The Effect of Vacant Building Demolitions on Crime Under Depopulation

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Research Question

- What is the impact of municipally implemented demolitions of vacant residential buildings on crime both locally and globally?
  - Do vacant building demolitions reduce the level of crime on a block?
  - Is this reduction offset by an increase in crime on surrounding blocks?

Methodology

- Quasi experimental approach: control group is blocks that have a permit pending for a demolition
- Fixed effects estimation of block level monthly panel data from Saginaw, Michigan
- Analysis of spatial effects using a spatial lag for demolitions

Mechanisms through which demolitions may impact criminal behavior:

- **Rational choice theory of crime**: criminals maximize their economic well-being by comparing the benefits and costs of crime
- **Broken Windows Theorem**: One vacant building or lot lying decrepit leads to further crime solely based on the signal that that there is little/no cost to further destruction
- Note: **Social Disorganization Theory** implies that demolitions may not equivalently reduce the crime caused by a vacant building.
  - Social capital and cohesion are disrupted when a neighborhood loses population and the social controls that put limits on criminal activity deteriorate. Not counteracted by a demolition.

Data: Saginaw, Mi

- Number one most violent city in America from 2003-2010
- Saginaw could face a $19.9 million deficit by 2014 if leaders do not adjust to declining revenues and a shrinking population

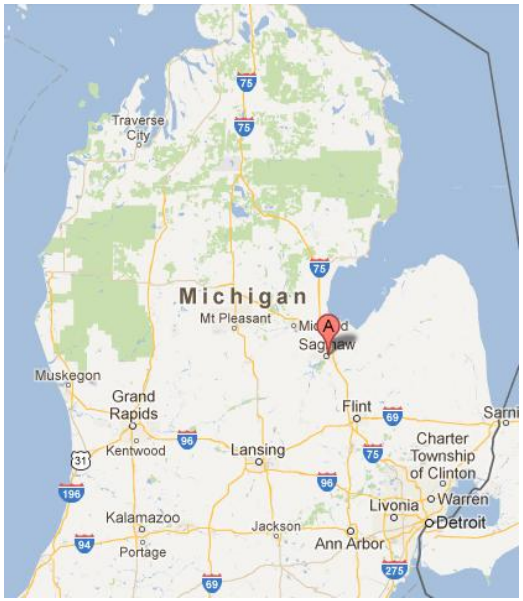
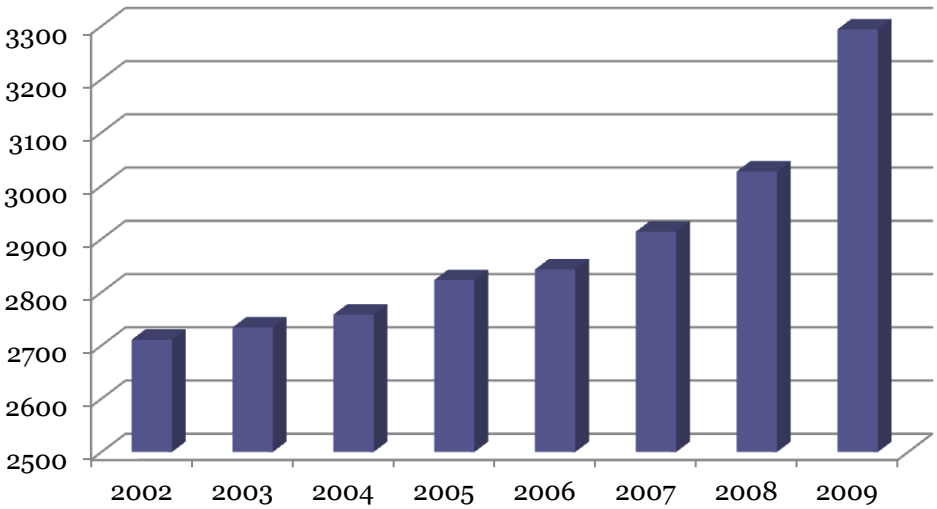


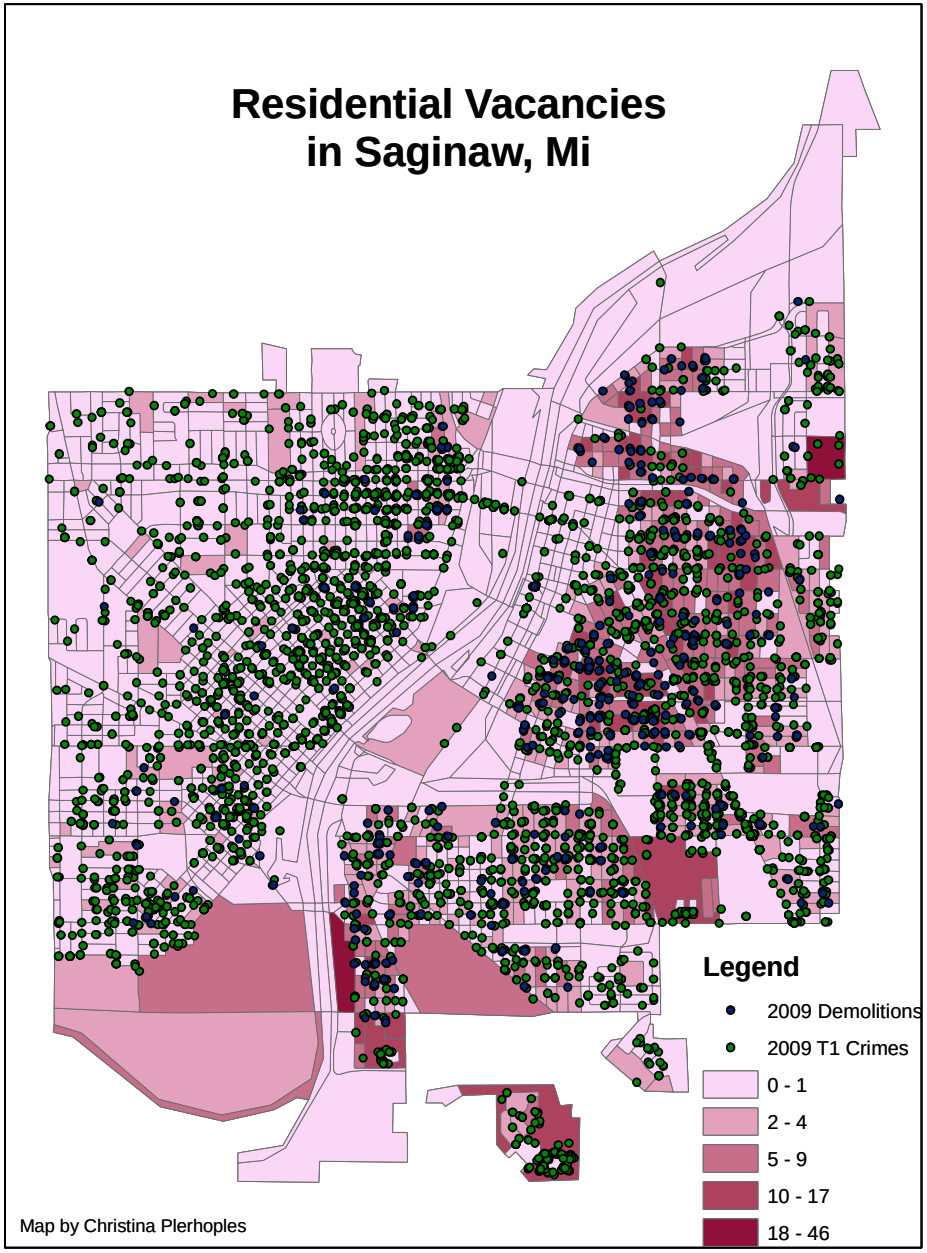
Figure 1: Total Residential Vacancies in Saginaw, Michigan



Data, cont.

- Monthly block level panel data for every block in the city of Saginaw for the months January 2008-June 2009

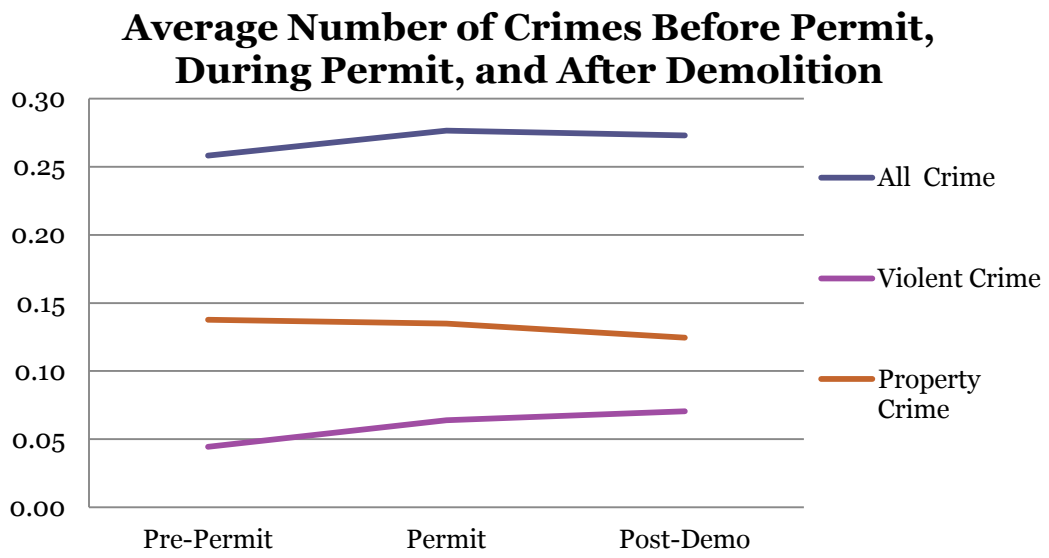
Number of Months	18
Number of Blocks	1,868
Number of Block Groups	74
Number of Census Tracts	21



Results

Average Number of Crimes Before a Permit, During a Permit, and After a Demolition

	Pre-Permit	Permit	Post-Demo	Blocks with a Demo, All Months	All Blocks, All Months
All Crime	0.26	0.28	0.27	0.26	0.24
Violent Crime	0.04	0.06	0.07	0.06	0.05
Property Crime	0.14	0.13	0.12	0.12	0.12



Poisson Fixed Effects at the Block Level

	(1) All Crime	(2) Violent Crime	(3) Property Crime
Permits	0.049	-0.124	0.164
	(0.085)	(0.148)	(0.108)
Demolitions	-0.176	-0.089	-0.327*
	(0.112)	(0.198)	(0.191)
Observations	28,656	17,496	23,040
Number of objectid	1,592	972	1,280

Robust standard errors in parentheses, clustered at the block level. * significant at 10%; ** significant at 5%; *** significant at 1%. Sample is a panel of all blocks in Saginaw, Mi from January 2008- June 2009. Crime offenses refer to the number of incidents on each block in each month.

Poisson Fixed Effects at the Block Group Level

	(1) All Crime	(2) Violent Crime	(3) Property Crime
Permits	0.007	-0.0266**	0.0300**
	(0.007)	(0.013)	(0.013)
Demolitions	0.014**	0.025**	0.006
	(0.007)	(0.011)	(0.009)
Observations	1,314	1,296	1,314
Number of Block Groups	73	72	73

Robust standard errors in parentheses, clustered at the block group level. * significant at 10%; ** significant at 5%; *** significant at 1%. Sample is a panel of all block groups in Saginaw, Mi from January 2008- June 2009. Crime offenses refer to the number of incidents in each block group in each month.

Poisson Fixed Effects at the Census Tract Level

	(1) All Crime	(2) Violent Crime	(3) Property Crime
Permits	0.002	-0.005	0.008
	(0.003)	(0.004)	(0.006)
Demolitions	0.000	0.001	-0.003
	(0.003)	(0.004)	(0.006)
Observations	360	342	360
Number of objectid	20	19	20

Robust standard errors in parentheses, clustered at the census tract level. * significant at 10%; ** significant at 5%; *** significant at 1%. Sample is a panel of all census tracts in Saginaw, Mi from January 2008- June 2009. Crime offenses refer to the number of incidents in each census tract in each month.

Poisson Fixed Effects at the Block Level with Two Spatial Lags

	(1) All Crime	(2) Violent Crime	(3) Property Crime
Permits on Block	0.035	-0.092	0.126
	(0.086)	(0.148)	(0.108)
Demolitions on Block	-0.206*	-0.130	-0.338*
	(0.110)	(0.199)	(0.194)
Demolitions-Permits on Block	-0.241	-0.038	-0.463*
	(0.152)	(0.266)	(0.240)
Permits in Block Group	0.009	-0.027	0.028**
	(0.009)	(0.017)	(0.014)
Demolitions in Block Group	0.021**	0.029*	0.023
	(0.009)	(0.015)	(0.016)
Demolitions-Permits in Block Group	0.011	0.056**	-0.006
	(0.015)	(0.025)	(0.024)
Permits in Census Tract	0.000	0.007	0.001
	(0.004)	(0.010)	(0.006)
Demolitions in Census Tract	-0.005	-0.012	-0.006
	(0.004)	(0.008)	(0.007)
Demolitions-Permits in Census Tract	-0.005	-0.019	-0.006
	(0.007)	(0.015)	(0.011)
Observations	28,656	17,496	23,040
Number of objectid	1,592	972	1,280

Conclusion

- Demolitions decrease property crime at the block level, but this decrease is offset by increases in crime on other blocks so the aggregate effect is zero
- For every demolition, there is
  - A reduction of .64 property crimes per year at the block level
  - An increase of .04 violent crimes per year at the block group level
  - No aggregate effect at the census tract level

Thank you!

Urban farm in Detroit

Identification of Causality

- Demolitions may not be randomly chosen and buildings are more likely to be put on the demolition list if there is higher crime
  - Based on discussions with the city planners and analysis of the data, once on the permit list demolitions appear to be randomly implemented
    - I compare those blocks with a demolition to those that have a house permitted for a demolition

Background

- Urban depopulation is causing large numbers of vacant and abandoned buildings in many rust belt cities
  - Detroit, Mi: 40% of the land is deemed vacant or sparsely populated – population dropped from 1.8 million in 1950 to 713,777 in 2010
- Glaeser and Gyorko, 2005
  - Point to the durability of housing as to why decline is more persistent than growth

Crime Delineations

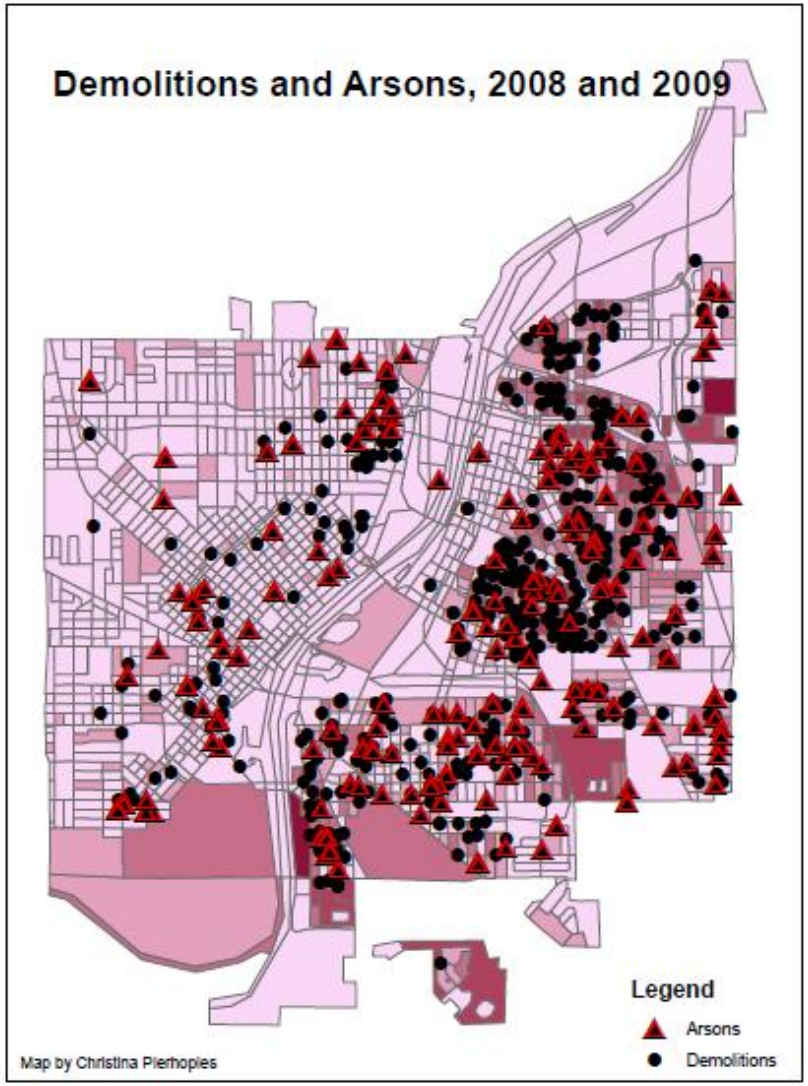
- All crime
- Violent crime
  - Murder/manslaughter, forcible rape, robbery, simple assault, aggravated assault
- Property crime
  - Burglary, motor vehicle theft, stolen property, destruction of property, etc.

Background, cont.

- Policy Response: Demolitions
  - Nearly $200 million spent on vacant building demolitions between 2008 and 2011 under the Neighborhood Stabilization Program alone
- One of the main justifications is that demolitions reduce the crime caused by vacant buildings.
  - Is this true?

Arson

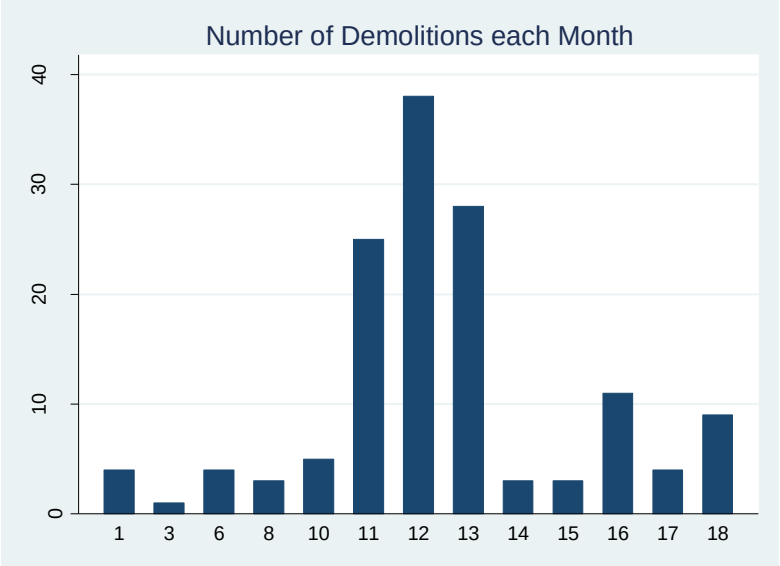
- One way in which demolitions are directly endogenous to crime: arson
  - When a house undergoes arson, it is immediately demolished
    - Run regressions with and without arson
    - Removed emergency (fire) demolitions from data set
  - Cannot account for the reduction in arsons caused by a demolition
    - The structure of the demolition policy may incentivize demolitions as well

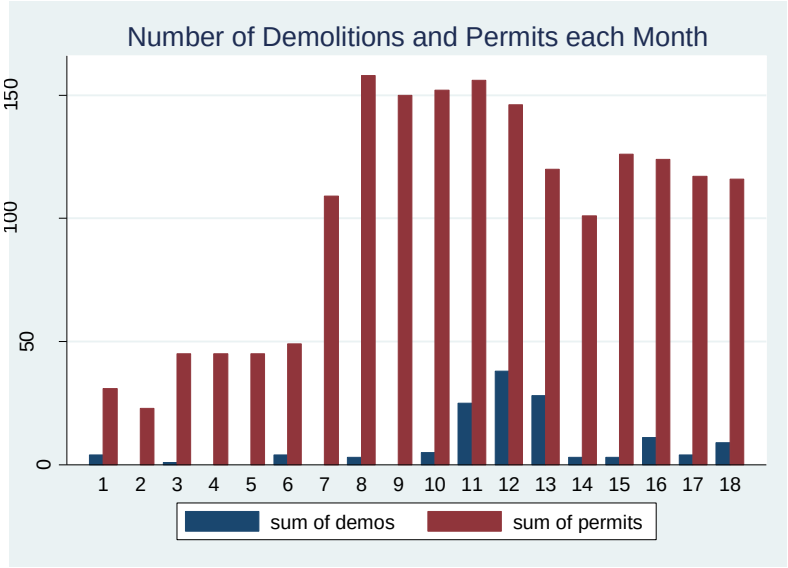


Previous Research

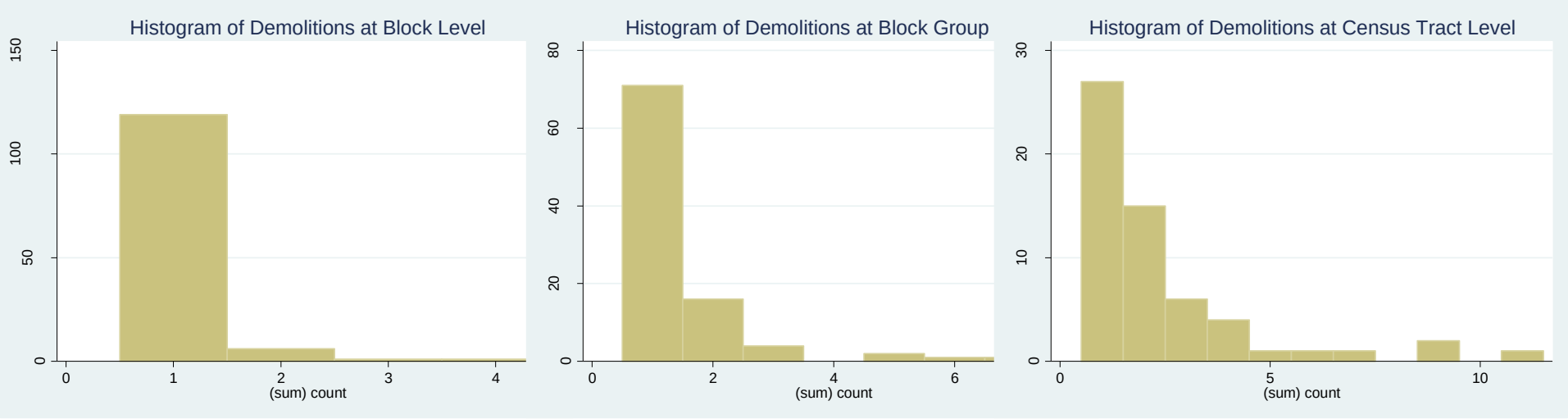
- Vacant property and crime:
  - Winthrop and Herr, 2009, Immergluck and Smith, 2005, Spelman, 1993, Various Policy Papers
- Identification:
  - Jacob, 2003 (AER), Benmelech, Berrebi, and Klor, 2010, Hartley, 2010

Variable (per block/month)	No. of Obs.	Total	Mean	Std. Dev.	Min	Max
All Crimes	33,642	8,042	0.34	0.85	0	24
Violent Crimes	33,642	1,649	0.11	0.45	0	11
Property Crimes	33,642	3,953	0.15	0.48	0	15
Demolitions	33,664	138	0.00	0.08	0	4
Permits	33,642	112	0.01	0.10	0	4
Permit Time among Permitted Blocks	112	11,121	5.52	4.30	0	17





Demolitions on Block, Block Group, and Census Tract



Crime on Blocks w/ a Demolition vs. Blocks that Never have a Demolition

	Blocks with no Demolitions	Blocks with > 0 Demolitions	P-Value of Difference
All Crimes	0.237	0.274	0.007
	(0.003)	(0.013)	
All Crimes Sans Arson	0.230	0.258	0.035
	(0.003)	(0.012)	
Violent Crimes	0.048	0.061	0.020
	(0.001)	(0.005)	
Property Crimes	0.117	0.131	0.119
	(0.002)	(0.009)	
Property Crimes Sans Arson	0.117	0.131	0.119
	(0.002)	(0.009)	

Standard errors are listed in parentheses below the means

Crime on Block-Months w/ Demolition vs. Block-Months w/ Permit

	Blocks with Permits	Blocks with Demolitions	P-Value of Difference
All Crimes	0.313	0.242	0.221
	(0.015)	(0.042)	
All Crimes Sans Arson	0.289	0.219	0.205
	(0.015)	(0.041)	
Violent Crimes	0.077	0.050	0.282
	(0.007)	(0.019)	
Property Crimes	0.169	0.123	0.277
	(0.011)	(0.032)	
Property Crimes Sans Arson	0.169	0.123	0.277
	(0.169)	(0.123)	

Once on list, timing of demolitions not dependent on changes in Crime:

Block Months before a demolition occurs:	Fast Demos (130 Obs.)	Slow Demos (319 Obs.)	Difference	P-Value
Change in All Crimes	0.003	0.000	0.003	0.971
	(0.953)	(0.629)		
Change in All Crimes Sans Arson	0.003	-0.012	0.014	0.851
	(0.953)	(0.621)		
Change in Violent Crimes	0.020	-0.001	0.021	0.554
	(0.414)	(0.297)		
Change in Property Crimes	-0.023	0.001	-0.024	0.669
	(0.650)	(0.500)		
Change in Property Crimes Sans Arson	-0.023	0.001	-0.024	0.669
	(0.650)	(0.500)		

Standard errors are listed in parentheses below the means

Econometric Specification

$$CrimeIncidents_{it} = \beta_1 + \beta_2 demosblock_{it} + \beta_3 permitsblock_{it} + \boxed{\beta_4 demosblock_{it} x permitsblock_{it}} + \theta_i + \theta_t + u_{it}$$

- Where $\theta_i \,\&\, \theta_t$ are block and year fixed effects
- The interaction term (highlighted) tells me how the effects of demolitions on crime varies by the permit level, i.e. the effect of demolitions on permitted blocks that had a demolition vs. permitted blocks that did not

Data Example

Flow Variable:

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Demolitions	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0
Permits	0	1	1	1	1	1	0	0	0	0	1	1	1	1	1	0	0	0
Demolitions x permits	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0

Stock Variable:

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Demolitions	0	0	0	0	0	1	1	1	1	1	1	1	1	1	2	2	2	2
Permits	0	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2
Demolitions x permits	0	0	0	0	0	1	1	1	1	1	2	2	2	2	4	4	4	4

Stock Variable at Block Group Level:

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Demolitions	0	0	1	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4
Permits	1	1	1	2	3	3	3	3	3	3	4	4	4	4	4	4	4	4
Demolitions x permits	0	0	1	2	3	3	3	6	6	6	8	12	12	12	12	16	16	16

Spatial Lag Specification

$$CrimeIncidents_{it} = \beta_1 + \beta_2 demosblock_{it} + \beta_3 demosblockgrp_{it} +$$
$$\beta_4 demostract_{it} + \beta_5 permitsblock_{it} + \beta_6 permitsblockgrp_{it} +$$
$$\beta_7 permitstract_{it} + \boxed{\beta_8 (demosblock_{it} xpermitsblock_{it})} +$$
$$\boxed{\beta_9 (demosblockgrp_{it} xpermitsblockgrp_{it})} +$$
$$\boxed{\beta_4 (demostract_{it} xpermitstract_{it})} + \theta_i + \theta_t + u_{it}$$

Event Study

- Cut sample to only blocks with a demolition then run:

$$CrimeIncidents_{it} = \beta_1 + \sum_{j=-2}^{6+} \beta_j demos_{i,t-j} + \theta_i + \theta_t + u_{it}$$

- This allows me to compare the effect of demolitions on crime before and after a demolition occurs

Poisson

$$f(y_i) = \frac{e^{-\lambda_i} \lambda_i^{\,y_i}}{y_i!} \quad \text{for} \quad y_i = 0,1,2\ldots$$

Where $\lambda_i = e^{x_c \beta} = E(y_i | x_i) = Var(y_i | x_i)$ and $x_i \beta$ is specified as in the previous slides

Average Partial Effect

$$A\hat{P}E_{01}(x_0) = N^{-1}T^{-1}\sum_{i=1}^{N}\sum_{t=1}^{T}\frac{Crime_{it}}{\exp(\hat{\beta}_d Demo_{it} + x_{it}\hat{\gamma})}(\exp(x_0\hat{\beta} + \hat{\gamma} j_1) - \exp(x_0\hat{\beta} + \hat{\gamma} j_2))$$

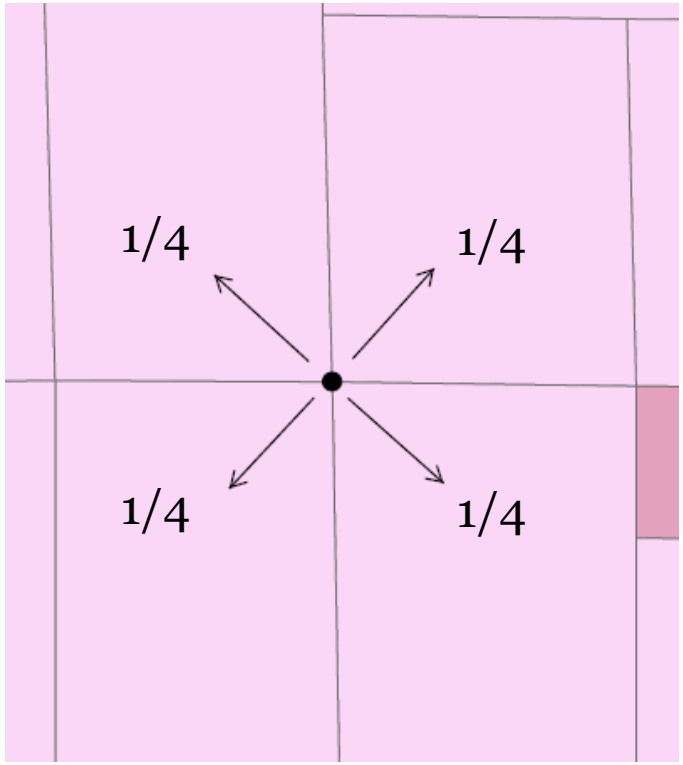
Where j_1 and j_2 are numbers of demolitions – either 0 and 1 or 1 and 2 etc…, depending on which APE I am calculating

Bootstrapped standard errors

Average Partial Effect Detail

Data Manipulations

- Removed non-criminal incidents
- Removed incidents that were follow up reports
- Removed all emergency demolitions and arsons
- Assigned crimes that occurred on streets or at intersections equally to all blocks that they touched:



Poisson Fixed Effects at the Block Level

	(1) All Crime	(2) Violent Crime	(3) Property Crime
Demolitions	-0.047	0.214	-0.412*
	(0.117)	(0.201)	(0.215)
Permits	-0.010	-0.157	0.151
	(0.079)	(0.138)	(0.103)
Demolitions x permits	0.023	-0.088	0.159*
	(0.042)	(0.065)	(0.082)
Observations	28,998	17,730	23,346
Number of objectid	1,611	985	1,297

Robust standard errors in parentheses, clustered at the block level. * significant at 10%; ** significant at 5%; *** significant at 1%. Sample is a panel of all blocks in Saginaw, Mi from January 2008- June 2009. Crime offenses refer to the number of incidents on each block in each month.

Poisson Fixed Effects at the Block Group Level

	(1) All Crime	(2) Violent Crime	(3) Property Crime
Demolitions	0.013	-0.015	0.019
	-0.024	-0.040	-0.030
Permits	0.007	-0.0268**	0.0299**
	-0.007	-0.013	-0.013
Demolitions x permits	0.000	0.002	-0.001
	-0.001	-0.001	-0.001
Observations	1,314	1,296	1,314
Number of objectid	73	72	73

Robust standard errors in parentheses, clustered at the block group level. * significant at 10%; ** significant at 5%; *** significant at 1%. Sample is a panel of all block groups in Saginaw, Mi from January 2008- June 2009. Crime offenses refer to the number of incidents in each block group in each month.

Poisson Fixed Effects at the Census Tract Level

	(1) All Crime	(2) Violent Crime	(3) Property Crime
Demolitions	0.0530**	0.030	0.118***
	(0.025)	(0.056)	(0.043)
Permits	-0.039	-0.105**	-0.008
	(0.024)	(0.041)	(0.014)
Demolitions x permits	-0.001	0.000	-0.00346***
	(0.001)	(0.001)	(0.001)
Observations	270	234	270
Number of tracts	15	13	15

Robust standard errors in parentheses, clustered at the census tract level. * significant at 10%; ** significant at 5%; *** significant at 1%. Sample is a panel of all census tracts in Saginaw, Mi from January 2008- June 2009. Crime offenses refer to the number of incidents in each census tract in each month.

Initial Conclusions and Next Steps

- On average, demolitions cause:
  - a slight increase in property crime at the block level (for a 1% increase in demolitions there is a .159 increase in property crime)
  - no clear effect at the block group level
  - a *very* small decrease in property crime at the census tract level (for a 1% increase in demolitions there is a .00346% decrease in property crimes) but perhaps a larger long term reduction in property crime (after 6 months a 1% increase in demolitions leads to a .530% reduction in property crimes)

Next Steps:

- Directly measure displacement from one vacant building to another using weights matrix of inverse distance to other blocks with a demolition
- Explore in more detail the types of crime that are more likely to be associated with a vacant building

Previous Research

- Vacant property and crime:
  - **Winthrop and Herr**, 2009 ($1,472 of public safety money spent per vacant property)
  - **Immergluck and Smith**, 2005 (A one standard deviation increase in foreclosure rates leads to a 6.7% increase in violent crime but no impact on property crime)
  - **Spelman**, 1993 (Doubling of crime rates on blocks with open abandoned buildings)
  - **Various Policy Papers** (vacant buildings and lots attract trash and debris and are often used as drug dens and are targeted by arsonists -- “magnets for crime.”)

Previous Research, Identification

- **Jacob, 2003 (AER)**
  - Uses public housing demolitions as an exogenous source of variation in housing assistance in Chicago to examine the impact of high-rise public housing on student outcomes
- **Benmelech, Berrebi, and Klor, 2010**
  - Use random demolitions undertaken by the Israeli Defense Forces to analyze their effect as counterterrorism against suicide terrorism
- **Hartley, 2010**
  - Compares public housing buildings that are scheduled for demolition to those that have undergone demolition and finds that public housing demolitions are associated with a 10 percent to 20 percent reduction in murder, assault, and robbery in neighborhoods where the demolitions occurred

Mechanisms through which demolitions may impact criminal behavior:

- Rational choice theory of crime: criminals maximize their economic well-being by comparing the benefits and costs of crime
  - Vacant buildings provide a shelter that reduces the chance of being seen committing the crime, thus reducing the perceived costs
  - If a demolition occurs to a house that has someone living in it, the likelihood of a crime being reported decreases because the number of "eyes" on the street is reduced

Mechanisms cont.

- Social Disorganization Theory
  - Social capital and cohesion are disrupted when a neighborhood loses population and the social controls that put limits on criminal activity deteriorate
    - Demolishing a house will not counteract this effect if it was vacant to begin with
- Broken Windows Theorem
  - One vacant building or lot lying decrepit leads to further crime solely based on the signal that that there is little/no cost to further destruction
    - Vacant buildings signal to potential criminals that the risk of being punished is low – decreases perceived costs

Poisson Event Study Block Level

	(1)	(2)	(3)
	All Crime	Violent Crime	Property Crime
Second lead of demolitions	0.189	0.678**	0.165
	-0.167	-0.274	-0.259
First lead of demolitions	0.055	0.990***	-0.957**
	-0.197	-0.286	-0.455
Demolitions	0.081	1.076**	-0.197
	-0.188	-0.439	-0.335
First lag of demolitions	0.078	0.508	-0.649
	-0.318	-0.459	-0.560
Second lag of demolitions	0.439	0.528	0.602
	-0.273	-0.443	-0.433
Third lag of demolitions	0.454***	0.834*	0.481
	-0.165	-0.449	-0.311
Fourth lag of demolitions	0.054	0.623	-0.370
	-0.207	-0.461	-0.502
Fifth lag of demolitions	0.113	1.329**	-0.843
	-0.366	-0.593	-1.019
Six plus lags of demolitions	0.117	1.185	-0.649
	-0.552	-0.866	-0.795
Observations	1,122	682	770
Number of objectid	102	62	70

Poisson Event Study Block Group Level

	(1)	(2)	(3)
	All Crime	Violent Crime	Property Crime
Second lead of demolitions	0.003	0.027	-0.018
	(0.031)	(0.068)	(0.042)
First lead of demolitions	-0.043	0.041	-0.125**
	(0.037)	(0.073)	(0.056)
Demolitions	0.022	0.065	0.066
	(0.031)	(0.071)	(0.041)
First lag of demolitions	-0.011	-0.126**	0.012
	(0.036)	(0.056)	(0.048)
Second lag of demolitions	0.051	0.126*	-0.037
	(0.047)	(0.070)	(0.060)
Third lag of demolitions	-0.006	0.0963*	0.012
	(0.039)	(0.056)	(0.051)
Fourth lag of demolitions	-0.011	-0.007	-0.013
	(0.036)	(0.072)	(0.050)
Fifth lag of demolitions	0.017	0.019	-0.035
	(0.046)	(0.053)	(0.132)
Six plus lags of demolitions	0.035	-0.122	0.116
	(0.064)	(0.133)	(0.135)
Observations	550	550	550
Number of objectid	50	50	50

Poisson Event Study Census Tract Level

	(1) All Crime	(2) Violent Crime	(3) Property Crime
Second lead of demolitions	-0.033	-0.245***	0.085
	(0.035)	(0.072)	(0.058)
First lead of demolitions	0.034	0.257**	-0.028
	(0.039)	(0.109)	(0.043)
Demolitions	-0.007	-0.188*	0.032
	(0.035)	(0.109)	(0.035)
First lag of demolitions	-0.059	0.045	-0.069
	(0.049)	(0.154)	(0.095)
Second lag of demolitions	0.0997**	0.101	0.075
	(0.046)	(0.159)	(0.065)
Third lag of demolitions	-0.006	0.078	0.177*
	(0.057)	(0.161)	(0.101)
Fourth lag of demolitions	-0.030	-0.208*	-0.237***
	(0.063)	(0.123)	(0.091)
Fifth lag of demolitions	0.102***	0.297**	0.231*
	(0.038)	(0.134)	(0.121)
Six plus lags of demolitions	-0.233***	-0.041	-0.530***
	(0.082)	(0.191)	(0.165)
Observations	165	143	154
Number of objectid	15	13	14

Average Partial Effect Detail

$$APE_{01}(x_0) = \int (\exp(c + \beta_d + x_0\gamma) - \exp(c + x_0\gamma))dF_{c_i}(c)$$

$$= (\exp(\beta_d + x_0\gamma) - \exp(x_0\gamma)) \int \exp(c)dF_{c_i}$$

$$= (\exp(\beta_d + x_0\gamma) - \exp(x_0\gamma))E(\exp(c_i))$$

A consistent estimator for $E(\exp(c_i))$ is found as follows:

$$D \equiv \frac{1}{N}\frac{1}{T}\sum_{i=1}^{N}\sum_{t=1}^{T}\frac{Crime_{it}}{\exp(\beta_d Demos_{it} + x_{it}\gamma)}$$

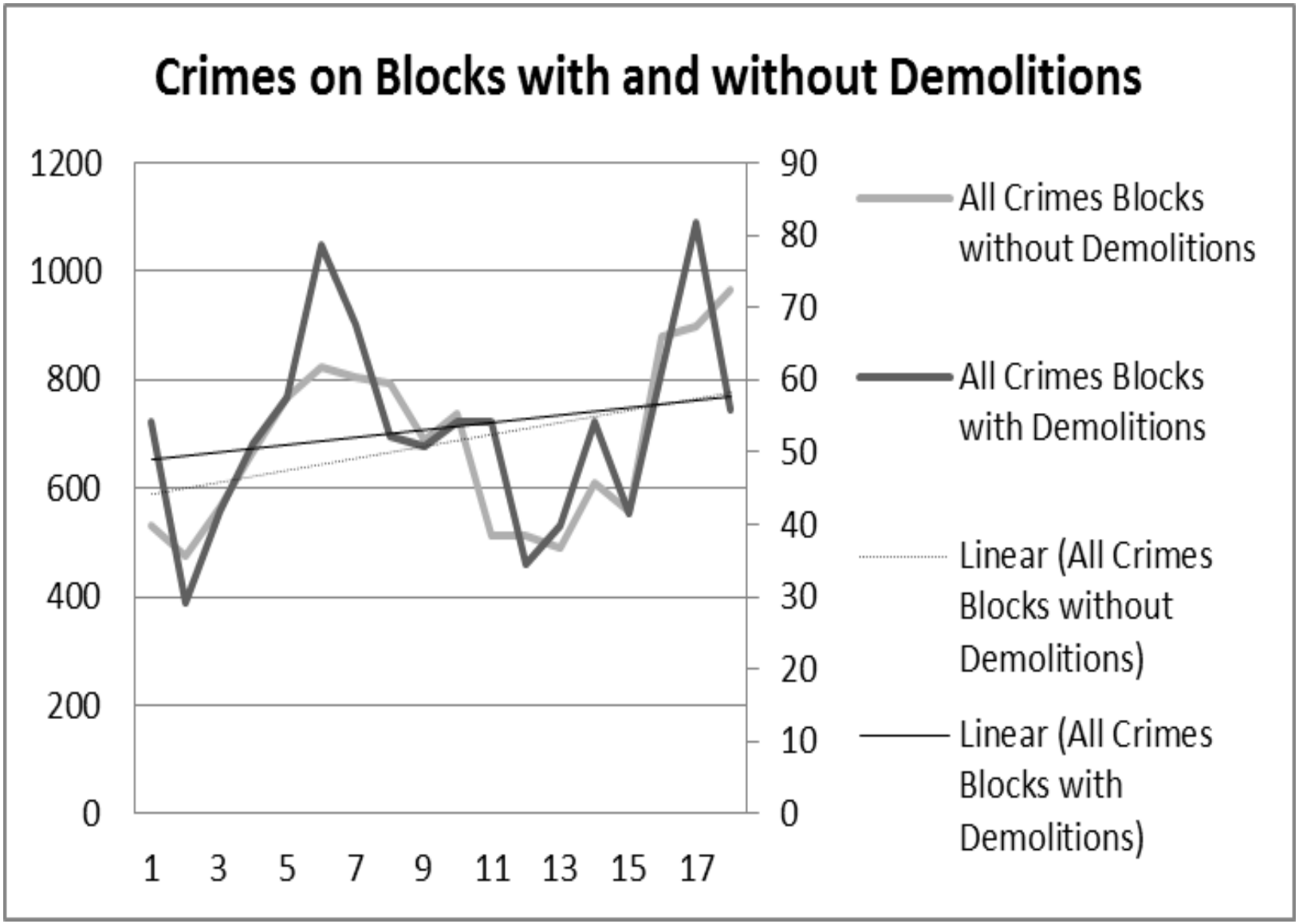
$$= \frac{1}{N}\frac{1}{T}\sum_{i=1}^{N}\sum_{t=1}^{T}\exp(c_i) + \frac{\varepsilon_{it}}{\exp(\beta_d Demos_{it} + x_{it}\gamma)}$$

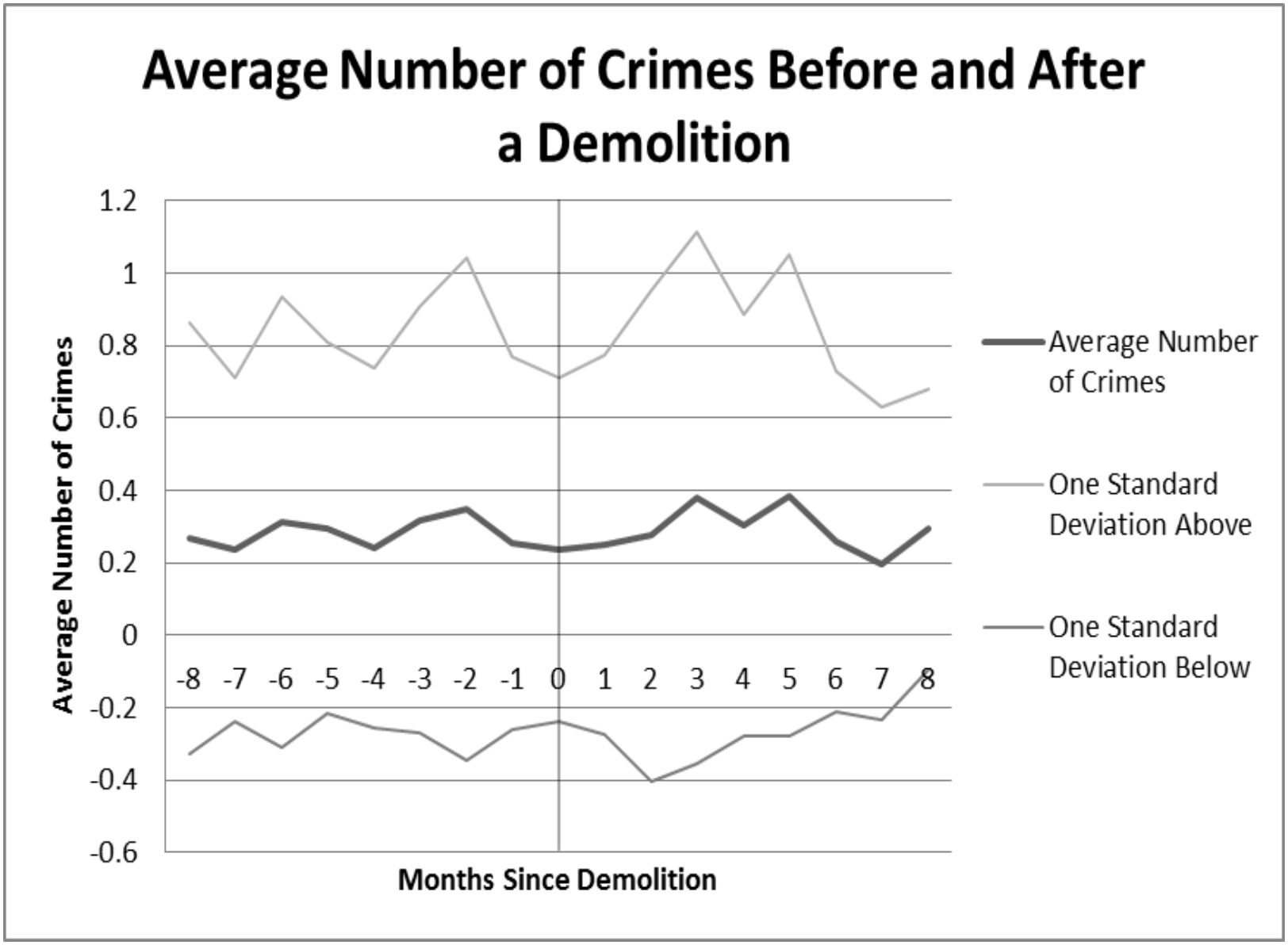
$$\xrightarrow{p} E(\exp(c_i))$$

Demographics of Blocks with Demos vs. without

	Blocks with no Demolitions	Blocks with >0 Demolitions	P-Value
Population	32.542	39.679	0.044
	(0.876)	(2.679)	
White	16.023	8.036	0.001
	(0.581)	(0.892)	
Black	13.369	27.500	0.000
	(0.614)	(2.414)	
Median Age	25.767	27.140	0.388
	(0.397)	(0.932)	
Average Family Size	2.481	3.311	0.000
	(0.036)	(0.097)	
Household Units	13.540	15.911	0.111
	(0.369)	(1.057)	
Owner Occupied Housing	7.891	7.473	0.658
	(0.237)	(0.454)	
Renter Occupied Housing	4.395	6.232	0.038
	(0.217)	(0.787)	
Vacant	1.253	2.205	0.000
	(0.051)	(0.198)	

Standard errors are listed in parentheses below the means


Crimes on Blocks with and without Demolitions
1200
1000
800
600
400
200
0
90
80
70
60
50
40
30
20
10
0
1
3
5
7
9
11
13
15
17
All Crimes Blocks without Demolitions
All Crimes Blocks with Demolitions
Linear (All Crimes Blocks without Demolitions)
Linear (All Crimes Blocks with Demolitions)


Average Number of Crimes Before and After a Demolition
1.2
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
Average Number of Crimes
-8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8
Months Since Demolition
Average Number of Crimes
One Standard Deviation Above
One Standard Deviation Below

Poisson Fixed Effects at the Block Level, with and without arson included

	(1) All Crime	(2) All Crime Sans Arson	(3) Violent Crime	(4) Property Crime	(5) Property Crime Sans Arson
Demolitions	-0.039	-0.047	0.214	-0.330	-0.412*
	(0.115)	(0.117)	(0.201)	(0.205)	(0.215)
Permits	0.012	-0.010	-0.157	0.169*	0.151
	(0.073)	(0.079)	(0.138)	(0.096)	(0.103)
Demolitions x permits	0.025	0.023	-0.088	0.144*	0.159*
	(0.041)	(0.042)	(0.065)	(0.077)	(0.082)
Observations	29,106	28,998	17,730	23,994	23,346
Number of blocks	1,617	1,611	985	1,333	1,297

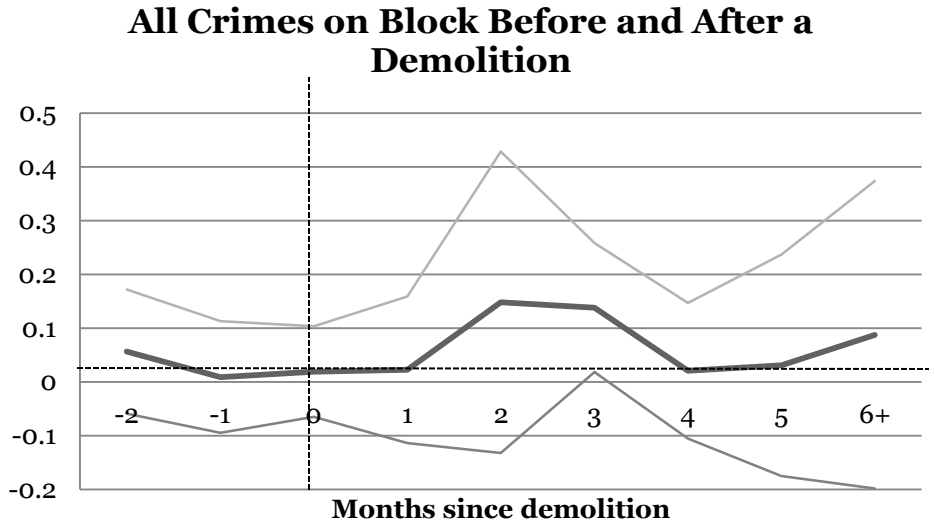
Robust standard errors in parentheses, clustered at the block level. * significant at 10%; ** significant at 5%; *** significant at 1%. Sample is a panel of all blocks in Saginaw, Mi from January 2008- June 2009. Crime offenses refer to the number of incidents on each block in each month.

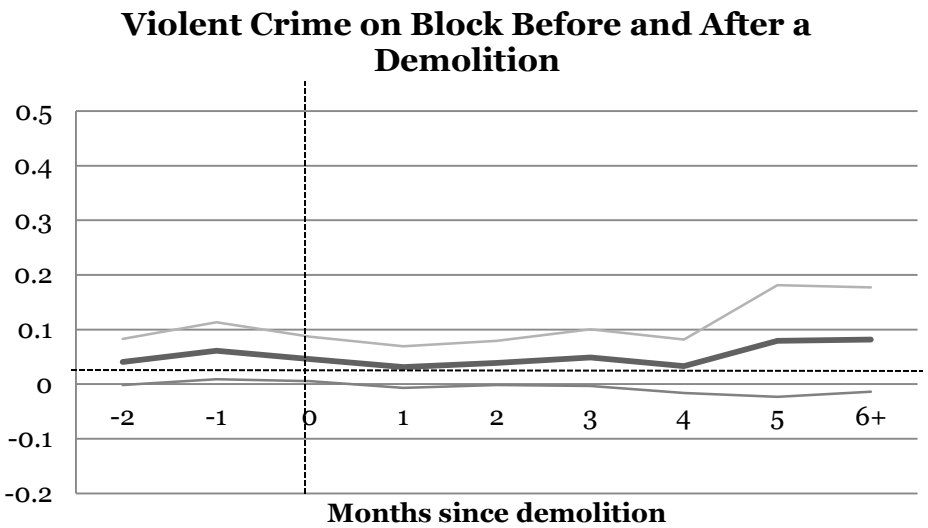
Once on list, timing of demolitions not dependent on most Crime:

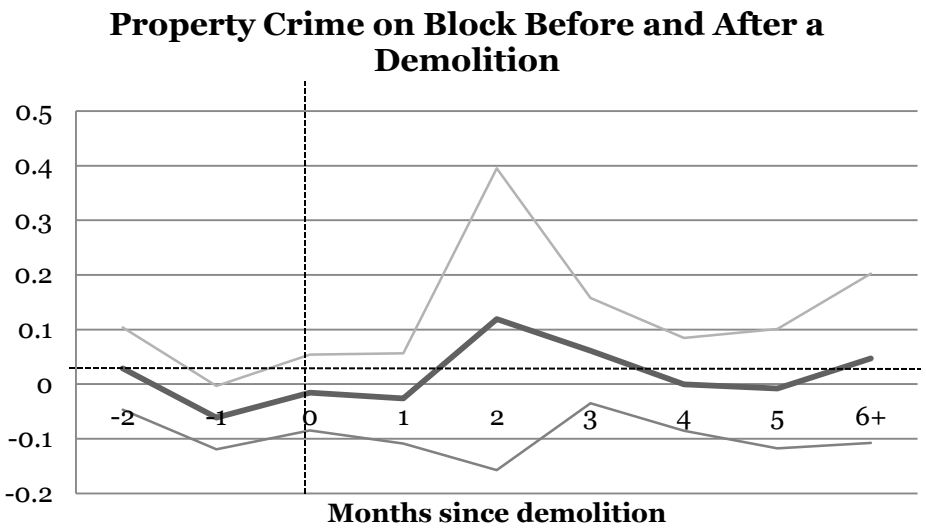
	Fast Demos (177 obs.)	Slow Demos (359 obs.)	Difference	P-Value
All Crimes	0.341	0.263	0.078	0.135
	(0.690)	(0.494)		
All Crimes Sans Arson	0.336	0.242	0.093	0.070
	(0.689)	(0.483)		
Violent Crimes	0.077	0.062	0.015	0.510
	(0.261)	(0.229)		
Property Crimes	0.154	0.145	0.009	0.811
	(0.432)	(0.372)		
Property Crimes Sans Arson	0.154	0.145	0.009	0.811
	(0.432)	(0.372)		

Standard errors are listed in parentheses below the means

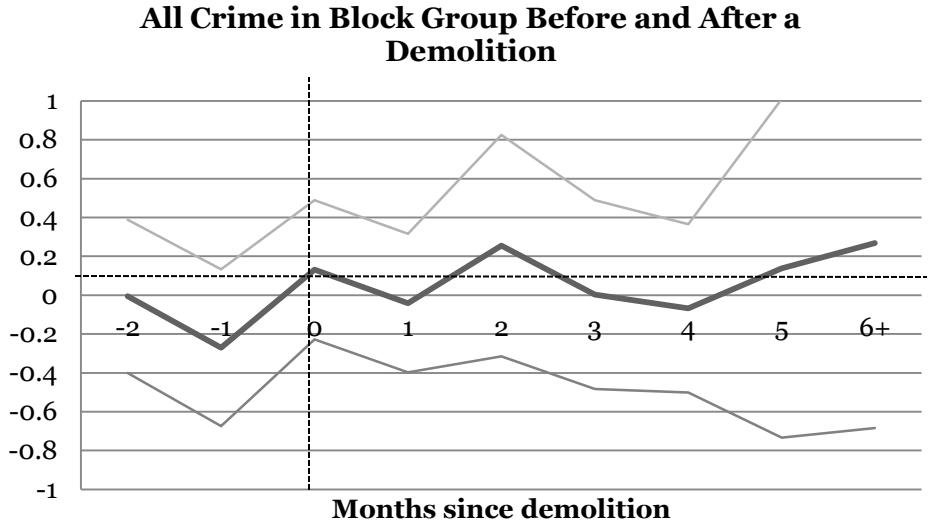
OLS Block Level Event Study

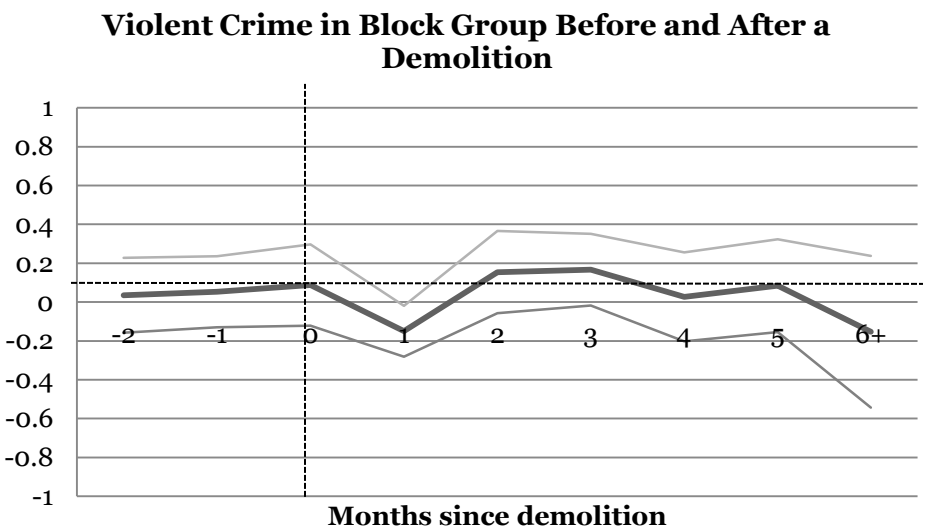


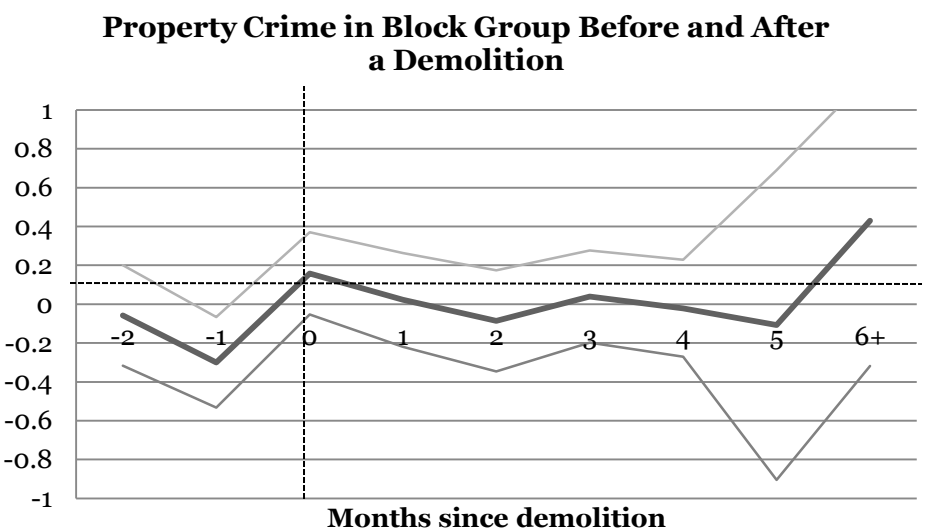




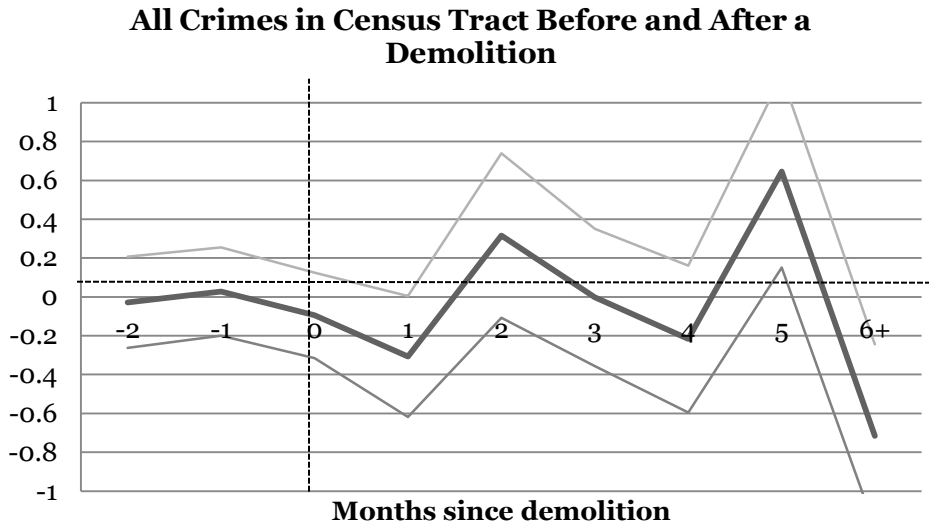
OLS Block Group Level Event Study

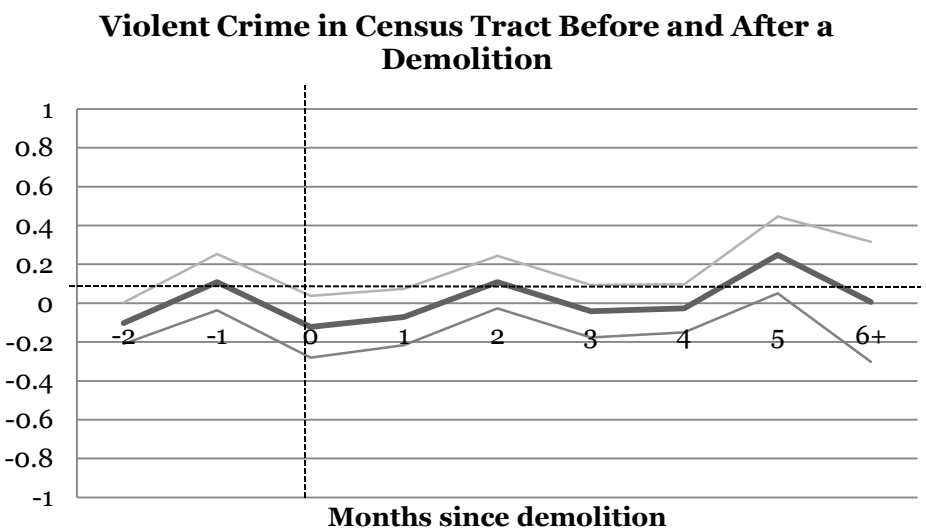


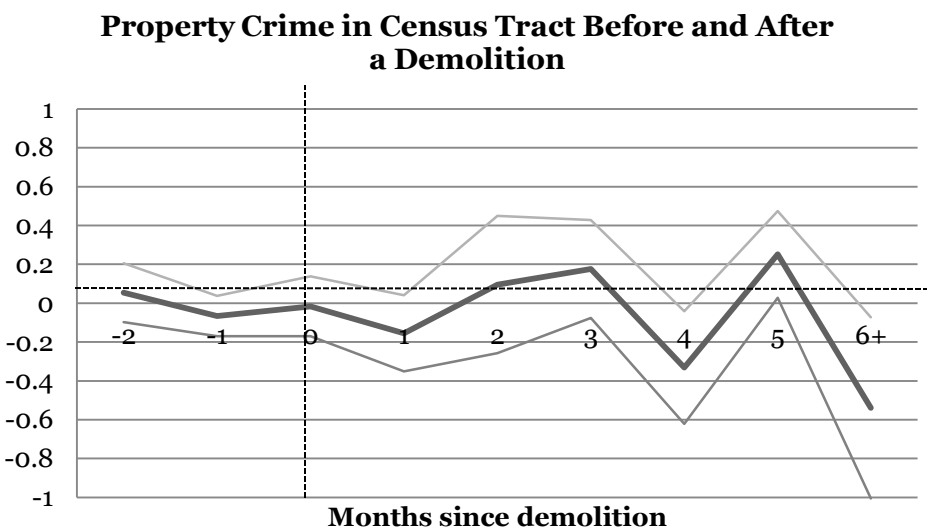




OLS Census Tract Level Event Study







Cross Section OLS Results

	(1) All Crime	(2) Violent Crime	(3) Property Crime
Demolitions	0.508**	0.192*	0.151
	(0.240)	(0.102)	(0.136)
Observations	1,869	1,869	1,869
R-squared	0.001	0.001	0

Robust standard errors are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. Sample is a cross section of all blocks in Saginaw, Mi from January 2008- June 2009. Crime offenses refer to the number of incidents on each block in each month.