jointly referred to as *inflation uncertainty*) are prominent in the current economic environment, suggesting that investor demand will exist for assets that provide insurance against realized inflation shocks. We study the links between realized inflation and returns to firms that hold commercial real estate (listed equity REITs). We incorporate three different inflation forecasting models into our analysis in order to decompose the realized rate of inflation into expected and unexpected inflation. Using monthly data over a full sample period from 1996 to 2012, and in a variety of specifications, we do not find compelling evidence that real estate functions as any sort of effective inflation hedge. However, when we eliminate the crisis and post-crisis sample periods—time periods that can be characterized as highly unstable and out-of-equilibrium—and focus on the pre-crisis period going from January 1996 to March 2007, we find that REITs offer a robust hedge against inflation uncertainty. By this we mean that returns to REITs increase directly as a function of the magnitude of inflation shocks, regardless of whether the shocks are positive or negative. In documenting this relationship we identify a “missing asset pricing factor” for REITs, in that, using a traditional unconditional CAPM estimation, REITs generated an alpha of one to two percent per annum during the 1996-2007 time frame. When inflation uncertainty is incorporated into the asset pricing model, the positive alpha disappears and instead loads on the inflation uncertainty terms.

We further decompose the REITs’ equity return into nominal debt, land and building effects. We provide evidence that all three effects contribute to the inflation hedging characteristics of commercial property held by these publicly traded firms. The presence of nominal debt in the REIT capital structure reduces the inflation hedging sensitivity of the real estate asset, but it does not eliminate its hedging effectiveness. In fact, evidence indicates that the commercial real estate asset offers robust and effective protection against inflation uncertainty. In decomposing the real estate asset into land and building, we find that REITs which hold a significant proportion of their assets in “fortress locations” exhibit greater sensitivity of return to inflation shocks. This in turn suggests that land—especially land that is in short supply—is prominent in channeling inflation shocks into investor return. Finally, we analyze the building component to inflation hedging by stratifying firms by property type. Recognizing that the building component of commercial property value is due to lease-based cash flowing to the property owner, we find that building value responds differentially to realized inflation depending on the type of leases utilized by property owners. Apartment (short-term lease), office (long-term lease with CPI-adjustments) and retail (long-term lease with percentage rents) offer the best hedges against inflation risk. Interestingly, hotel property, for which lease rates are effectively determined on a daily basis, are found to offer no inflation hedging benefits whatsoever.