Does Removing Federal Subsidies Discourage Development?
An Evaluation of the Impact of the U.S. Coastal Barrier Resources Act

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Motivation

Do disincentives discourage development?

CBRA System Units/OPA

CBRA prohibits federal (but not state or local) financial assistance (e.g., loans, grants, flood insurance, rebates, subsidies or financial guarantees) for roads, bridges, utilities, erosion control, and post-storm disaster relief for new development on designated “undeveloped” sections (CBRA units) of coastal barriers along the Atlantic and Gulf coasts.

Areas that had < 0.2 structures/acre in 1982.
<table>
<thead>
<tr>
<th>Category</th>
<th>NFIP?</th>
<th>Other federal expenditures available?</th>
<th>Development unrestricted? (“unprotected”)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-system, unprotected</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Non-system, protected</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>OPA</td>
<td>No</td>
<td>Yes</td>
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<td>System unit, unprotected</td>
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<td>Category</td>
<td>NFIP</td>
<td>Other Fed. Exp.</td>
<td>Un-protected</td>
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Research Design, Data & Methods

• Defined comparison areas to “un-protected”, non-CoBRA areas
  • Sampled all area within 2km of coastline from states from Texas to North Carolina

• Microsoft US Building Footprints to aggregate structure count and built-up area within treatment categories

• Zillow and National level parcel dataset from 2016 (~200 million records), to aggregate parcels and their properties (land use, sq.ft, assessed value, sales price, etc.) within 2km of the coast, within treatment categories (~1.4 million records)

• Cluster analysis of counties based on growth patterns.
Results
Single Family Residential Characteristics

- % Parcel Area Covered by Building Footprint (Developed Parcels)
- % Parcel Area Covered by Building Footprint (All Parcels)
- log(Residential m²)
- log(Sales Price (2016 USD/m²))
- Residential Area/Parcel Area

- County Fixed Effects
- No Fixed Effects
No CBRA Units

Low Growth in Both

High Growth outside CBRA/
Low both

High Growth in both

Density change 1982-2016
No CBRA Units

Low Growth in Both

High Growth outside CBRA/
Low both

High Growth in both

Density change 1982-2016
Did CBRA work?

Yes!

(mostly)
Limitations

• Endogenous CoBRA delineation
• Rely on Zillow for land use categorizations
  • (county LU data standards -> national standards uncertain)