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The Ins and Outs of Selling Houses: Understanding Housing-Market Volatility

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The importance of search frictions in buying and selling houses is widely acknowledged, with buyers and sellers spending considerable amounts of time searching. The essence of the search approach to markets is to understand how the stocks of buyers and sellers evolve through inflows and outflows. This paper assembles a collection of stylized facts about the cyclical properties of a broad set of U.S. housing-market variables over the last three decades, including house prices and the key stocks and flows, comprising houses for sale, sales transactions, new listings, and the average time taken for houses to sell.

The paper documents two novel facts. First, both inflows (new listings) and outflows (sales) are quantitatively important in understanding housing-market volatility. This is shown using an 'ins versus outs' decomposition of the type that has been applied to the labour market. The second novel fact is that houses for sale does not have a stable correlation with house prices, sales, or new listings, while correlations among all other pairs of variables remain stable. The correlations among prices, sales, and new listings are all positive, while the correlations of these with time-to-sell are all negative. On the other hand, while the correlation of houses for sales with time-to-sell has been positive throughout, the correlations of houses for sale with prices, sales, and new listings have changed from positive to negative in recent times.

A calibrated search-and-matching model of the housing market with both endogenous inflows and outflows is used to explain the empirical findings. The model shows that a single persistent housing-demand shock can explain the patterns of co-movement among all variables with the exception of houses for sale. A positive demand shock raises the total surplus from a transaction and thus increases both the willingness to trade and the price paid, generating a positive correlation between sales and prices. Given the equilibrium distribution of match quality among existing homeowners, a persistent housing-demand shock increases the incentive to invest in better match quality, leading to more listings. This explains the positive correlation between new listings and sales and prices, and the similar volatilities of new listings and sales.

Consistent with the data, the model does not predict there is a structural invariant correlation of houses for sale with other variables — it depends on the source and persistence of shocks. For example, a lower interest rate increases the incentive to invest in better match quality because it increases the relative importance of future payoffs compared to current costs. But opposite to a positive demand shock, it increases time-to-sell because it raises the returns to searching, pushing

up the number of houses for sale. The different behaviour of time-to-sell can thus explain the observed positive correlation between houses for sale with prices and time-to-sell. By simulating the model for two subsample periods, a reduction in the persistence of the housing demand shock can explain the switching the correlation between houses for sale and prices from positive to negative, as seen in the data. This is because a less persistent demand shock fails to induce enough moving to replenish the stock of homes for sale, while still creating a desire to complete housing transactions quickly.