

The microgeography of housing supply in England

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Introduction

- ▶ UK policy debate dominated by three issues
 1. Weak productivity growth
 2. Large spatial inequalities in opportunities and living standards
 3. Poor quality housing/high housing costs
- ▶ *Local* housing supply significant for all three questions
 - ▶ E.g. to what extent does low housing supply in high productivity areas reduce national productivity growth?
 - ▶ Do differences in housing supply across areas affect *who lives where*?
- ▶ But little evidence on how local supply responds to local demand changes

Local supply elasticities

- ▶ Key measure of how local housing stock responds to increasing demand
- ▶ Do areas with greater growth in housing **demand** for housing also see greater increases in housing **supply**
- ▶ Elasticity \implies % extra increase in supply increase for each % extra increase in price
 - ▶ E.g. elasticity of 0.1 \implies if house prices *double* relative to the average then local supply will increase by just *10%* more than the average
- ▶ Different measures
 - ▶ How to measure supply of housing (number of housing units, number of bedrooms, size of houses)?
 - ▶ Increase in supply over what time period?

What we do

- ▶ Assemble dataset of house prices, quantities, housing mix, and physical and regulatory constraints at low levels of geography
 - ▶ For each MSOA and LAD in England
- ▶ Measure how local supply responds to local price changes across geographies
- ▶ Measure how different constraints (existing development, geography, available area for development) affect local supply elasticities
- ▶ Measure how different constraints affect different housing types (larger vs smaller units)
- ▶ (Ongoing) Measure how different constraints affect local workforce growth in response to local labour demand shocks

An issue - are prices driven by supply or demand?

- ▶ Increases in local supply (relaxation of rules, local developments) boost quantities and lower prices
- ▶ But we want effect of increases in demand-driven price rises on supply
 - ▶ If not, we will underestimate the impact of prices on supply
- ▶ Solution: use price growth driven by local job opportunities
 - ▶ Employment growth → Price growth → more housing supply (?)

The data we use

Main sources of data

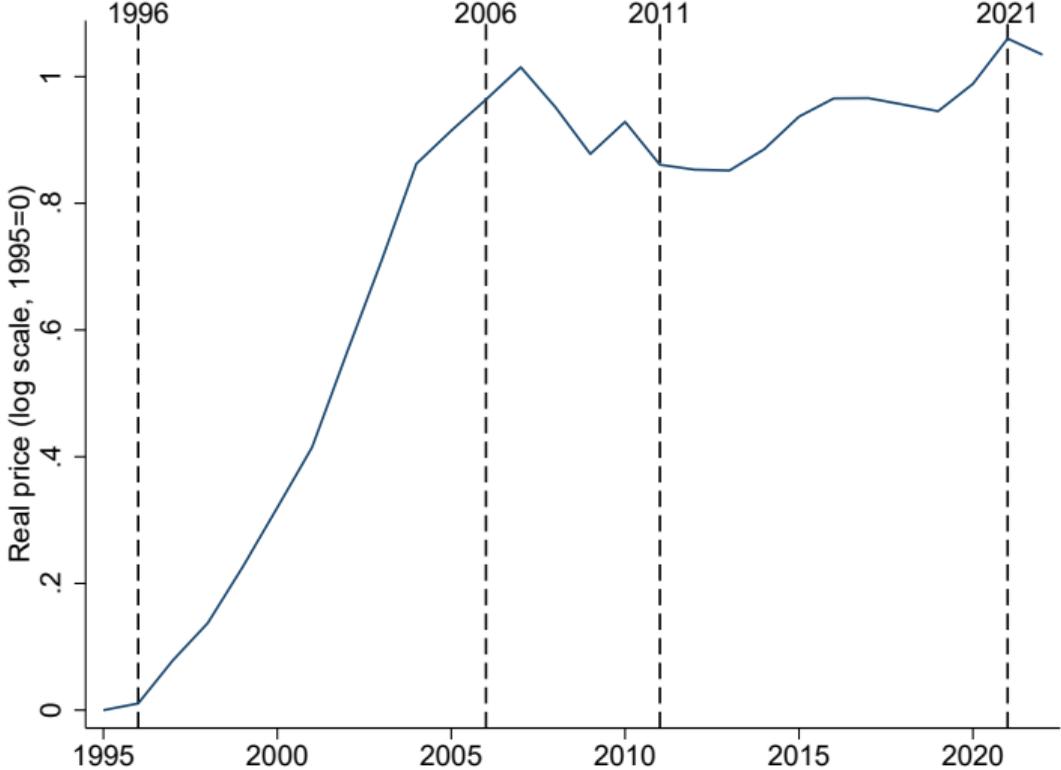
Housing data

- ▶ Number of housing units in each area from the Valuation Office Agency
- ▶ House prices and characteristics from UK Land Registry
 - ▶ Quality adjust prices using house type, freehold vs leasehold and month of sale

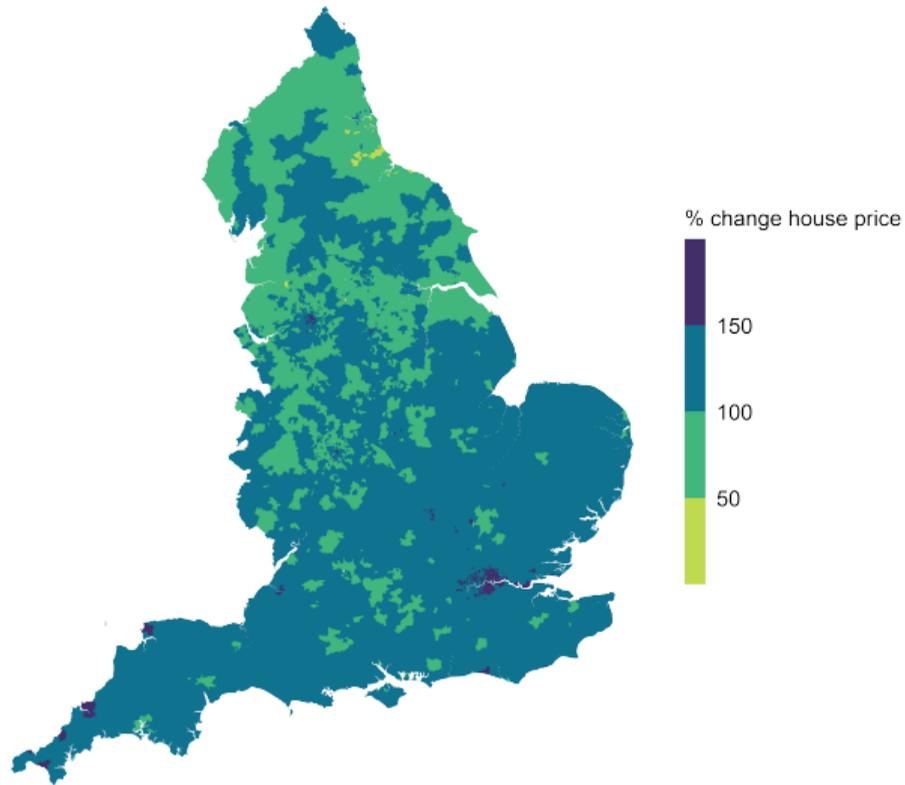
Constraints

- ▶ Historical housing density (homes per sq km in 1993)
- ▶ Share of land available for development
 - derived using satellite data on land cover (water bodies, cliffs, built-up areas) and locations of green belt, national parks and SSSIs
- ▶ Geographical constraints: max - min elevation, landslide risk, and radon
- ▶ Historic refusal rates for major projects (1975-1990) from Hilber and Vermeulen (2016)

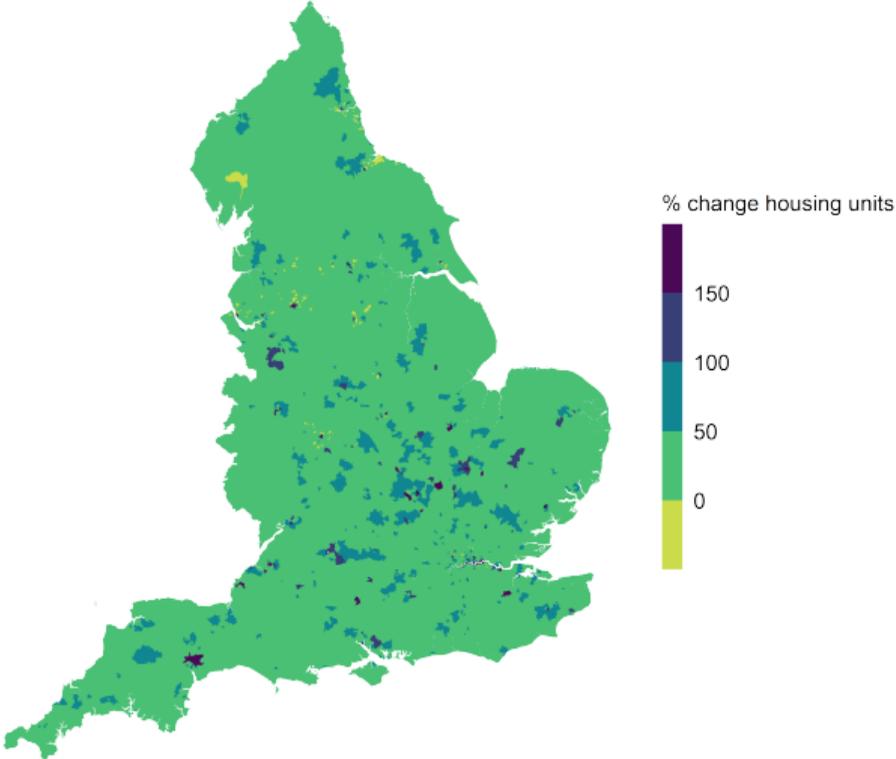
Considering two periods



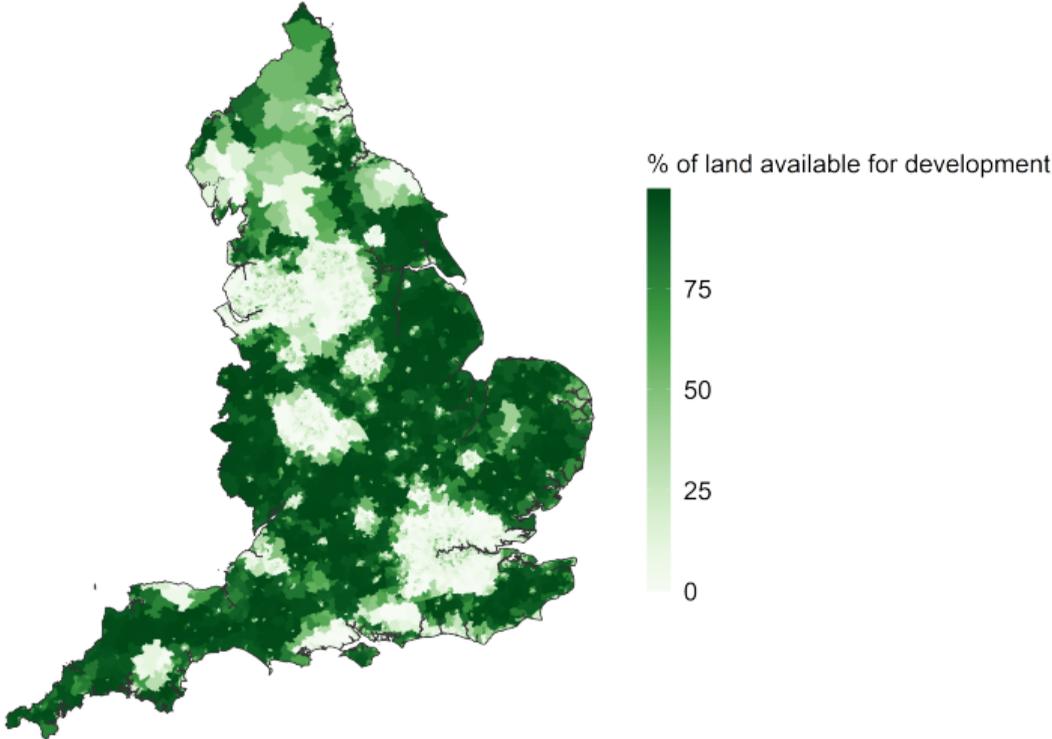
% Change in price 1996-2021



% Change in housing units 1996-2021



Share of land available for development

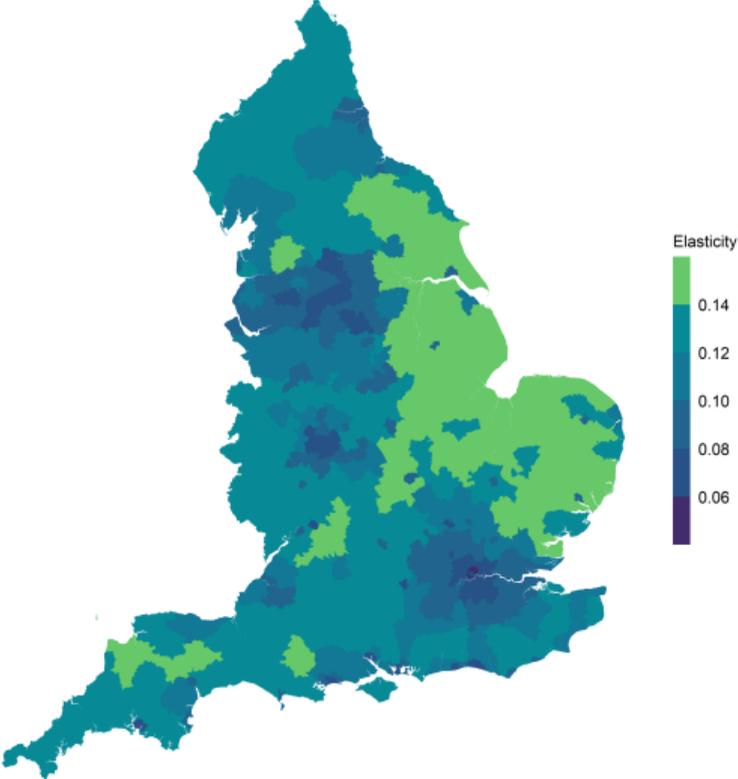


Results

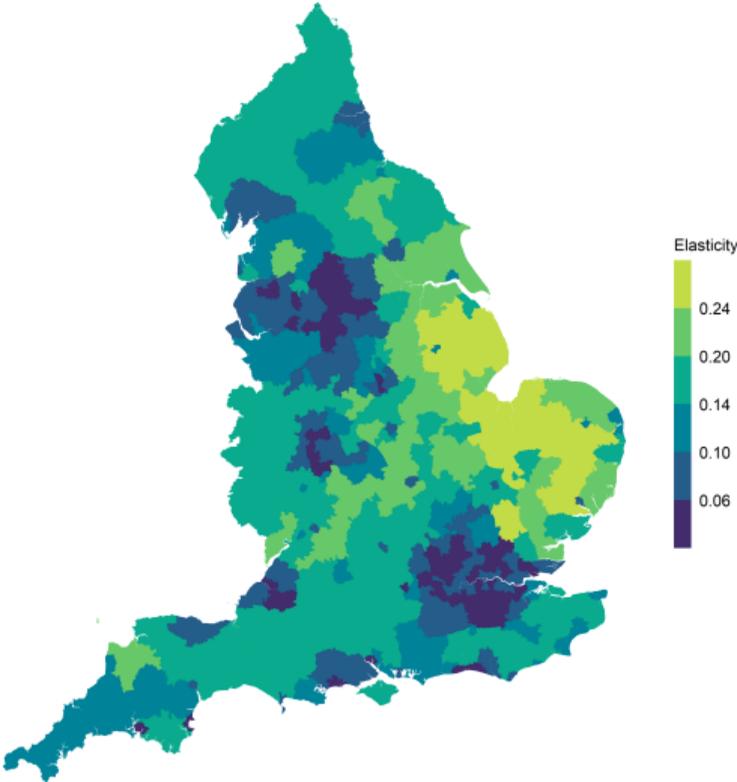
Findings (highlights)

- ▶ Weak response of local supply to local price changes (area with average characteristics supply elasticity is between 0 and 0.15 for both periods of house price growth: 1996-2006 and 2011-2021)
 - ▶ Implies supply growth does not track local demand for housing
 - ▶ Comparable estimates from the US 0.30 (Baum-snow and Han, 2022)
- ▶ Weaker responses in areas with more uneven topography, less land available for development and higher historical housing density
- ▶ Housing density and land available for development do more to constrain construction of larger properties than 1-2 bedroom units

Map of elasticities: 1996-2006



Map of elasticities: 2011-2021



Importance of different constraints

Share of variance explained by local constraints (%)

	1996 - 2006	2011 - 2021
Housing density	44	28
Share unconstrained	45	61
Elevation	4	2
Refusal rate	3	5
Landslides	1	1
Radon	3	3

Implications and next steps

- ▶ If area improves productivity and more people want to move there, supply may not keep up
 - ▶ How does this affect national productivity?
 - ▶ Depends on **worker access** (e.g. willingness to commute)
 - ▶ Access may depend on parents' resources/capital (affecting **social mobility**)
- ▶ Next step: Measure impact of elasticities on growth in local workforce

Thank you!