Has Falling Crime Invited Gentrification?

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Internal Census Data

The research in this paper was conducted while the authors were Special Sworn Status researchers of the U.S. Census Bureau at the New York Census Research Data Center.

Any opinions and conclusions expressed herein are those of the authors and do not necessarily represent the views of the U.S. Census Bureau.

All results have been reviewed to ensure that no confidential information is disclosed.
Has Falling Crime Invited Gentrification?

1. Motivation
2. Background
3. Theory
4. Data
5. Model 1: Move to Central City
6. Model 2: Move to Low-Income, or Majority Minority Central City Neighborhood
7. Model 3: Neighborhood Choice
8. Conclusions
1. Motivation

Growing Concerns About Gentrification, Even in Detroit
1. Motivation

A Greater Share of Low-Income City Tracts in US Seeing Large Relative Gain in Income

Sources: Data source, NYU Furman Center
A Greater Share of Low-Income City Tracts in US Seeing Large *Relative* Gain in % College-Educated

Sources: Data source, NYU Furman Center
A Greater Share of Low-Income City Tracts in US Seeing Large *Relative* Gain in % White

Sources: Data source, NYU Furman Center
1. Motivation

The Real Cause of Gentrification

When cities like Oakland prohibit new apartments and condos in wealthy neighborhoods, low-income areas pay the price.

By Robert Gammon

This could be the biggest force driving gentrification

It's about the time that high-income

By Lydia DePillis  November 19, 2015

When we think about the reasons behind the movement of younger decades-long trend of suburbanization -- lots of things come to mind 2000s. The fertility rate sank, lessening the need for three-bedroom value walking and coffeeshops and communal public spaces, rather

The Real Source of America's Urban Revival

Millennials, housing costs, and shorter commutes are the usual explanations. But a careful new study points to another reason young college grads returned downtown in the 2000s.

ERIC JAFFE | @e_jaffe | Feb 23, 2016 | 81 Comments
1. Motivation

U.S. Violent Crime Rate (per 1,000)
1. Motivation

U.S. Homicide Rate (per 100,000)
1. Motivation

Research Questions

1. As violent crime in a city falls, are ‘gentrifier’ households more likely to move into
   • The city (rather than surrounding suburbs)?
   • Low-income or majority minority neighborhoods in that city?
1. Motivation

Research Questions

- 1. As violent crime in a city falls, are ‘gentrifier’ households more likely to move into
  - The city (rather than surrounding suburbs)?
  - Low-income or majority minority neighborhoods in that city?

- 2. Are their choices more crime-sensitive than those of others, changing the mix of households opting for cities and low-income, majority minority city neighborhoods?
1. Motivation

Research Questions

1. As violent crime in a city falls, are ‘gentrifier’ households more likely to move into
   • The city (rather than surrounding suburbs)? YES
   • Low-income or majority minority neighborhoods in that city? YES

2. Are their choices more crime-sensitive than those of others, changing the mix of households opting for cities and low-income, majority minority city neighborhoods? YES
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2. Background

Causes of Urban Resurgence and Gentrification

- Aging housing stock ‘ripe’ for renovation
  (Brueckner and Rosenthal, 2009)
- Rapidly appreciating housing markets driving higher-income households to choose lower-income neighborhoods
  (Ellen, Horn and O’Regan, 2013)
- Increasing importance of knowledge in economy leading to growth in employment in central cities
  (Baum-Snow and Hartley, 2016; Diamond, 2016)
- Demand for shorter commutes from time-stressed, skilled workers
  (Edlund, Machado and Sviatschi, 2015)
- Increasing preferences for urban amenities
  (Glaeser and Gottlieb, 2006; Couture and Handbury, 2016)
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3. Theory/Hypotheses

Why Falling City Crime Might Change Mix of In-movers to Central Cities

Falling City Crime

→ Differentially attracts households with higher incomes and more earning potential or choices to move into cities

→ Change in city population composition

Why?

- High-income households have higher marginal willingness to pay to avoid crime (O’Sullivan, 2005).
- Low-income HHs may prioritize unit quality, and may be more confident they can manage high crime rates (Rosenblatt and De Luca 2012).
- College-educated HHs may have differential access to information.
3. Theory/Hypotheses

Why Falling City Crime Might Change Mix of Inmovers to Low-Income or Majority Minority Neighborhoods in Central Cities

Falling City Crime

→ Differentially attracts households with higher incomes and more earning potential or choices to move into low-income or majority minority, city neighborhoods

→ Change in neighborhood composition

Why?

▪ Direct effect: These are the neighborhoods where crime is in fact falling the most.

▪ Indirect effect: Falling crime makes cities as a whole seem safer, invites higher income households to consider low-income neighborhoods that they would have previously avoided
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4. Data

Restricted Census Data

- Household level data from 1990 and 2000 decennial census and 2010-2012 ACS
- Limit sample to households who moved in past year

Sample
  - Over four million mover households
  - 244 Largest Core-Based Statistical Areas (CBSAs)

*Data identifies census tract of residence*
**Measures/Definitions**

- **‘Gentrifier’ households:**
  - High-income (income higher than CBSA median) (39%)
  - College-educated (28%)
  - White (69%)

- **Moves to homes in central city:**
  - Moves to largest principal city in CBSA

- **Moves to homes in low-income or majority minority, central city neighborhood:**
  - Moves to central city census tract with income below CBSA median
  - Moves to central city, majority minority census tract
4. Data

Increase in Share of Moves to Homes in Central City

![Graph showing increase in share of moves to homes in Central City for high-income, White, and college-educated households between 1990 and 2010.]

- High-income households
- White households
- College-educated households
4. Data

Increase in Share of Moves to Homes in Majority Minority City Neighborhoods

<table>
<thead>
<tr>
<th>Year</th>
<th>High Income Households</th>
<th>College-Educated Households</th>
<th>White Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td></td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td></td>
<td>5.0</td>
</tr>
<tr>
<td>2010</td>
<td></td>
<td></td>
<td>7.0</td>
</tr>
</tbody>
</table>
4. Data

Crime

- Violent crime and homicide per capita of largest principal city in CBSA (central city)
- FBI Uniform Crime Reports
- Lag by one, two, or three years to rule out reverse causality
4. Data

Large Reductions in Violent Crime in U.S. Cities

[Graphs showing decreases in violent crime and homicides per 1,000 and 100,000 population from 1985 to 2015.]

Violent crime per 1,000 population

Homicides per 100,000 population
4. Data

Large Variation in Changes in Violent Crime in U.S. Cities

Table 3 Variation in 1988 to 2008 Crime Changes Across Central Cities

<table>
<thead>
<tr>
<th>Percentile</th>
<th>Percent change declines, violent crime per capita</th>
<th>Percent change declines, homicides per capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>-73.8%</td>
<td>-75.7%</td>
</tr>
<tr>
<td>25%</td>
<td>-56.9%</td>
<td>-59.5%</td>
</tr>
<tr>
<td>50%</td>
<td>-25.9%</td>
<td>-38.4%</td>
</tr>
<tr>
<td>75%</td>
<td>7.9%</td>
<td>0.6%</td>
</tr>
<tr>
<td>90%</td>
<td>43.9%</td>
<td>40.2%</td>
</tr>
<tr>
<td>Mean</td>
<td>-18.2%</td>
<td>-20.4%</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>50.5%</td>
<td>72%</td>
</tr>
<tr>
<td>N</td>
<td>244</td>
<td>244</td>
</tr>
</tbody>
</table>

Note: Weighted by 2010 central city population.
Central City Characteristics

- Decennial Census and ACS
  - Share minority
  - Share foreign born
  - Share college or more
  - Share poverty
  - Share units built before 1940
  - Share units built last 10 years
  - Population (equivalent to population density)
  - Median gross rent
  - Median value owner-occupied housing
  - Median household income

- Consistent geographic boundaries
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Explaining Moves to Central City

- Are ‘gentrifier’ households more apt to move to home in central city when crime in that city falls?
- Are their choices more sensitive to violent crime than those of other households?
  - High income vs low income
  - College vs non-college
  - White vs non-white
Explaining Moves to Central City

- Are ‘gentrifier’ households more apt to move to home in central city when crime in that city falls? **YES**
- Are their choices *more* sensitive to violent crime than those of other households?
  - High income vs low income **YES**
  - College vs non-college **YES**
  - White vs non-white
5. Move to Central City Model

Explaining Moves to Central City

\[ Y_{ict} = \alpha + \beta \text{CRIME}_{ct-1} + \lambda_1 H_{ict} + \lambda_2 X_{ct} + \kappa_c + \tau_t + \epsilon_{ict} \]

Where:

- Y is a binary variable:
  - 1 if household i moves to largest central city in the CBSA
  - 0 if household moves elsewhere in CBSA
- CRIME = violent crime or homicides per capita in largest CC
5. Move to Central City Model

Explaining Moves to Central City

\[ Y_{ict} = \alpha + \beta \text{CRIME}_{ct-1} + \lambda_1 H_{ict} + \lambda_2 X_{ct} + \kappa_c + \tau_t + \varepsilon_{ict} \]

Where:

- **H** set of household characteristics
  - Married, single mother, children under 18, income, race/ethnicity, foreign born status, education level
- **X** set of central city characteristics
  - Median gross rent, median value owner occupied house, median income, poverty rate, share non-white, share foreign born, share housing built before 1940, share housing built in past 10 years
Explaining Moves to Central City

\[ Y_{ict} = \alpha + \beta \text{CRIME}_{ct-1} + \lambda_1 H_{ict} + \lambda_2 X_{ct} + \kappa_c + \tau_t + \varepsilon_{ict} \]

Where:

- \( \kappa \) CBSA fixed effects
- \( \tau \) year fixed effects
- Standard errors clustered at CBSA level
- Both city and crime variables are reported as logs so results can be interpreted as effects of percentage change
Explaining Moves to Central City

$$Y_{ict} = \alpha + \beta \text{CRIME}_{ct-1} + \lambda_1 H_{ict} + \lambda_2 X_{ct} + \kappa_c + \tau_t + \varepsilon_{ict}$$

We stratify our sample to test whether results differ for high-income vs. low-income households, college educated households vs. less educated white vs. non-white households.
5. Move to Central City Model

Results: High-income/College Graduates/White More Likely to Choose Homes in Central City when City Crime Lower

Table 7: Linear Probability Models, Probability of Moving to Central City vs. Suburbs

Table 7 Panel A: Violent crime

<table>
<thead>
<tr>
<th></th>
<th>Low-Income</th>
<th>High-Income</th>
<th>Non-College</th>
<th>College</th>
<th>Non-White</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Violent crime per capita, ln</td>
<td>0.000</td>
<td>-0.030***</td>
<td>-0.002</td>
<td>-0.027***</td>
<td>-0.007</td>
<td>-0.015**</td>
</tr>
<tr>
<td></td>
<td>(0.010)</td>
<td>(0.010)</td>
<td>(0.006)</td>
<td>(0.007)</td>
<td>(0.013)</td>
<td>(0.007)</td>
</tr>
<tr>
<td>Test diff btw samples</td>
<td></td>
<td>***</td>
<td></td>
<td></td>
<td>***</td>
<td></td>
</tr>
</tbody>
</table>

Table 7 Panel B: Homicides

<table>
<thead>
<tr>
<th></th>
<th>Low-Income</th>
<th>High-Income</th>
<th>Non-College</th>
<th>College</th>
<th>Non-White</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homicides per capita, ln</td>
<td>0.000</td>
<td>-0.010**</td>
<td>-0.001</td>
<td>-0.011***</td>
<td>0.005</td>
<td>-0.006*</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.003)</td>
<td>(0.004)</td>
<td>(0.006)</td>
<td>(0.003)</td>
</tr>
<tr>
<td>Test diff btw samples</td>
<td></td>
<td>***</td>
<td></td>
<td></td>
<td>***</td>
<td>**</td>
</tr>
<tr>
<td>Observations</td>
<td>2,530,000</td>
<td>1,624,000</td>
<td>2,974,000</td>
<td>1,180,000</td>
<td>1,276,000</td>
<td>2,878,000</td>
</tr>
</tbody>
</table>

Cluster-robust standard errors
*** p<0.01, ** p<0.05, * p<0.1
CBSA fixed effects included
Crime Coefficient Magnitudes

- Using high-income households as an example:
  - A 18.2% decline in central city crime from 1988 to 2008 (average for our sample) → 0.6 percentage point increase in share of moves to central city
  - A 43% decline in crime (average of 10 biggest CBSAs) → 1.4 percentage point increase
Results for high-income and college-educated households robust to “double selection” method of Belloni, Chernozhukov and Hansen (2014), a data driven method to address threat of time-varying omitted variables.

• Identifies all variables and interactions among them correlated with move to central city and/or violent crime through LASSO regressions.

• Re-estimate regressions with union of variables that are correlated with crime and residential choices.
5. Move to Central City Model

Results Robust to Alternative Models/Samples

- Inclusion of time-varying CBSA characteristics in addition to central city characteristics

- Sub-Samples
  - Sample of 100 largest CBSAs
  - Sample of 2000 and 2010 moves
  - Sample of movers from outside the CBSA

→ Crime coefficients larger for all three of these sub-samples
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Explaining Moves to Low-Income or Majority Minority, Central City Neighborhoods

- When violent crime falls, are ‘gentrifier’ households more likely to opt for homes in:
  - Low-income central city neighborhoods
  - Majority minority central city neighborhoods

- Are ‘gentrifier’ households more sensitive to crime than for other households, leading to change in mix of households moving into low-income and majority minority urban neighborhoods.
Explaining Moves to Low-Income or Majority Minority, Central City Neighborhoods

- When violent crime falls, are ‘gentrifier’ households more likely to opt for homes in:
  - Low-income central city neighborhoods **YES**
  - Majority minority central city neighborhoods **YES**

- Are ‘gentrifier’ households *more* sensitive to crime than for other households, leading to change in mix of households moving into low-income and majority minority urban neighborhoods. **YES**
Multinomial Logit Models

\[ Y_{ict}^{inc} = \alpha + \beta \text{CRIME}_{ct-1} + \lambda_1 H_{ict} + \lambda_2 X_{ct} + \kappa_c + \tau_t + \varepsilon_{ict} \]

\[ Y_{ict}^{eth} = \alpha + \beta \text{CRIME}_{ct-1} + \lambda_1 H_{ict} + \lambda_2 X_{ct} + \kappa_c + \tau_t + \varepsilon_{ict} \]

- \( Y_{ict}^{inc} \) takes value of:
  - 1 if a household moves to a low-income central city nbhd
  - 2 if a household moves to a high-income central city nbhd
  - 3 if a household moves to the suburbs

- \( Y_{ict}^{eth} \) takes value of:
  - 1 if a household moves to a majority non-white cc nbhd
  - 2 if a household moves to a majority white cc nbhd
  - 3 if a household moves to the suburbs
6. Multinomial model

Results: High Income vs. Low Income HHs

Table 11: Multinomial Logit Models, Moves by Low-Income and High-Income Households

Panel A: Moves to central city low-income neighborhoods

<table>
<thead>
<tr>
<th></th>
<th>Low-income households</th>
<th></th>
<th>High-income households</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Move to</td>
<td>Move to</td>
<td>Move to</td>
<td>Move to</td>
</tr>
<tr>
<td></td>
<td>low-inc CC</td>
<td>high-inc CC</td>
<td>sub (ref)</td>
<td>low-inc CC</td>
</tr>
<tr>
<td>Violent crime per cap, ln</td>
<td>0.025</td>
<td>-0.099***</td>
<td>-0.073</td>
<td>-0.209***</td>
</tr>
<tr>
<td>Chow test of sig diff</td>
<td></td>
<td></td>
<td></td>
<td>***</td>
</tr>
<tr>
<td>Homicides per cap, ln</td>
<td>0.015</td>
<td>-0.048**</td>
<td>-0.043**</td>
<td>-0.087***</td>
</tr>
<tr>
<td>Chow test of sig diff</td>
<td></td>
<td></td>
<td></td>
<td>***</td>
</tr>
</tbody>
</table>

Panel B: Moves to central city non-white neighborhoods

<table>
<thead>
<tr>
<th></th>
<th>Low-income households</th>
<th></th>
<th>High-income households</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Move to</td>
<td>Move to</td>
<td>Move to</td>
<td>Move to</td>
</tr>
<tr>
<td></td>
<td>non-wht CC</td>
<td>wht CC</td>
<td>sub (ref)</td>
<td>non-wht CC</td>
</tr>
<tr>
<td>Violent crime per cap, ln</td>
<td>-0.029</td>
<td>0.089**</td>
<td>-0.166*</td>
<td>-0.107**</td>
</tr>
<tr>
<td>Chow test of sig diff</td>
<td></td>
<td></td>
<td></td>
<td>***</td>
</tr>
<tr>
<td>Homicides per cap, ln</td>
<td>-0.029</td>
<td>0.021</td>
<td>-0.135***</td>
<td>-0.051**</td>
</tr>
<tr>
<td>Chow test of sig diff</td>
<td></td>
<td></td>
<td></td>
<td>***</td>
</tr>
</tbody>
</table>

Observations 2,530,000 1,624,000

Cluster-robust standard errors
*** p<0.01, ** p<0.05, * p<0.1
CBSA fixed effects included

To interpret magnitude ➔
Using 20.4% decline in homicide, yields increase in relative odds of moving to low-inc cc tract instead of sub of 1%.
### 6. Multinomial model

#### Results: College Grads vs. Less Educated

Table 12: Multinomial Logit Models, Moves by Non-College and College Households

**Panel A: Moves to central city low-income neighborhoods**

<table>
<thead>
<tr>
<th></th>
<th>Non-college households</th>
<th>College households</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>low-inc CC</td>
<td>high-inc CC</td>
</tr>
<tr>
<td>Violent crime per cap, In</td>
<td>0.011</td>
<td>-0.0962***</td>
</tr>
<tr>
<td>Chow test of sig diff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homicides per cap, In</td>
<td>0.008</td>
<td>-0.039**</td>
</tr>
<tr>
<td>Chow test of sig diff</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Panel B: Moves to central city non-white neighborhoods**

<table>
<thead>
<tr>
<th></th>
<th>Non-college households</th>
<th>College households</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>low-inc CC</td>
<td>high-inc CC</td>
</tr>
<tr>
<td>Violent crime per cap, In</td>
<td>-0.035</td>
<td>0.087**</td>
</tr>
<tr>
<td>Chow test of sig diff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homicides per cap, In</td>
<td>Not dis</td>
<td>Not disc</td>
</tr>
<tr>
<td>Chow test of sig diff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>2,974,000</td>
<td>1,180,000</td>
</tr>
</tbody>
</table>

Cluster-robust standard errors  
*** p<0.01, ** p<0.05, * p<0.1  
CBSA fixed effects included
6. Multinomial model

Results: White vs. Non White HHs

Table 13: Multinomial Logit Models, Moves by Non-White and White Households

<table>
<thead>
<tr>
<th>Panel A: Moves to central city low-income neighborhoods</th>
<th>Non-white households</th>
<th>White households</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Move to low-inc CC</td>
<td>Move to high-inc CC</td>
</tr>
<tr>
<td>Violent crime per cap, ln Chow test of sig diff</td>
<td>-0.064</td>
<td>-0.175***</td>
</tr>
<tr>
<td>Homicides per cap, ln Chow test of sig diff</td>
<td>0.017</td>
<td>-0.043</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel B: Moves to central city non-white neighborhoods</th>
<th>Non-white households</th>
<th>White households</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Move to non-wht CC</td>
<td>Move to wht CC</td>
</tr>
<tr>
<td>Violent crime per cap, ln Chow test of sig diff</td>
<td>-0.07</td>
<td>-0.025</td>
</tr>
<tr>
<td>Homicides per capita, ln Chow test of sig diff</td>
<td>-0.006</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Observations 1,276,000 2,878,000

Cluster-robust standard errors
*** p<0.01, ** p<0.05, * p<0.1
CBSA fixed effects included
6. Multinomial model

Results

- High-income households are more likely to move into both low-income and majority minority central city neighborhoods when violent crime falls
  - And their choices are substantively and significantly more sensitive to city crime reductions as compared to households with lower incomes.

- College-educated households are more likely to move into both low-income and majority minority central city neighborhoods when homicide rate falls.
  - And their choices are significantly more sensitive to city crime reductions as compared to households without college graduates.

- Less evidence that city violence is differentially affecting residential choices of white vs non-white households.
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Explaining Choice of Specific Neighborhoods

- Combine neighborhood-level violent crime data with neighborhood-level home purchase data from HMDA
  - Austin and Chicago
  - Central city tracts
  - 2000 to 2010

- Explore whether reductions in violent crime in central city neighborhoods are associated with increased home purchases by high-income homebuyers (and more so than low-income homebuyers)
7. Neighborhood choice model

Two Types of Models

- **Tract-level models**
  - When neighborhood crime falls, do we see an increase in the share of home purchases in that neighborhood made by high-income households?

- **Individual choice models**
  - When violent crime in a neighborhood falls, are high-income home buyers more likely to choose that neighborhood from among all neighborhoods in the city?
Two Types of Models

- **Tract-level models**
  - When neighborhood crime falls, do we see an increase in the share of home purchases in that neighborhood made by high-income households? **YES**

- **Individual choice models**
  - When violent crime in a neighborhood falls, are high-income home buyers more likely to choose that neighborhood from among all neighborhoods in the city? **YES**
Crime Variation

7. Neighborhood choice model

Austin, 2000-2010

Density

Percent change in violent crime per capita

Chicago, 2000-2010

Density

Percent change in violent crime per capita
7. Neighborhood choice model

Neighborhood Scatterplots, Austin

Austin 2000-2010, with controls

Percent change in count of high income buyers

Percent change in count of low income buyers

Percent change in share of buyers that are high income

Level change in share of buyers that are high income
7. Neighborhood choice model

Neighborhood Scatterplots, Chicago

Chicago 2000-2010, with controls

- Percent change in count of high income buyers vs. Percent change in violent crime per capita
- Percent change in count of low income buyers vs. Percent change in violent crime per capita
- Percent change in share of buyers that are high income vs. Percent change in violent crime per capita
- Level change in share of buyers that are high income vs. Percent change in violent crime per capita
7. Neighborhood choice model

Tract-level Model Results, Austin

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Percent change in violent crime per capita</th>
<th>Perc point change in share of buyers that are high-income</th>
<th>Perc point change in share of buyers that are high-income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent change in violent crime per capita</td>
<td>-0.224***</td>
<td>-0.0786***</td>
<td>(0.0606)</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.248</td>
<td>-0.121</td>
<td>(0.327)</td>
</tr>
<tr>
<td>Tract 2000 controls included</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>169</td>
<td>169</td>
<td></td>
</tr>
<tr>
<td>R-squared</td>
<td>0.214</td>
<td>0.293</td>
<td></td>
</tr>
</tbody>
</table>

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1
## 7. Neighborhood choice model

### Tract-level Model Results, Chicago

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Percent change in share of buyers that are high-income</th>
<th>Perc point change in share of buyers that are high-income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent change in violent crime per capita</td>
<td>-0.269***</td>
<td>-0.0312</td>
</tr>
<tr>
<td></td>
<td>(0.0854)</td>
<td>(0.0254)</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.145</td>
<td>-0.124</td>
</tr>
<tr>
<td></td>
<td>(0.277)</td>
<td>(0.0823)</td>
</tr>
<tr>
<td>Tract 2000 controls included</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Observations</td>
<td>783</td>
<td>783</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.144</td>
<td>0.071</td>
</tr>
</tbody>
</table>

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1
### Neighborhood choice model

**Individual Choice Model Results, Austin**

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>High-income buyer Choice</th>
<th>Low-income buyer Choice</th>
<th>High-income buyer Choice</th>
<th>Low-income buyer Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Violent crime per capita</td>
<td>-102.3***</td>
<td>-29.76***</td>
<td>-60.10***</td>
<td>-23.27**</td>
</tr>
<tr>
<td></td>
<td>(10.41)</td>
<td>(9.473)</td>
<td>(10.73)</td>
<td>(10.13)</td>
</tr>
<tr>
<td>Tract controls</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>2,323,944</td>
<td>1,088,718</td>
<td>2,299,182</td>
<td>1,077,344</td>
</tr>
<tr>
<td>Tract FE</td>
<td>YES</td>
<td>YES</td>
<td></td>
<td>YES</td>
</tr>
</tbody>
</table>

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1
Has Falling Crime Invited Gentrification?

1. Motivation
2. Background
3. Theory
4. Data
5. Model 1: Move to Central City
6. Model 2: Move to Low-Income, or Majority Minority Central City Neighborhood
7. Model 3: Neighborhood Choice
8. Conclusions
Conclusions

- Falling crime appears to change mix of households opting for central city neighborhoods.
- Falling violence levels can’t explain the full extent of the growth in interest shown by higher income/college-educated/white households for city neighborhoods.
- But greater safety has profoundly shaped the perception of urban environments and urban amenities.
Thank you

Ingrid Gould Ellen

Homer Hoyt

May 19th, 2017

This research has been prepared by a Center affiliated with New York University School of Law and Wagner Graduate School of Public Service, but does not purport to present the schools’ institutional views, if any.
## Appendix I

### Table 1 Central City Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>1990</th>
<th>2000</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total households</td>
<td>84,175</td>
<td>90,864</td>
<td>94,130</td>
</tr>
<tr>
<td>Share minority</td>
<td>27.9%</td>
<td>35.3%</td>
<td>40.4%</td>
</tr>
<tr>
<td>Share foreign born</td>
<td>5.9%</td>
<td>8.5%</td>
<td>10.2%</td>
</tr>
<tr>
<td>Share college education or more</td>
<td>21.8%</td>
<td>24.8%</td>
<td>27.4%</td>
</tr>
<tr>
<td>Share households in poverty</td>
<td>17.3%</td>
<td>16.7%</td>
<td>19.1%</td>
</tr>
<tr>
<td>Share housing units built before 1940</td>
<td>22.2%</td>
<td>19.1%</td>
<td>19.2%</td>
</tr>
<tr>
<td>Share housing units built in last 10 years</td>
<td>16.5%</td>
<td>12.3%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Median gross rent ($2010)</td>
<td>698</td>
<td>718</td>
<td>795</td>
</tr>
<tr>
<td>Median value of owner-occupied housing ($2010)</td>
<td>127,589</td>
<td>141,340</td>
<td>184,839</td>
</tr>
<tr>
<td>Median household income ($2010)</td>
<td>44,084</td>
<td>46,384</td>
<td>44,478</td>
</tr>
<tr>
<td>N</td>
<td>244</td>
<td>244</td>
<td>244</td>
</tr>
</tbody>
</table>
## Appendix II

### Table 4 Household Characteristics

<table>
<thead>
<tr>
<th></th>
<th>All households</th>
<th>High-income households</th>
<th>College households</th>
<th>White households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>40.6%</td>
<td>60.8%</td>
<td>45.1%</td>
<td>42.5%</td>
</tr>
<tr>
<td>Female headed</td>
<td>15.1%</td>
<td>7.1%</td>
<td>6.0%</td>
<td>11.0%</td>
</tr>
<tr>
<td>Presence of children under 18</td>
<td>40.5%</td>
<td>42.6%</td>
<td>29.3%</td>
<td>35.2%</td>
</tr>
<tr>
<td>Household income ($2010)</td>
<td>$24,300</td>
<td>N/A</td>
<td>$40,100</td>
<td>$26,900</td>
</tr>
<tr>
<td>Householder white</td>
<td>69.3%</td>
<td>78.1%</td>
<td>78.2%</td>
<td>N/A</td>
</tr>
<tr>
<td>Householder black</td>
<td>12.3%</td>
<td>7.1%</td>
<td>6.3%</td>
<td>N/A</td>
</tr>
<tr>
<td>Householder Hispanic</td>
<td>10.6%</td>
<td>7.5%</td>
<td>4.9%</td>
<td>N/A</td>
</tr>
<tr>
<td>Householder other non-white</td>
<td>7.8%</td>
<td>7.3%</td>
<td>10.6%</td>
<td>N/A</td>
</tr>
<tr>
<td>Less than high school education</td>
<td>17.3%</td>
<td>8.2%</td>
<td>N/A</td>
<td>12.1%</td>
</tr>
<tr>
<td>College education or more</td>
<td>28.4%</td>
<td>43.2%</td>
<td>N/A</td>
<td>32.1%</td>
</tr>
<tr>
<td>Foreign born</td>
<td>14.8%</td>
<td>12.8%</td>
<td>16.0%</td>
<td>5.5%</td>
</tr>
<tr>
<td>Employed</td>
<td>75.8%</td>
<td>88.6%</td>
<td>87.2%</td>
<td>78.7%</td>
</tr>
<tr>
<td>Age less than 35</td>
<td>52.5%</td>
<td>46%</td>
<td>54%</td>
<td>52%</td>
</tr>
<tr>
<td>Age 35 to 65</td>
<td>41.0%</td>
<td>50.3%</td>
<td>42.1%</td>
<td>40.6%</td>
</tr>
<tr>
<td>Age over 65</td>
<td>6.5%</td>
<td>3.7%</td>
<td>3.9%</td>
<td>7.4%</td>
</tr>
<tr>
<td>N</td>
<td>4,154,000</td>
<td>1,624,000</td>
<td>1,180,000</td>
<td>2,878,000</td>
</tr>
</tbody>
</table>
How to Predict Gentrification: Look for Falling Crime

Emily Badger  @emilymbadger  JAN. 5, 2017

Everyone has theories for why well-educated, higher-income professionals are moving back into parts of cities shunned by their parents’ generation.

Perhaps their living preferences have shifted. Or the demands of the labor market have, and young adults with less leisure time are loath to waste it commuting. Maybe the tendency to postpone marriage and children has made city living more alluring. Or the benefits of cities themselves have improved.