Hedging Housing Risk in London

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Abstract

This paper investigates the benefits of allowing households to compensate the portfolio distortion due to their housing consumption through investments in housing price derivatives. Focusing on the London market, we show that a major loss from over-investment in housing is that households are forced to hold a very risky portfolio. However, the strong performance of the London housing market means that little is lost in terms of expected returns. Even households with limited wealth are better off owning their home rather than renting and investing in financial assets, as long as they are willing to face the financial risk involved. In this context, access to housing price derivatives would benefit most poor homeowners looking to limit their risk exposure. It would also benefit wealthier investors looking for the high returns provided by housing investments without the costs of direct ownership of properties. Comparisons with French, Swedish and U.S. data provide a broader perspective on our findings.

Key Words: portfolio risk, house price index, hedging

1. Introduction

This paper provides further evidence on the potential benefits of financial instruments linked to the performance of the housing market, using London, England, as a case study. We find that the returns to housing in London have been strong but very volatile compared to other financial assets. Households overinvested in housing due to their housing consumption motive gain from the high returns on their home, but are forced to hold a very risky portfolio. Standard financial assets do not provide much of a hedge against the risk of owning a home. This explains why homeowners pursuing low-risk–low-return strategies would benefit from the introduction of housing price derivatives. We find that the other major beneficiaries of such derivatives would be investors pursuing high-risk–high-return strategies.

The first reason for choosing London as the focus of this study is the volatility of the local housing market since the mid-1970s, the period covered by our data. The second reason is that Londoners now have access to financial instruments which allow them to limit or expand their exposure to housing price risk, independently of their housing consumption. Such instruments have been discussed in the literature for a number of years. The academic literature has attempted to encourage their introduction by demonstrating
their potential benefit.\textsuperscript{1} Here, at last, we have a city where hedging housing price risk is feasible. Our findings have direct implications for the marketing of the products currently on offer and the development of further financial innovations.

Obviously, the findings of our study are subject to the usual caveats of the standard mean-variance portfolio approach we take. In particular, in determining optimal portfolio weights, we ignore the household’s human capital and future housing consumption needs, as well as differences in liquidity between housing and other assets.\textsuperscript{2} Despite such drawbacks, it still remains a useful methodology for examining the empirical evidence and assessing the performance of housing relative to other major classes of assets.

Computing optimal portfolio weights and the mean-variance frontier under various combinations of assets is a standard problem. The difficulty with housing as an asset concerns the estimation of the moments of returns on a single home. For this purpose, we adapt the methodology proposed in Englund et al. (2002). We also follow their lead with regards to the portfolio frontiers we compute in order to generate results which are directly comparable to those they obtain with their Swedish data. To gain a broader perspective on the London evidence, we present comparable data for France and the United States based on the work of le Blanc and Lagarenne (2002) and Flavin and Yamashita (2002), respectively.

The remainder of the paper is organized as follows. Section 1 explains how we build the time series and derive the moments of investment returns required to compute portfolio allocations. Section 2 considers unrestricted portfolio allocations before focusing on the constrained problem faced by various types of households and how they would benefit from access to housing price derivatives. Section 3 concludes with remarks on the current housing price derivative offerings on the London market and the potential for further developments of housing-related financial products. The Appendix reports the French, Swedish, and U.S. data underlying the comparisons in Section 2.

2. Data

The first step of our analysis consists in computing inputs to the standard portfolio optimization problem. We consider two types of housing investments: a U.K.-based and a London-based portfolio. We add four standard investment alternatives: general stocks, real estate stocks, long term bonds, and t-bills. We use real returns on the FTSE-All-Share index for general stocks, returns from the FTSE-Real-Estate-Stocks index for real estate stocks, the 10-year benchmark government bond yield for long term bonds, and the 3-month Treasury Bills yield for short term bonds. We use the Retail Price Index to deflate nominal returns.\textsuperscript{3} Figure 1 plots real quarter on quarter returns for the six assets we include in our specification over the period covered by our data, 1977–2000.

2.1. Deriving housing returns

Both U.K. and London housing investment returns are built from the housing price indexes provided by Nationwide, a major mortgage lender which reports quality-adjusted indexes