

FURMAN CENTER
FOR REAL ESTATE & URBAN POLICY
NEW YORK UNIVERSITY
SCHOOL OF LAW • WAGNER SCHOOL OF PUBLIC SERVICE



NYU Wagner

Robert F. Wagner Graduate School of Public Service

A photograph of a house with grey horizontal siding and two windows with white frames. The front doors are boarded up with plywood. One door has a small hole in the wood. A yellow star is drawn on the siding above the right door. The text 'Do Foreclosures Cause Crime?' is overlaid in white serif font.

Do Foreclosures Cause Crime?

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Miami, FL

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Do Foreclosures Cause Crime?



Research Questions

- Do foreclosures increase crime?
 - Are some types of crimes more affected?
 - Does the effect of a foreclosure notice differ depending on its outcome?
 - How much does foreclosure concentration matter?
 - Do foreclosures have different effects in different types of neighborhoods?
 - Preview of Findings: Increased foreclosure activity leads to higher levels of crime.
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Existing Evidence on Foreclosures and Crime

- Immergluck and Smith (2006) find that higher foreclosure rates are associated with higher levels of violent crime in Chicago census tracts.
- Goodstein and Lee (2009) find that an increase in the county bank-owned (REO) rate is associated with a subsequent increase in burglaries per capita.
- Cui (2010) finds that the number of violent crimes occurring within 250 ft of properties in Pittsburgh increases once the property becomes REO.

Geographic Unit of Analysis: Blockface



Foreclosure



Street



Police Precinct



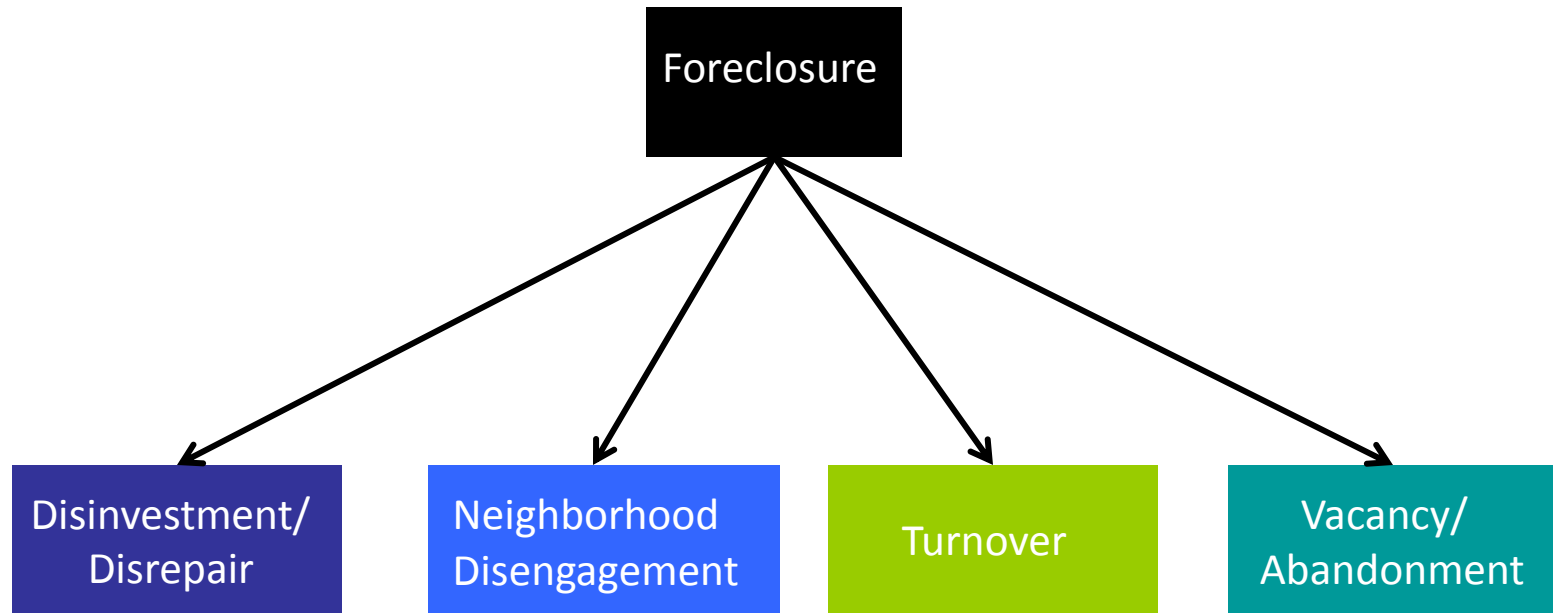
Blockface



Crime

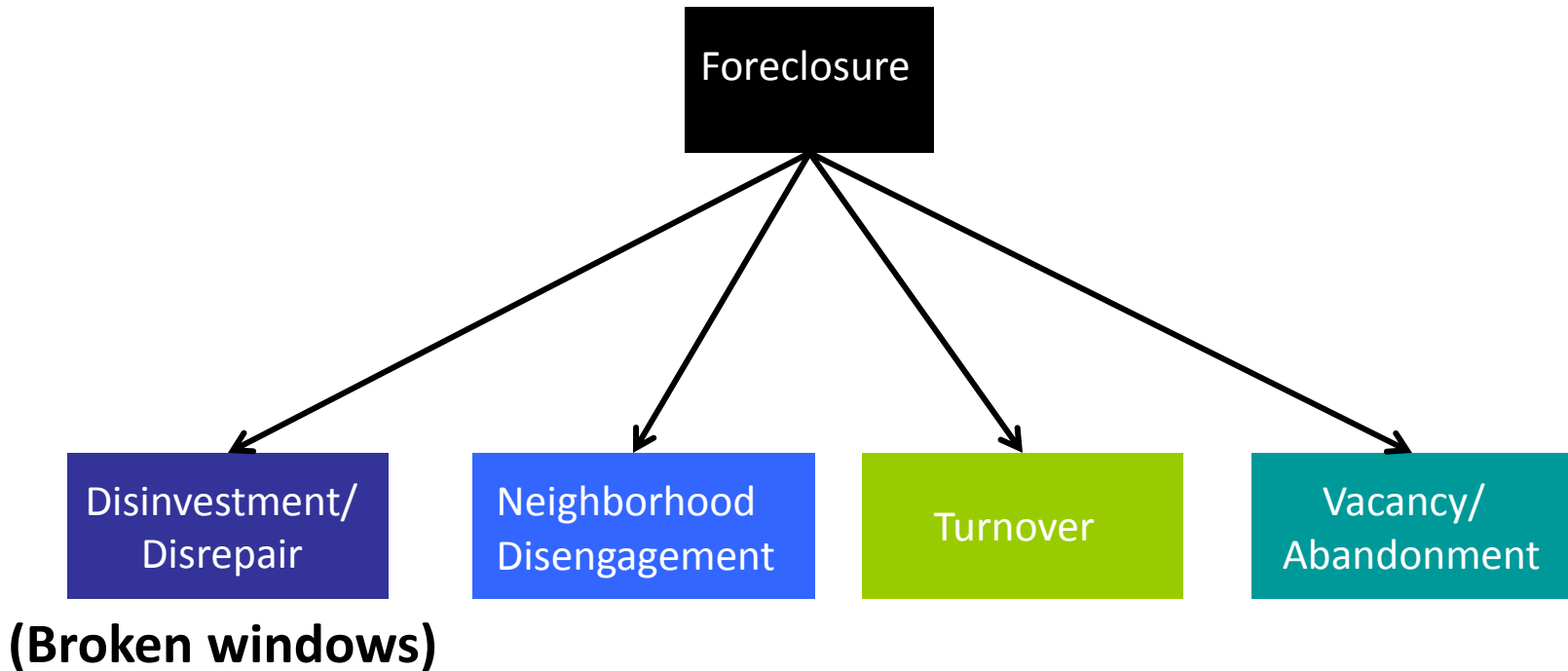


How might foreclosures affect crime?



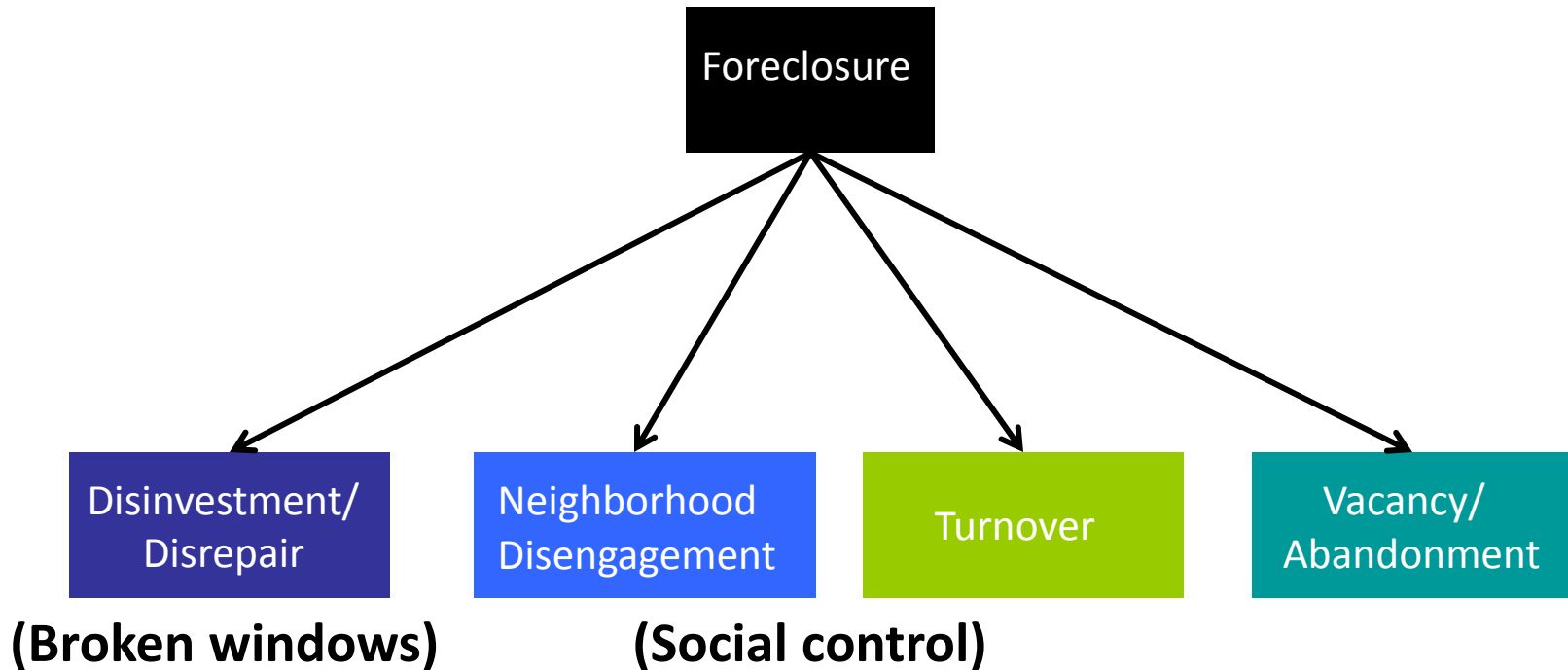
$$y_{bt} = \sum_i \left[\mathbf{1}(V_{ibt}(\text{Crime}) - V_{ibt}(\text{NoCrime}) - C_{ibt}(\text{Crime}) \leq \varepsilon_{ibt}) \right]$$

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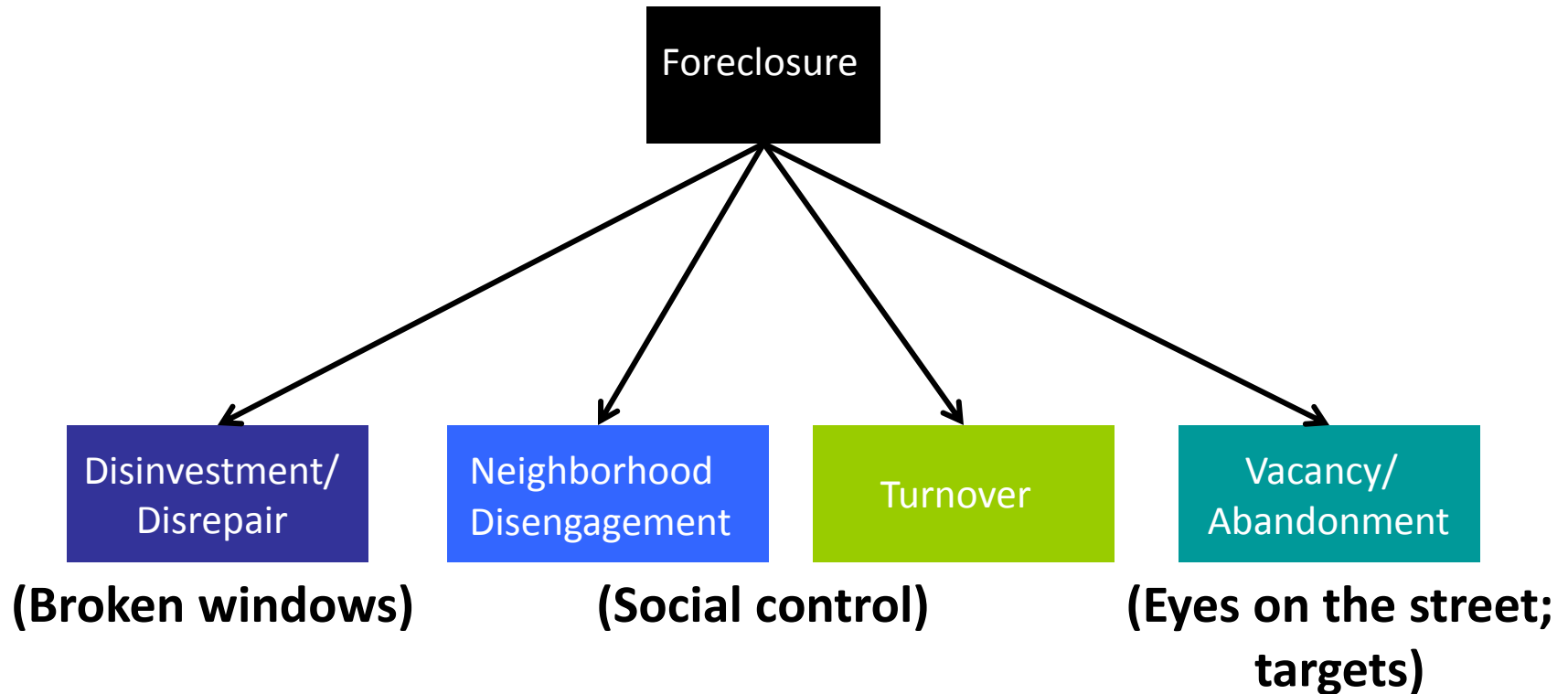
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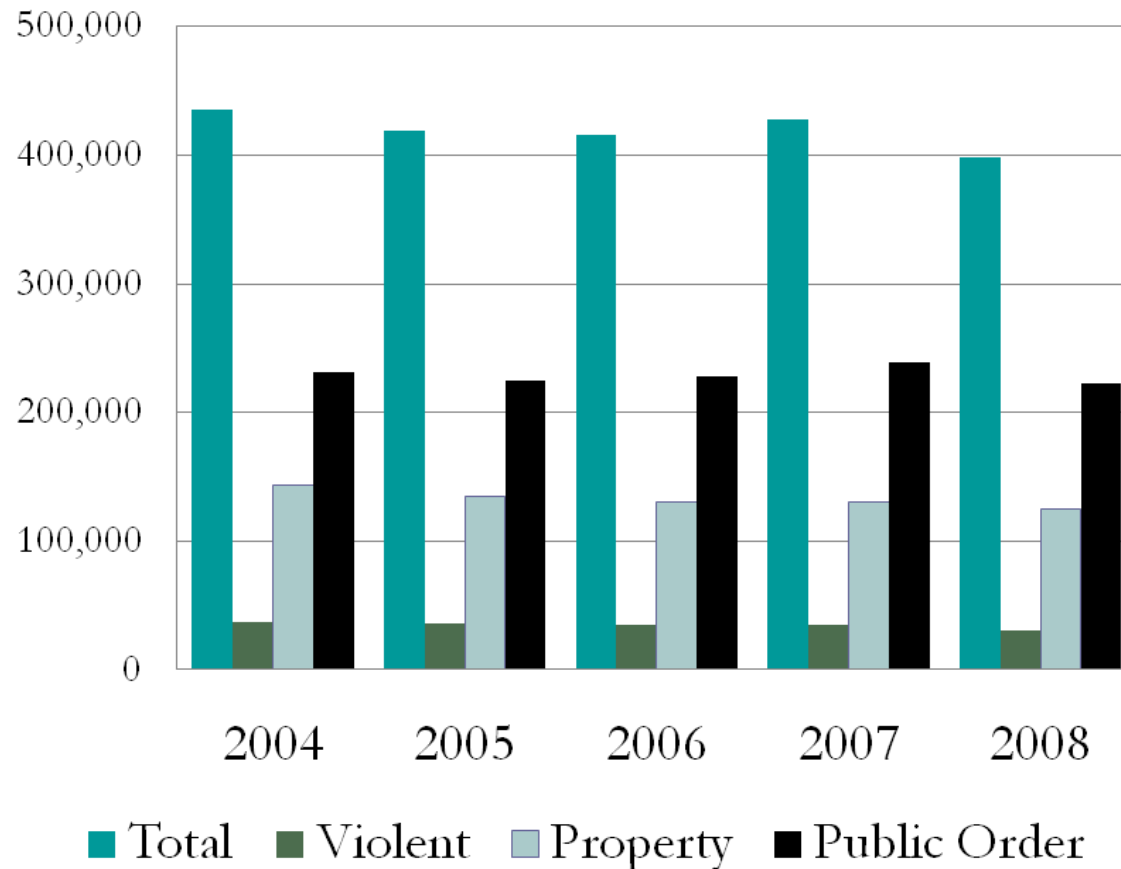
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Geocoded NYPD Crime Data: 2004-2008

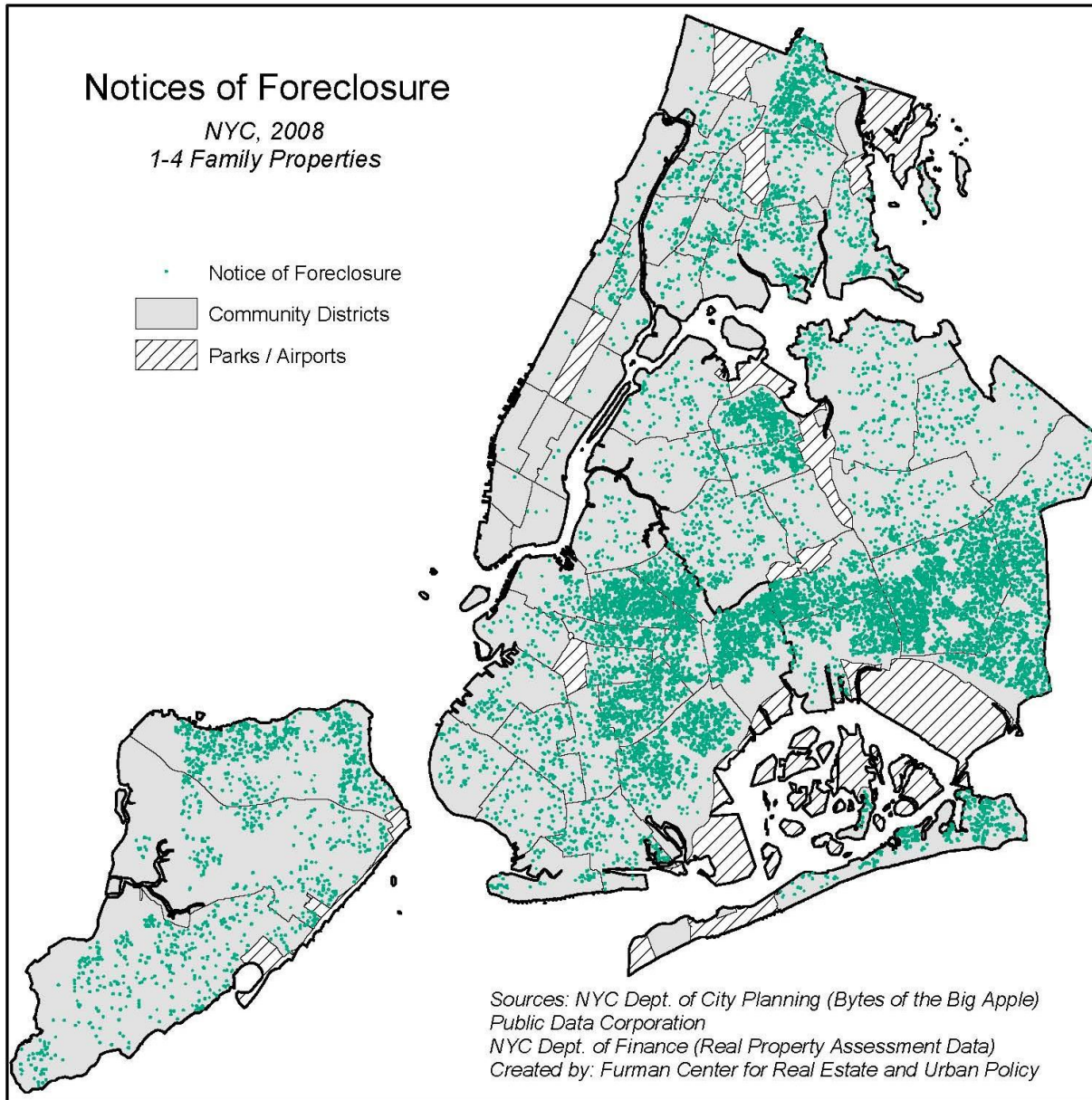
Crime Complaints by Crime Type



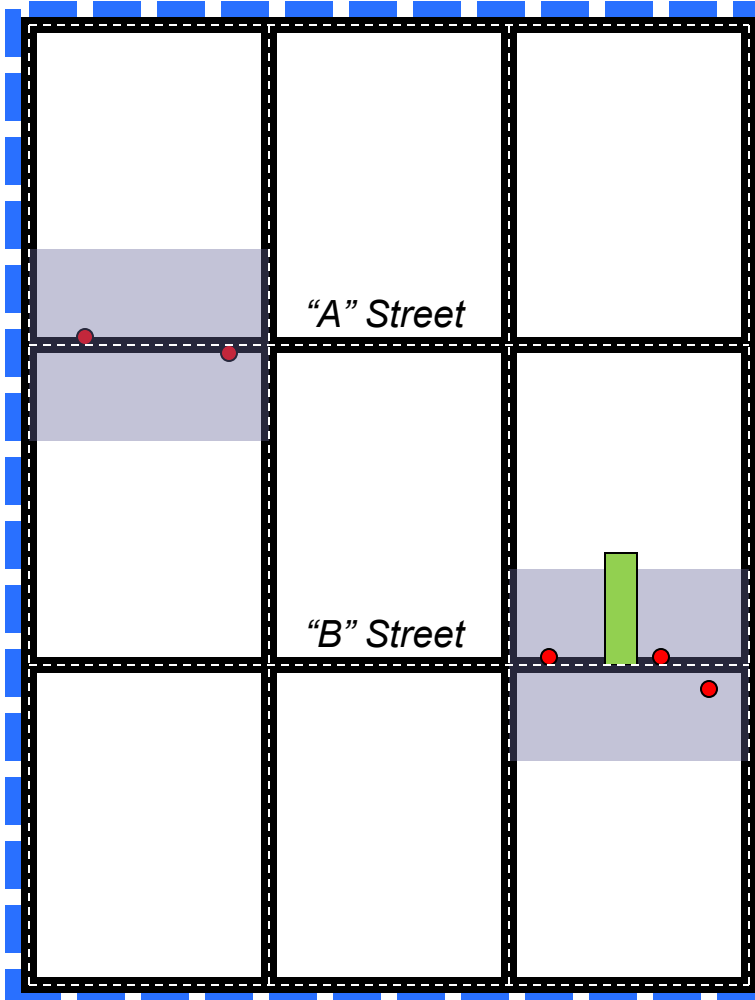
Measures of Foreclosure Activity

- *Cumulative Foreclosure Starts*
 - Number of foreclosure notices issued in past six quarters
 - *Active Foreclosures*
 - Number of unresolved foreclosures present at end of prior quarter
 - *REO Properties*
 - Number of bank-owned properties present at end of prior quarter.
-

Where do foreclosures happen?



Empirical Strategy (1)



Foreclosure



Street



Police Precinct



Blockface



Crime



Empirical Strategy (1)



Empirical Strategy (2)

- Difference-in-Difference Model of Blockface Crime:

$$y_{bpt} = \alpha + \beta X_{bpt-1} + \gamma Z_{bnt} + B_b + T_{pt} + \varepsilon_{bpt}$$

Independent Variables

- Lagged foreclosure activity on blockface, X_{bpt-1}
- Blockface characteristics, Z_{bnt}
- Blockface fixed effects, B_b
- Precinct*quarter fixed effects, T_{pt}

Results: Do foreclosures on a blockface lead to increased crime?

	Total Crime	Violent Crime	Property Crime	Public Order Crime
Cumulative Foreclosures	0.0157 *** (0.0033)	0.0025 *** (0.0009)	0.0021 (0.0015)	0.0086 *** (0.0026)
Blockface Total Units	-0.0003 *** (0.0001)	-4.8E-05 ** (2.0E-05)	-4.8E-06 (3.2E-05)	-0.0002 *** (0.0001)
N	454,856	454,856	454,856	454,856
R ²	0.753	0.328	0.472	0.690
Blockface FE	Y	Y	Y	Y
Precinct*YRQ FE	Y	Y	Y	Y

Models include demolition permits, new building permits, and liquor licenses.

Robustness Check: Do Future Foreclosures Cause Past Crime?

	Total Crime	
	(1)	(2)
Cumulative Foreclosure Starts	0.0266*** (0.0050)	
Future Foreclosure Starts		0.0047 (0.0043)
R ²	0.746	0.746
Sample Size	310,220	310,220
Blockface FE	YES	YES
<i>Models include blockface total units, demolition permits, new building permits, and liquor licenses.</i>		

Results: Does the outcome of a foreclosure notice matter?

Total Crime:	Cumulative Foreclosures	Active Foreclosures	REOs
Foreclosures	0.0157 *** (0.0033)	0.0167 *** (0.004)	0.0447 *** (0.010)
Blockface Total Units	-0.0003 *** (0.0001)	-0.0003 *** (7.5E-5)	-0.0003 *** (7.5E-5)
N	454,856	434,228	434,228
R ²	0.753	0.753	0.753
Blockface FE	Y	Y	Y
Precinct*YRQ FE	Y	Y	Y

Models include demolition permits, new building permits, and liquor licenses.

Results: Does the intensity of foreclosure activity matter?

Blockface REOs:	Total Crime	Violent Crime	Property Crime	Public Order Crime
1 REO	0.0345 ** (0.015)	0.0100 ** (0.004)	0.0075 (0.007)	0.0193 (0.012)
2 REOs	0.0705 ** (0.029)	0.0124 (0.008)	0.0110 (0.013)	0.0337 (0.023)
3 or more REOs	0.2016 *** (0.048)	0.0369 *** (0.013)	-0.0077 (0.021)	0.1619 *** (0.038)
Blockface Total Units	-0.0003 *** (7.5E-5)	-4.8E-05 ** (2.0E-5)	-2.6E-05 (3.3E-5)	-2.2E-04 *** (5.8E-5)
N	434,228	434,228	434,228	434,228
R ²	0.753	0.329	0.470	0.691
Blockface FE	Y	Y	Y	Y
Precinct*YRQ FE	Y	Y	Y	Y

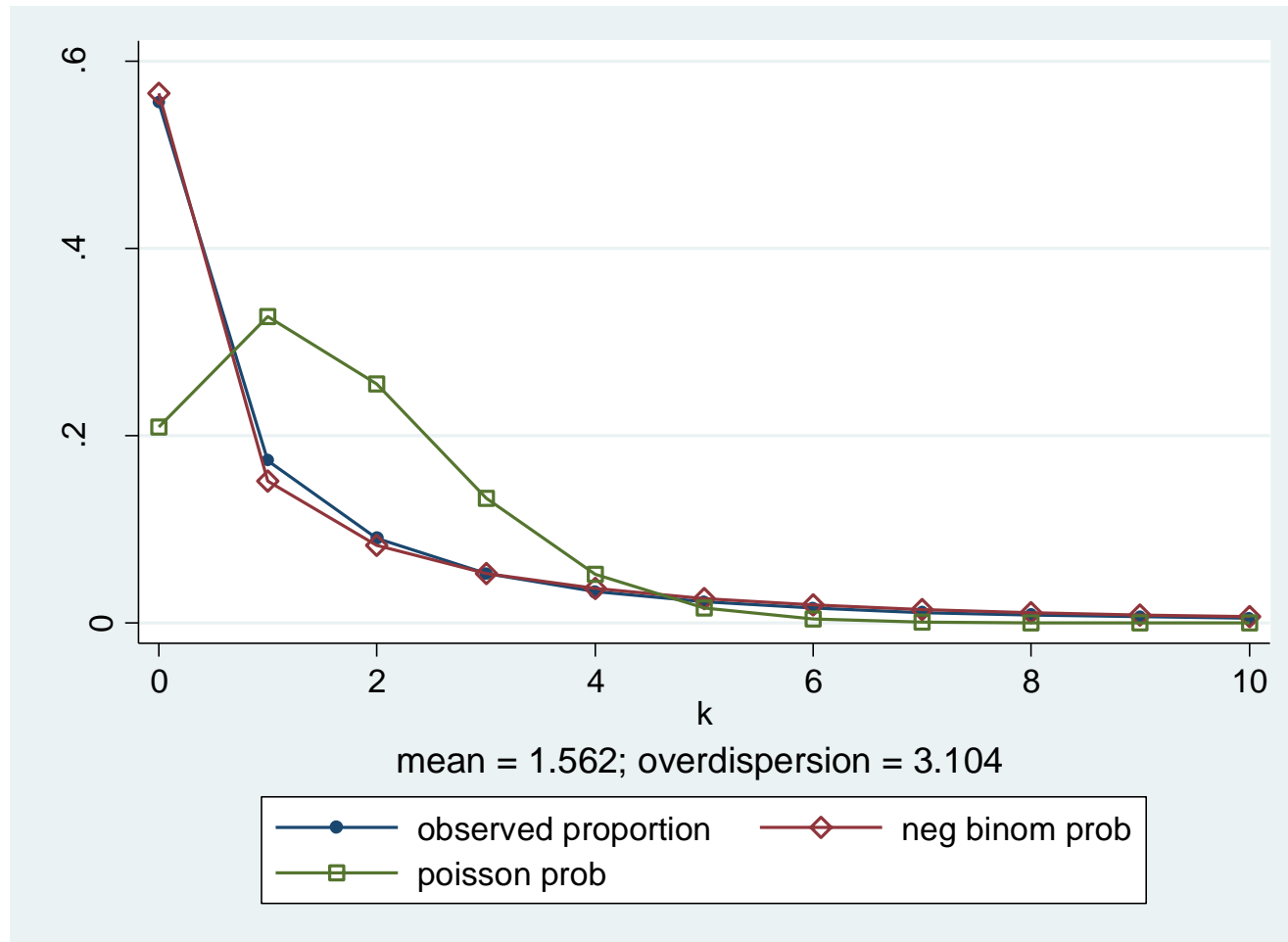
Models include demolition permits, new building permits, and liquor licenses.

Results: Does the type of neighborhood matter?

Total Crime:	Cumulative Foreclosures	Active Foreclosures	REOs
Foreclosures	0.0167 *** (0.005)	0.0173 *** (0.005)	0.0614 *** (0.015)
Foreclosures * Low crime precinct	0.0482 ** (0.022)	0.0664 *** (0.026)	0.3203 *** (0.110)
Foreclosures * High crime precinct	-0.0042 (0.007)	-0.004 (0.007)	-0.0367 * (0.020)
N	454,856	434,228	434,228
R ²	0.753	0.753	0.753
Blockface FE	Y	Y	Y
Precinct*YRQ FE	Y	Y	Y

Models include blockface total units, demolition permits, new building permits, and liquor licenses.

Blockface Crime Distribution vs. Negative Binomial and Poisson Distributions



Does the Estimation Technique Matter?

Negative Binomial Results

Total Crime:	Cumulative Foreclosures	Active Foreclosures	REOs
Mean-deviated Foreclosures	0.0055 *** (0.0021)	0.0057 ** (0.0023)	0.0117 (0.0074)
Mean-deviated Total Blockface Units	0.0E00 (0.0E00)	-4.4E-05 *** (1.7E-5)	-2.8E-05 *** (1.6E-5)
N	454,856	434,228	434,228
Blockface Means	Y	Y	Y
Precinct*YRQ FE	Y	Y	Y

Models include demolition permits, new building permits, and liquor licenses.

Putting the Effect Sizes in Context

Effect Sizes				Average Blockface-Quarter Characteristics	
	Total Crime	Violent Crime	Public Order Crime	2008	Means
Cumulative Foreclosure Starts	0.9%	1.6%	0.8%	Crime Complaints	1.4
Active Foreclosures	1.0%	2.1%	0.8%	Violent Crimes	0.1
REOs	2.6%	5.7%	2.8%	Public Order Crimes	0.7
				Cumulative Foreclosure Starts	0.2
				Active Foreclosures	0.2
				REOs	0.1

Next Steps

- Test if crime drawn from neighboring areas
 - Test if crime decreases on adjoining blockfaces
 - Extend analysis through 2009 and 2010
 - Extend analysis to other cities
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Bonus Slide 1: Blockface Characteristics

	2004	2005	2006	2007	2008
Crime Complaints	1.516	1.464	1.454	1.501	1.396
Violent Crimes	0.129	0.126	0.124	0.123	0.105
Property Crimes	0.504	0.478	0.463	0.465	0.449
Public Order Crimes	0.771	0.757	0.765	0.806	0.744
Cumulative Foreclosure Starts (previous 6 quarters)	0.113	0.105	0.114	0.159	0.232
Active Foreclosures	0.096	0.086	0.094	0.148	0.247
REOs	0.010	0.012	0.020	0.040	0.051
Demolition Permits	0.006	0.008	0.009	0.009	0.004
New Building Permits	0.028	0.038	0.035	0.032	0.013
Liquor Licenses	0.010	0.026	0.037	0.045	0.056
Number of Blockface- Quarters	356,972	356,152	356,080	356,308	356,572

Bonus Slide 2: Blockface Characteristics

Total *Lis Pendens* Activity 2004-2008

	All				
	Blockfaces	zero LPs	1 LP	2 LPs	3+ LPs
Mean Number of LPs	0.54	0.00	1.00	2.00	5.24
Number of Blockfaces	89,143	70,959	8,082	3,959	6,143
Number of Buildings	11.29	8.56	17.49	19.80	29.10
Share 1 Family Buildings	30%	28%	43%	42%	38%
Share 2-4 Family Buildings	29%	25%	45%	47%	53%
Share 5+ Family Buildings	12%	14%	6%	5%	5%
Share Co-ops	3%	4%	0%	0%	0%
Share Condos	2%	3%	0%	0%	0%
Share Mixed Use Buildings	7%	8%	6%	5%	3%
Number of Churches	0.08	0.07	0.09	0.10	0.16
Number of Vacant Lots	0.39	0.33	0.52	0.57	0.91
Share of Units that are Residential	77%	72%	95%	95%	97%