The Role of Uncertainty in Shaping Individual Preferences for Residential Energy Renovation Decision

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This article examines a crucial question that has been raised in recent years in both policy and economic literature: the role of uncertainty as a barrier to energy retrofit decisions. We develop a discrete choice experiment to elicit preferences for energy renovation measures. This methodologically innovative experiment design includes two insurance schemes covering potential sources of uncertainty as attributes of the energy retrofit alternatives. We use a mixed logit model to investigate the nature of systematic heterogeneity in household preferences for attributes of energy retrofit solutions. Our results indicate some potential avenues for action to increase energy efficiency investment. First, they suggest that uncertainty about energy prices and energy retrofit quality negatively affect the energy-retrofit decision-making process. Indeed, we provide evidence that French homeowners value greater certainty about future trends in energy pricing and quality of the renovation when making decisions (i.e., greater certainty has a positive impact on utility). Consistent with theory, the impact on the utility of reduced uncertainty is higher for risk-averse individuals. Furthermore, willingness to pay (WTP) for insurance with regard to energy retrofit quality and a fixed energy price contract is positive and heterogeneous among respondents: A larger share of homeowners preferred quality insurance to the fixed energy price contract. Finally, we use our results to simulate the impact of specific initiatives and show how they could substantially increase the energy retrofit rate of French homeowners. We found that introducing insurance for retrofit quality over 10 years increases the energy renovation rate by 10%–15% compared with the reference scenario. This result paves the way for new strategies that policymakers should consider to increase energy retrofit rates.

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