



PLANNING A SUSTAINABLE AND CLIMATE-PROOF BUILT ENVIRONMENT THE SPECIAL CASE OF REAL ESTATE VALUE FORMATION AND RESIDENTIAL QUALITIES

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1. BACKGROUND: WHAT MATTERS, ECONOMICALLY, IN THE URBAN BUILT ENVIRONMENT?

The study estimates the spatial effects of climate-sensitive regulating ecosystem services on the formation of urban real estate value in nine Finnish cities. The study period is from 1970 to 2011. This poster presents initial results for the city of Helsinki for the period 2000 to 2009. The research is part of two interdisciplinary, multi-institutional projects, RECAST and ENSURE.

2. METHODS

A geostatistics / spatial econometrics analytical framework has been adopted. The economic agent is modeled through spatially interacting cells, with the following behavior:

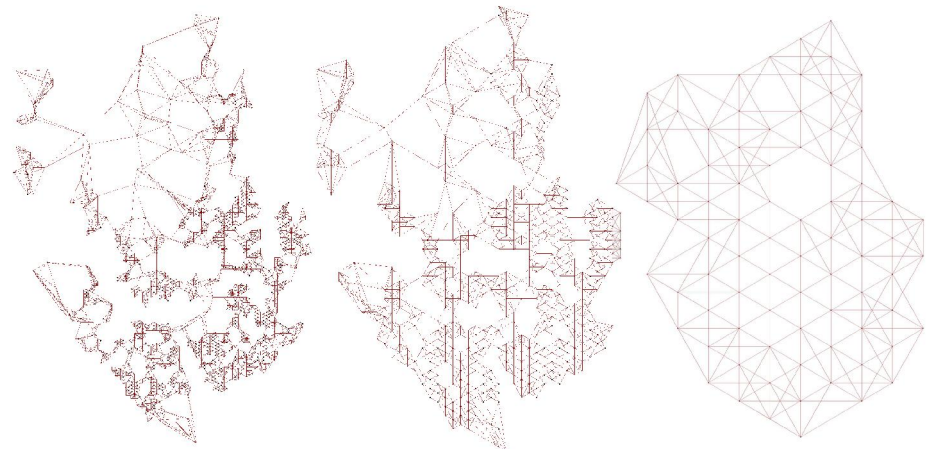
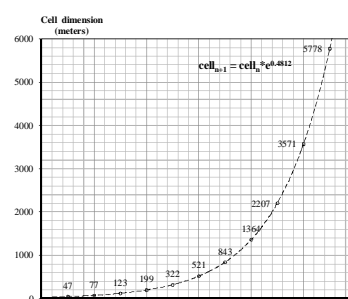
$$Y = \rho WY + \{\beta X + \gamma S + \delta U\} + u$$

$$Y = \{\beta X + \gamma S + \delta U\} + \lambda W u + e$$

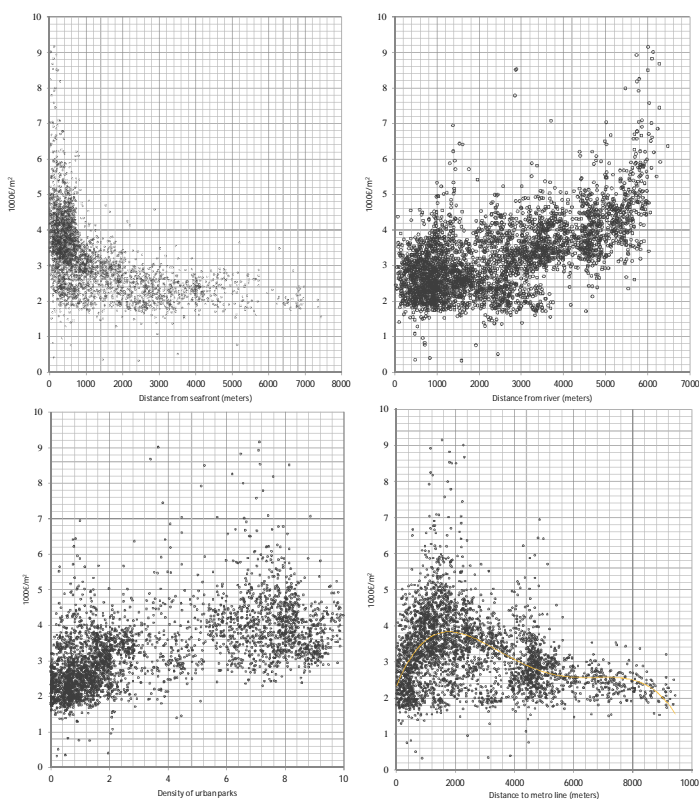
$$Y = \rho W_1 Y + \{\beta X + \gamma S + \delta U\} + \lambda W_2 u + e$$

, with Y: the dwelling's value; X: ecological attributes, S: structural attributes, U: urban economic attributes, W: a spatial weights matrix, ρ and λ : spatial lag and error coefficients.

3. MODELING OF SPATIAL INTERACTIONS



4. FIRST RESULTS: HELSINKI, CELL DIMENSION = 47M, TIME PERIOD: 2000-09



ECOSYSTEM TYPE		EFFECT OF 100M NEARER	NEIGHBOR'S PREMIUM
SEAFRONT	Apartment; within 700m of sea	+ 50 €/m ²	+ 620 €/m ²
	Apartment; farther than 700m from sea	+ 10 €/m ²	+ 610 €/m ²
	Single or Row House	+ 398 €/m ²	+ 290 €/m ²
LAKE	Apartment; within 700m of sea	+ 10 €/m ²	+ 620 €/m ²
	Apartment; farther than 700m from sea	+ 67 €/m ²	+ 610 €/m ²
	Single or Row House	+ 6.4 €/m ²	+ 290 €/m ²
URBAN PARK	Apartment; farther than 700m from sea	+ 6.5 €/m ²	+ 620 €/m ²
		1 ADDITIONAL UNIT PER 100 M ²	
	Apartment; within 700m of sea	+ 400 €/m ²	+ 610 €/m ²
	Single or Row House	+ 260 €/m ²	+ 290 €/m ²