Modelling predatory lending

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Presentation Overview

- What is predatory lending?
- Research questions
- Data and methods
- Findings
- Limitations and future research
- Conclusions
The more things change
HOLC Security Grades by City

- Philadelphia
- Pittsburgh
- Los Angeles
<table>
<thead>
<tr>
<th>Variable</th>
<th>Philadelphia: HOLC grade</th>
<th>Pittsburgh: HOLC grade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All variables included</td>
<td>Only significant variables included</td>
</tr>
<tr>
<td>Percent African American</td>
<td>.114***</td>
<td>.111**</td>
</tr>
<tr>
<td>Percent other</td>
<td>.004</td>
<td></td>
</tr>
<tr>
<td>Percent immigrant White</td>
<td>.098***</td>
<td>.097***</td>
</tr>
<tr>
<td>Median housing value</td>
<td>-.209***</td>
<td>-.224***</td>
</tr>
<tr>
<td>Median rent</td>
<td>-.142***</td>
<td>-.144***</td>
</tr>
<tr>
<td>Owner occupancy rate</td>
<td>-.283***</td>
<td>-.232***</td>
</tr>
<tr>
<td>Percent of housing units that are 1–2 family</td>
<td>.067</td>
<td></td>
</tr>
<tr>
<td>Percent of housing built pre-1920</td>
<td>.442***</td>
<td>.437***</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.699</td>
<td>.698</td>
</tr>
<tr>
<td>Adj. $R^2$</td>
<td>.691</td>
<td>.692</td>
</tr>
</tbody>
</table>

*p > .10. **p > .05. ***p > .01.*
Assignment of HOLC Grades

• Process and forms consistent between cities.
• Racial language inflammatory, but varies by location
• Regression models account for large portion of the variation
• Similar, but not identical, models between cities
• Presence of minority and ethnic groups led to downgrading
• Grades likely based on theory of urban structure and urban decline, combined with market principles and racial/ethnic demographics
Research Questions

- Is predatory lending activity geographically clustered?
- Who is at-risk to predatory lending activity?
- Can we model the location of predatory lending and the characteristics of the affected areas?
Philadelphia

Figure 1.1. Context Map of Philadelphia, Pennsylvania.
Data and Methods

- Census Data (381 tracts)
- Publicly recorded mortgages (n=1,970)
- Home Mortgage Disclosure Act Data
- Operationalized predatory definition
- Maps
- Nearest Neighbor Hierarchical Cluster Analysis
- Discriminant Analysis
Location of Citywide Sample

Legend
- Census Tracts, 2000
- Sampled Properties
NNHCA Clusters, LTV ≥ 110
Nearest Neighbor Hierarchical Cluster Analysis Results

• .1% chance clusters created by chance
• Rejection of null hypothesis: predatory lending activity is not spatially random
Location of Predatory Activity, Value Estimation Method A, LTV $\geq 110$
Discriminant Analysis

- Race and ethnicity variables
- Socioeconomic status variables
- Neighborhood context variables
National Mortgage Data Repository (NMDR)

- Application data
- HUD1/HUD1A settlement forms
- Loan note
Gee, I’d like to buy a house but I haven’t saved any money for a downpayment and I don’t think I can afford the monthly payments. Can you help me?

Sure! Since the value of your house will always go up, we don’t need downpayments anymore!
Role of Brokers

• Broker compensation paid by borrower
• Yield-Spread Premiums (YSP)
• Differential Loan Terms
## Broker fees

<table>
<thead>
<tr>
<th></th>
<th>Fixed Loans</th>
<th>ARMS loans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broker Fee only</td>
<td>15.44%</td>
<td>14.37%</td>
</tr>
<tr>
<td>YSP only</td>
<td>5.96%</td>
<td>4.89%</td>
</tr>
<tr>
<td>Broker Fee and YSP</td>
<td>6.67%</td>
<td>13.46%</td>
</tr>
</tbody>
</table>
## Loan Values

<table>
<thead>
<tr>
<th></th>
<th>Fixed Loans</th>
<th>ARMS loans</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Application loan value</strong></td>
<td><strong>Loan Value</strong></td>
<td><strong>Application loan value</strong></td>
</tr>
<tr>
<td>All brokered loans</td>
<td>$99,717</td>
<td>$98,981</td>
</tr>
<tr>
<td>All unbrokered loans</td>
<td>$104,706</td>
<td>$108,549</td>
</tr>
</tbody>
</table>
## Settlement fees

<table>
<thead>
<tr>
<th></th>
<th>Fixed Loans</th>
<th></th>
<th>ARMS loans</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Settlement Fees</td>
<td>% of loan value</td>
<td>Settlement Fees</td>
<td>% of loan value</td>
</tr>
<tr>
<td>All brokered loans</td>
<td>$13,376</td>
<td>18.35%</td>
<td>$16,588</td>
<td>8.63%</td>
</tr>
<tr>
<td>All unbrokered loans</td>
<td>$13,780</td>
<td>16.33%</td>
<td>$20,203</td>
<td>16.02%</td>
</tr>
</tbody>
</table>
Limitations and Future Research

• Data
  – Home Mortgage Disclosure Act variables
• Methods
• Geographic Scope
Conclusions

- Spatial aspects of predatory lending
- Characteristics of affected neighborhoods
- Defining predatory lending
- The unintended consequence of predatory lending
“no skin in the game leads to finding the greater fool”

(Immergluck’s Foreclosed, 2009)
“Yes, as through this world I've wandered
I've seen lots of funny men;
Some will rob you with a six-gun,
And some with a fountain pen.”

*Pretty Boy Floyd*, Woody Guthrie
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