Long- and Short-run Effects of Interest Rates on Builders and the Housing Market

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Abstract

This paper analyzes the effects of real interest rates on homebuilders and the housing market under fixed-rate mortgages (FRM), both in long-run equilibrium and during transitional dynamics, and finds that the endogenous supply-side response to interest rate increases mitigates short-run housing price declines. I develop a heterogeneous agent model incorporating different mortgage structures, liquid assets, lumpy housing adjustment, and a construction sector with time-to-build constraints to decompose the effects of interest rates on housing prices. The findings demonstrate that in a long-run stationary equilibrium, heterogeneous household policy functions and the corresponding stationary distribution influence housing demand, while increased interest rates consistently suppress construction activity. The calibrated model demonstrates that the interest rate temporarily increases from 0.618% to 6% results in short-run housing prices that exceed those in a counterfactual without endogenous supply by 5 to 7 percentage points of the stationary price. Adjustable-rate mortgages reduce short-run housing prices by 1 percentage point of the stationary price relative to fixed-rate mortgages. The builder's financial constraint has limited impact on housing prices since a temporary increase in interest rates lowers optimal construction levels, hence a looser financial constraint.

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