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Capitalization of energy labels versus Techno-economic assessment of energy renovations in the French housing market.

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Abstract

While a growing number of studies evidence the existence of a green value associated to energy labels, these studies disagree on the magnitude of this green premium and lack comparison with associated renovation costs and expected savings for households. This paper investigates the green value of French houses in two regions: one urban area, the Lyon metropolis, and one rural area, the Brest area in Brittany. In a first step, the traditional hedonic analysis of transactions in those regions is coupled with Geographic Information Systems to regress prices on the intrinsic characteristics of dwellings and on the distance to various public amenities, such as parks, city center or public transports. A spatial econometric model is estimated to control for neighborhood effects. Results evidence a significant green value in both areas. If relative premium is higher in Brittany, switching to absolute terms evidences tantamount green values for each level of efficiency in the two regions, reaching about 35,000€ for low consumption houses. In a second step, using a dataset on warmth insulation costs, the paper highlights that green premiums match with the investments required to improve energy efficiency. Green value is thus consistent with the capitalization of renovation costs. Comparison with expected energy savings suggests that households' time preferences need to be strongly oriented for the future, with implicit discount rates smaller than 5% and time horizon over 20 years, to favor low-energy houses.

Keywords: Hedonic pricing ; Green Value ; Energy efficiency ; Spatial econometrics.

JEL classification: R21; Q40; L15.