

Energy Inflation and House Price Corrections

By Andreas Breitenfellner, Jesús Crespo Cuaresma and Philipp Mayer

Was it mere coincidence that the US subprime mortgage crisis occurred in proximity to an oil shock? This study suggests that there exists a systematic interaction of energy and house price developments. The literature identifies various channels potentially underlying this relationship:

- The adverse direct and indirect effects of energy prices hikes on disposable income and expenditures of households dampening the demand for housing;
- the direct and indirect effects of energy price increases on construction and operational building costs which lead to quantity and price adjustments on the supply side;
- the tightening reaction of monetary policy on the pressure induced by energy price increases on headline inflation which first withdraws liquidity from the housing market and second reduces aggregated demand including that for housing;
- the improving attractiveness of investment in energy commodities compared to housing on asset markets;
- the lagging impact of third common factors on both variables, such as economic growth and monetary policy.

Using a panel of quarterly data spanning over four decades since the first oil shock for 18 OECD economies we test empirically whether changes in energy prices affect the probability of house price adjustments. Since our dependent variable (the occurrence of a price reversal) is of a binary nature (1 or 0), we use conditional logit specifications to model the process of house price reversals in our panel. The use of conditional logit models allows for the inclusion of country-specific, time invariant factors which control for fixed unobservable factors which may differ across economies. We control for a variety of relevant monetary, macroeconomic, housing market specific and demographic variables and account for misalignment of housing prices from an estimated fundamental value.

Apart from the misalignment variable none of the additional variables appears to be a robust determinant of price reversals in house prices, while the estimates of this model reaffirm the role of energy prices as an explanatory factor of house price dynamics. The models estimated imply a marginal effect of energy price inflation on the reversal probability between 0.5 and 0.6, depending on the specification used. Several checks were carried out to ensure the robustness of our results. The change in the real short term interest rate appears to be significantly and positively related to turning point probabilities, indicating that monetary tightening tends to be related to house price

corrections, although establishing a causal relationship between the two would require a more in-depth analysis that falls beyond the scope of this study.

The results of our analysis confirm the hypothesis that energy price inflation has significant leading indicator properties for correction dynamics in house prices. Our estimated models imply that deviations from fundamental-driven house prices play a significant role in such price corrections and thus energy price inflation can be seen as playing a role in the bursting of house price bubbles. While the leading indicator quality of energy price inflation found in our study does not exclude feedback effects in the opposite direction, the robustness and magnitude of the effect of energy price inflation on house prices makes it relevant for policy considerations. Even without straightforward evidence of causality beyond the time lag structure used in the specifications, we conclude from our results that energy price inflation can be considered an important indicator not only for assessing challenges to price stability but also for financial market stability. Our results also suggest that lower energy price volatility and reduced energy intensity are important factors facilitating prudential macroeconomic policies.