THE DEMAND FOR NOISE RELIEF

A TWO-STEP HEDONIC STUDY IN THE REGION OF FLANDERS, BELGIUM

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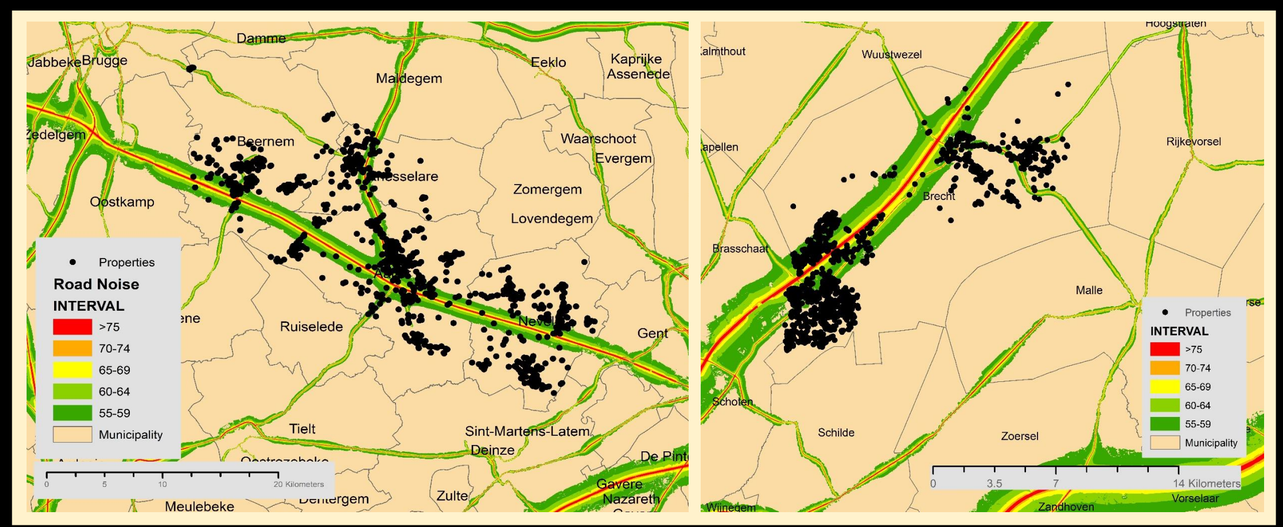
CONTEXT

ROAD NOISE EXPOSURE IN 2 MARKETS

- Purpose: estimation of willingness to pay for noise relief through the hedonic pricing method applied to the Belgian housing market
- Two housing sub-markets in Flanders with 2.135 individual housing transactions between 2004 – 2009
- Road noise exposure levels (>54dB) are measured from 2 major highways flowing through the municipalities



VALUE ADDED

TRANSFERABLE WELFARE ESTIMATES

Two submarkets allow for the identification of the demand function for noise relief in the second step of the hedonic analysis

» Result: Noise relief demand functions can now estimate welfare gains/losses of non-marginal changes in road noise levels and these estimates can be transferred to other research

MODEL

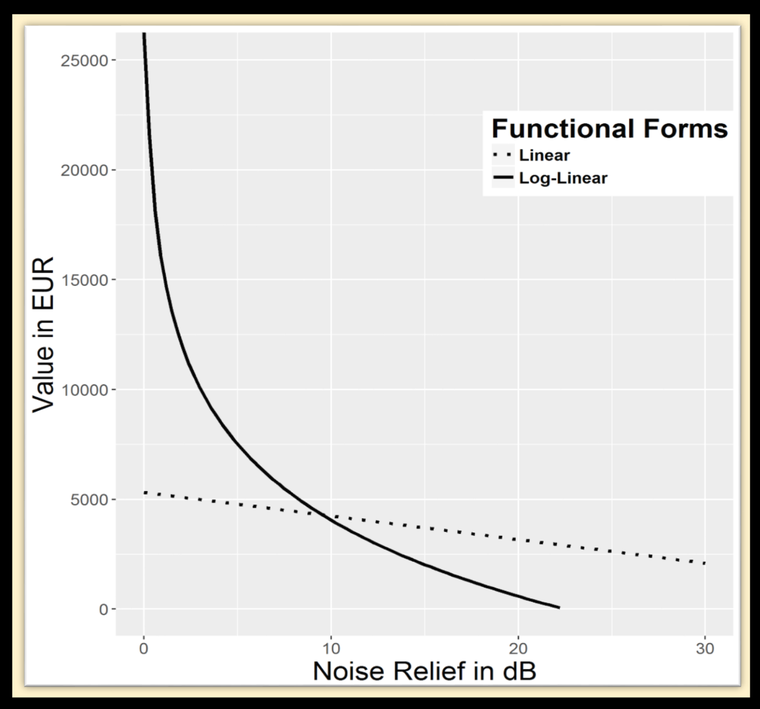
TWO-STEP HEDONIC ANALYSIS

- STEP 1 Two separate non-linear hedonic price functions (obtain implicit prices per sub-market)
- STEP 2 Tobit model with endogenous regressors to estimate the demand for noise relief

RESULTS

Δ NOISE	LINEAR DEMAND	SEMI-LOG DEMAND
1dB » 5dB relief	EUR 23.567	EUR 47.736
5dB » 10dB relief	EUR 21.543	EUR 26.949
10dB » 15dB relief	EUR 19.012	EUR 14.086

Interpretation: in neighborhoods dealing with the largest noise pollution, households are willing to pay, on average, approximately EUR 23.567 for a non-marginal reduction in noise of 4 dB under the linear specification, while for the semi-log demand, this amount doubles to EUR 47.736



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