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Integrating Real Estate and Infrastructure Assets In ERM

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Abstract

Integrating Real Estate and Infrastructure Assets In ERM

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Illiquid assets like real estate and infrastructure are rapidly becoming a larger share of long-term institutional investment portfolios as investors seek higher returns. Traditional sentiment toward these assets has translated their immobility and physical character into stability, transparency, and low risk. These conclusions, however, are more the result of industry mythology than statistical fact. In reality, they are neither stable nor transparent and require a significantly more rigorous and detailed modeling approach than methodologies currently in place. The clash between the simplistic industry beliefs and the complex reality of ERM has pushed these asset classes in a risk management silo.

The purpose of our work is to address the risk management challenges associated with real estate and infrastructure head on, especially as they impact ERM modeling. We start our discussion with the critical issue of non-observable pricing and its impact on the distributional qualities of return; and then continue with how illiquidity places constraints on an investor's ability to effectively manage risk. We then analyze whether existing methodologies have been successful in addressing these issues. Finally, we posit a new approach, by suggesting that real estate and infrastructure projects are "composite assets" that can be decomposed into their elemental pieces such that the risk of each piece can be analyzed and measured using a factor model framework and mathematically reassembled into a coherent whole. The application of a general risk dimension methodology not only makes the risk bets readily obvious, but it allows for the consistent integration of real estate and infrastructure into the practice of ERM.

Outlining our approach step-by-step to support our methodology, we will detail valuable and sometimes unexpected implications for pension funds and insurance companies alike. Most important, we will present real world examples and share the experience of a large North American pension fund's implementation and use of the model.