



Research Brief

The relationships between real estate price and expected financial asset risk and return: Theory and empirical evidence

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This study provides an intuitive and realistic real estate pricing model by adopting the indifference pricing approach (IPA) to the real estate market with focus on the role of market comovement. In IPA the real estate transaction takes place if the buyer's offer price equals or exceeds the seller's ask price. The seller sets the ask price so that he can obtain equal or higher level of satisfaction (utility) by investing the proceeds from the sale than what the real estate would offer. Alternatively, the buyer expects to have higher or at least the same satisfaction from buying the real estate than the utility from investing the same amount in financial assets.

In addition to the strong intuition, another advantage of IPA is the ability to provide a more realistic representation of the real estate market than the traditional real option approach. First, we set up our IPA by incorporating real estate market imperfections, such as non-diversifiable real estate risk, heterogeneous risk aversions and non-synchronous comovement of the real estate and financial markets. Second, in examining the pricing relationship between real estate and financial asset, we find that market imperfections can distort the conventional monotonic and liner relationship between real estate price and financial asset risk and return.

Last, we focus on non-synchronous market comovement because in the recent financial crisis strong market comovement caused significant losses even in well-diversified portfolios. Our theoretical predictions and empirical result both suggest the real estate price may increase with increasing financial asset return but only in weak market comovement (i.e., a normal US market environment) when investors enjoy diversification benefit. Real estate price strictly declines with increasing financial asset return when market comovement is strong. More importantly, contrary to the conventional positive relationship, the real estate price generally declines with increasing financial asset risk. Price appreciation in real estate is only observed with small increase in financial asset risk when market comovement is strong potentially resulting in an initial price bubble and subsequent surprise price reversal" as real estate price declines with significant increase in financial asset risk.

In Summary, our findings suggest that market imperfections, such as non-synchronous market comovement, are important factors in evaluating real estate investment because they can distort the conventional pricing relationships between real estate and financial asset risk and return.

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