

Appendices

A Additional Figures and Tables

- Figure A1 shows the Census of Government survey forms on revenue.
- Figure A2 shows the American Community Survey (ACS)'s questionnaire on commuting time to work.
- Figure A3 presents the distribution of commuting time in cities in our sample for year 2012.
- Figure A4 shows the average commute to work (minutes) at the county level in 2012.
- Figure A5 presents a simple bivariate relationship between commuting time and revenues from fines/fees in 2012.
- Figure A6 presents a simple bivariate relationship between revenues from fines/fees and crime clearance rates.
- Table A1 presents the summary statistics of the variables in the regression analyses.
- Table A2 presents the relationship between lagged crime-related variables and time to commute.
- Table A3 presents the result with a county fixed effect when we exclude cities with a prevalence of gang activity.
- Table A4 presents the first-stage results from the instrumental variable analysis.

A.1 Census of Government Survey Forms on Revenue

Code: U30 ITEM: Fines and Forfeits

Includes: Receipts from penalties imposed for violations of law; civil penalties (e.g., for violating court orders); court fees if levied upon conviction of a crime or violation; court-ordered restitutions to crime victims where the government actually collects the monies; and forfeits of deposits held for performance guarantees or against loss or damage (such as forfeited bail and collateral).

Excludes: Penalties relating to tax delinquency (report at appropriate Tax code); library fines (report at Other Charges, code A89); and sale of confiscated property (use code U99).

Following is a picture of the form that governments filled out (in 2012):

Figure A1: Census of Government Survey Form

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PART 2 - REVENUES - Continued		Other Revenues								
		\$Mil.			Thou.			Dol.		
E. Interest earnings - Interest received on all deposits and investment holdings of your government and its agencies.										
Include										
• Interest on construction funds										
Exclude										
• Interest earnings of any employee pension funds	U20									
F. Fines and forfeits - Receipts from penalties imposed for violations of law and civil penalties	U30									
G. Rents - Revenues from temporary possession or use of government-owned buildings, land, and other properties	U40									
H. Royalties - Compensation or portion of proceeds from extraction of natural resources (e.g., oil, gas, and mineral rights)	U41									
I. Private donations - Gifts of cash or securities from private individuals or corporations	U50									

A.2 American Community Survey Forms on Commuting Time

Figure A2: American Community Survey Forms on Commuting Time

American Community Survey (ACS) Why We Ask: Commuting/ Journey to Work

We ask questions about where people work, how they get there, when they leave, and how long it takes, to create statistics about commuting, or a person's *journey to work*. This information is for planning improvements to roads and highways and planning emergency response routes.

The 1960 Census was the first to ask about how people get to work. In 1970, the Census added a question about where a person worked, and in 1980, the Census added a question about how long it took to get there. In order to calculate peak travel times, a time of departure question (What time did this person usually leave home to go to work last week?) was introduced to the 1990 Census, and retained for Census 2000.

The figure displays three panels of survey questions from the American Community Survey (ACS) regarding commuting. Panel 30 asks for the work location, including address, city, county, and ZIP code. Panel 31 asks for the mode of transportation used to get to work. Panel 32 asks for the number of people who rode to work in a car, truck, or van. Panel 33 asks for the time of departure from home to work. Panel 34 asks for the time taken to get from home to work.

30 At what location did this person work LAST WEEK? If this person worked at more than one location, print where he or she worked most last week.

a. Address (Number and street name)

If the exact address is not known, give a description of the location such as the building name or the nearest street or intersection.

b. Name of city, town, or post office

c. Is the work location inside the limits of that city or town?

☐ Yes

☐ No, outside the city/town limits

d. Name of county

e. Name of U.S. state or foreign country

f. ZIP Code

31 How did this person usually get to work LAST WEEK? If this person usually used more than one method of transportation during the trip, mark (X) the box of the one used for most of the distance.

☐ Car, truck, or van

☐ Motorcycle

☐ Bus or trolley bus

☐ Bicycle

☐ Streetcar or trolley car

☐ Walked

☐ Subway or elevated

☐ Worked at home → SKIP to question 39a

☐ Railroad

☐ Other method

☐ Ferryboat

☐ Taxicab

32 How many people, including this person, usually rode to work in the car, truck, or van LAST WEEK?

Person(s)

33 What time did this person usually leave home to go to work LAST WEEK?

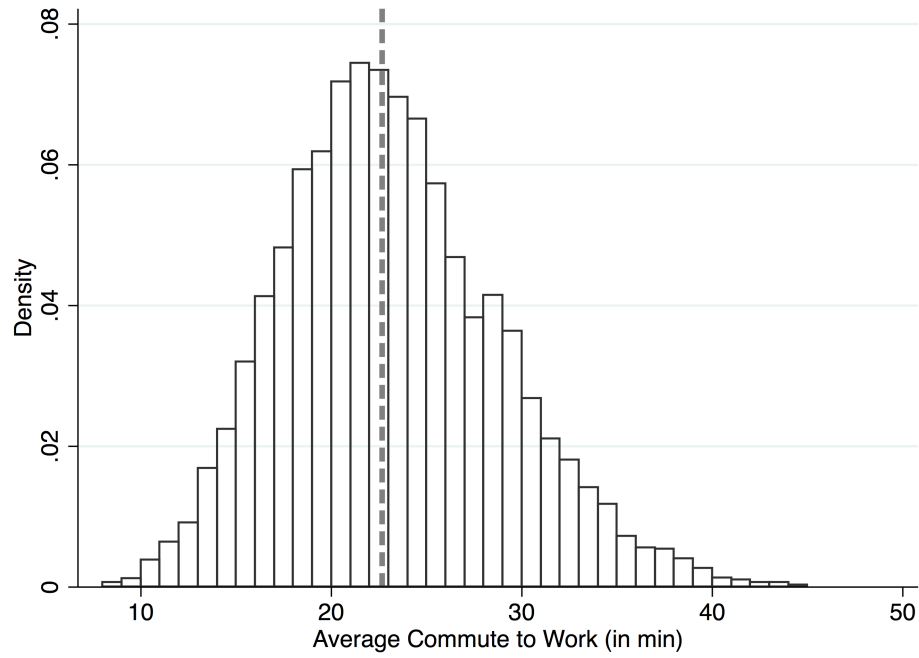
Hour Minute ☐ a.m. ☐ p.m.

34 How many minutes did it usually take this person to get from home to work LAST WEEK?

Minutes

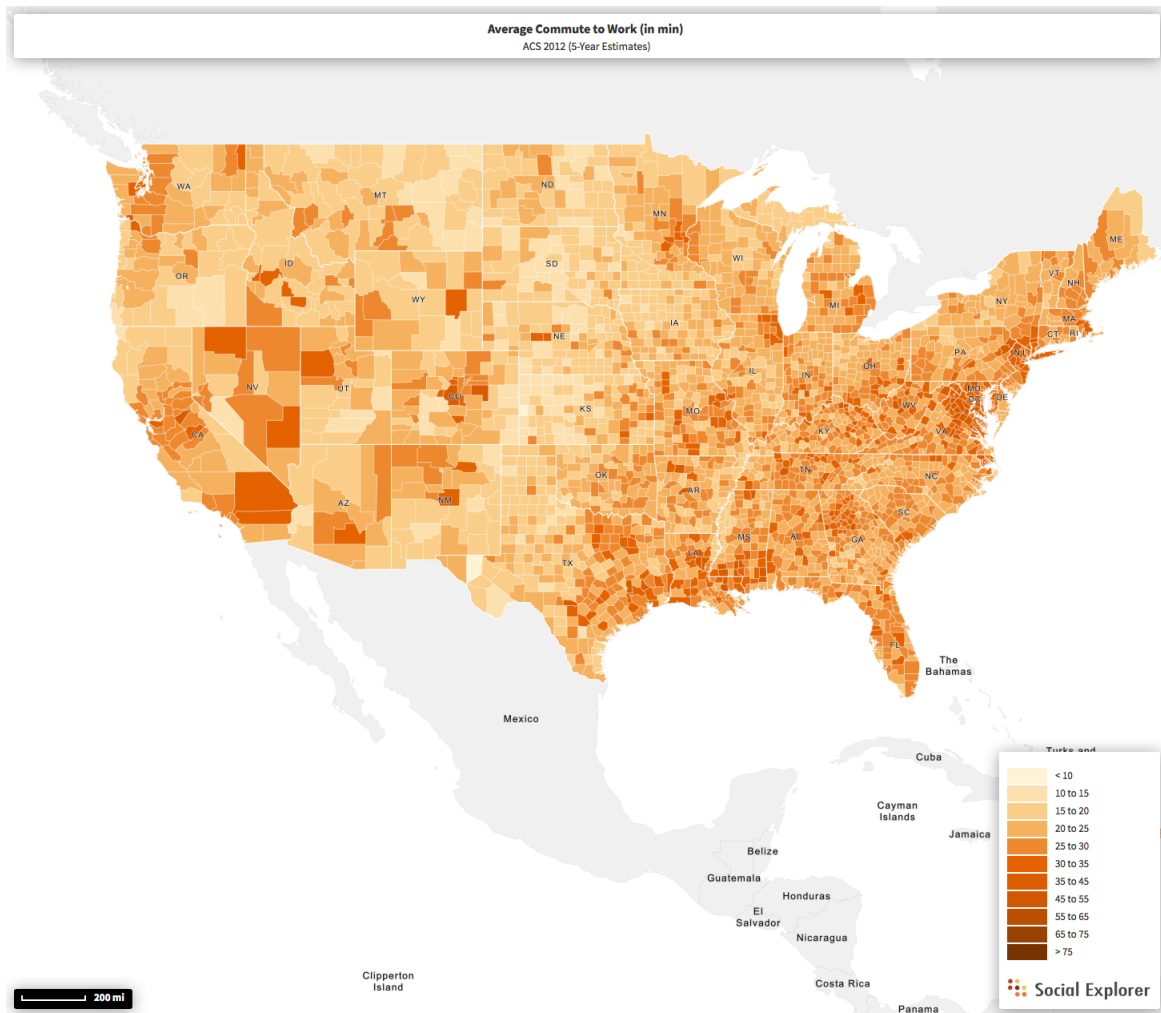
A.3 Average Commuting Time to Work (minutes) at Municipality, 2012

Figure A3: Average Commuting Time to Work, 2012



A.4 Average Commuting Time to Work (minutes) at County Level, 2012

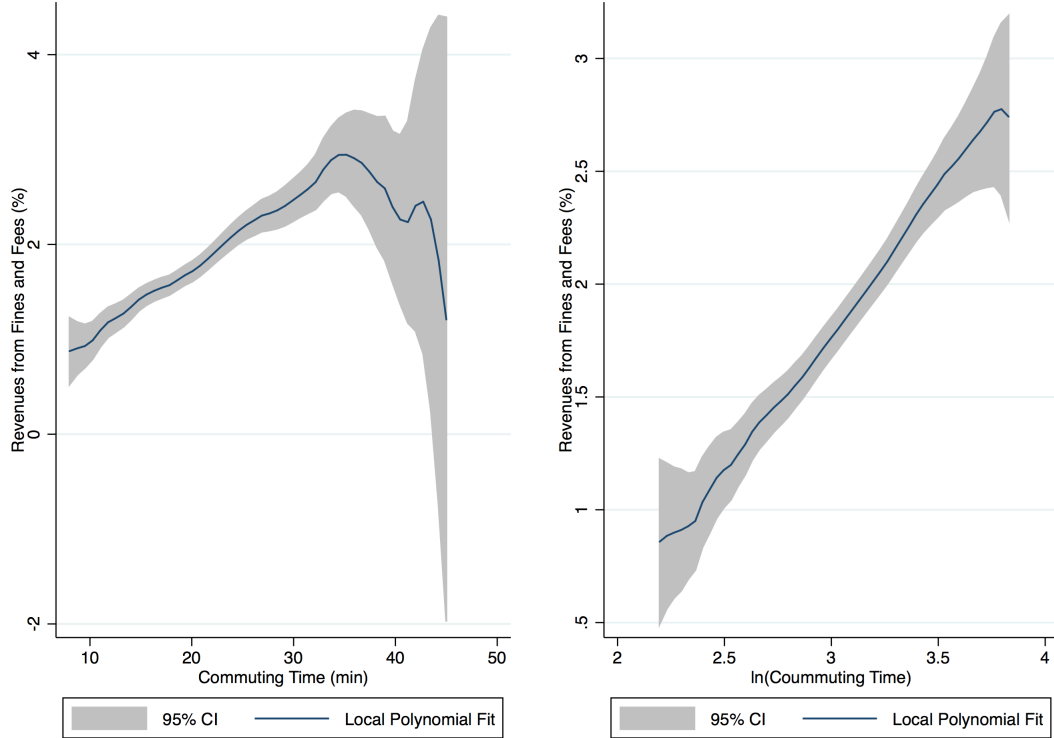
Figure A4: Average Commute to Work at County Level (2012)



Note: This map is produced by a tool available in www.socialexplorer.com using the American Community Survey 2012 (5-Year Estimates) data at the county level.

A.5 Bivariate Relationship between Commuting Time and Revenues from Fines and Fees (2012)

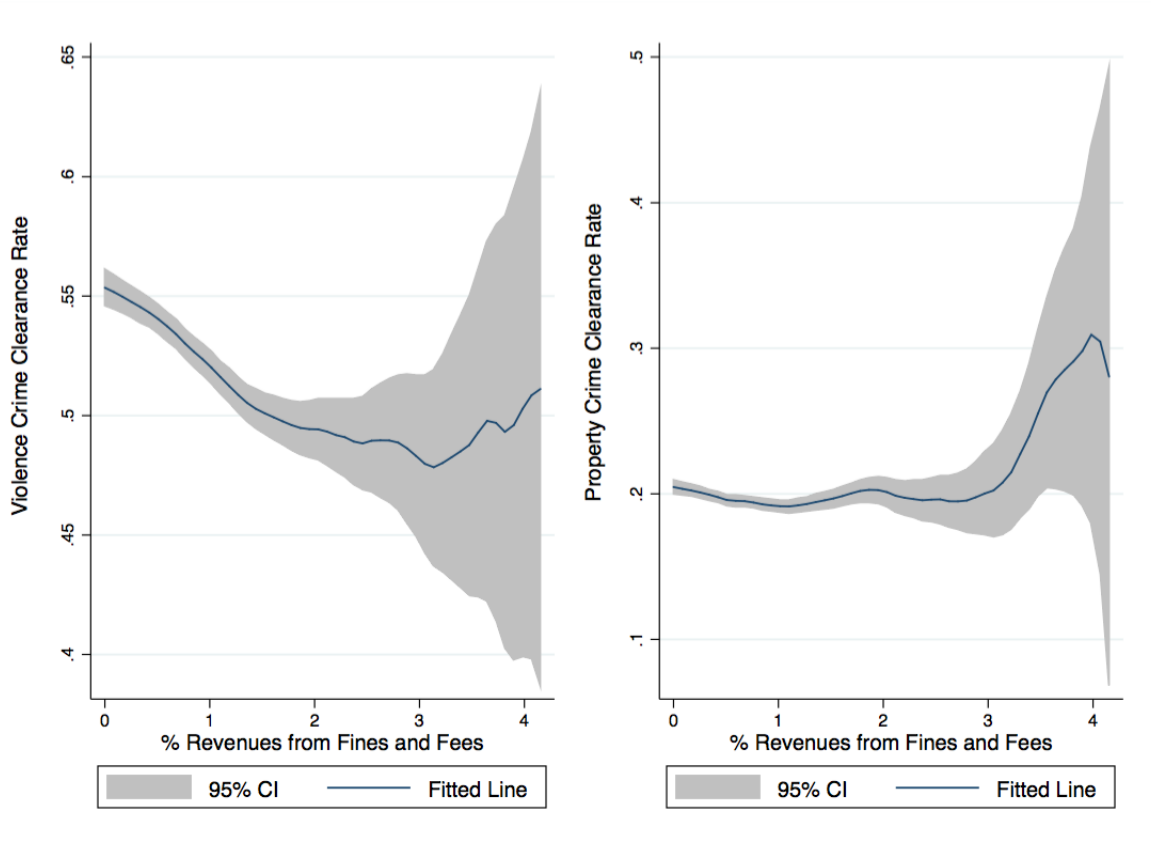
Figure A5: Bivariate Relationship between Commuting Time and Revenues from Fines/Fees



Note: The figure presents the bivariate relationships between commuting time and the % revenues from fines and fees. The graph in the left shows the relationship when we use a raw number (in minutes) regarding the commuting time and the graph in the right shows the relationship when we use a log-transformed commuting time in minutes. Fitted lines come from a kernel-weighted local polynomial regression.

A.6 Bivariate Relationship between Revenues from Fines/Fees and Crime Clearance Rates

Figure A6: Bivariate Relationship between Revenues from Fines/Fees and Crime Clearance Rates



Note: The figure presents the bivariate relationships between the % revenues from fines and fees and violent (left) and property (right) crime clearance rates. Fitted lines come from a kernel-weighted local polynomial regression. For this figure, we log the % revenue from fines and fees for presentational purposes.

A.7 Summary Statistics of the Variables in the Regression

Table A1: Summary Statistics

Variable	N	Mean	SD	Min.	Max.
<i>Panel A. Crime</i>					
# Violent Crime	11870	150.8	1076.2	0	51831
Violent Crime Cleared (%) ^a	10361	52.7	27.1	0	100
Murders	11870	1.8	15.0	0	500
Aggravated Assault	11870	90.2	593.1	0	31211
Forced Rape	11870	7.9	31.4	0	953
Robbery	11870	50.7	460.7	0	21787
# Property Crime	11870	1071.0	4679.3	0	149488
Property Crime Cleared (%) ^b	10650	19.7	14.8	0	100
Burglary	11870	237.4	1023.0	0	29112
Larceny Theft	11870	723.1	3074.0	0	115935
Motor Vehicle Theft	11870	110.5	722.5	0	29231
<i>Panel B. Public Finance</i>					
% Intergovernmental Transfer Revenue	11870	16.3	13.1	0	97.2
% Tax Revenue	11870	47.31	21.0	0	100
% Fines and Fees Revenue	11870	1.9	3.1	0	62.6
Fines per capita (\$)	11870	21.5	32.1	0	677.6
<i>Panel C. Police</i>					
Police Budget as City's Expenditure (%)	11870	19.38	8.93	0	82
Fulltime Sworn Officer	10,584	45.2	132.8	0	3388
<i>Panel D. Demographics</i>					
(ln) Population	11870	9.31	1.12	6.85	15.93
Population 15~34 (%)	11870	27.15	6.97	0	81.87
Black (%)	11870	10.75	17.08	0	99.37
Less than High School (%)	11870	15.30	9.67	0	78.80
Unemployment (%)	11870	4.06	1.95	0	50.19
Gini	11870	42.56	5.49	0	70.2
(ln) Median Income	11870	10.78	0.41	0	12.48

Note: Unit of observation is municipality ($N = 5,935$) \times year (2007 and 2012). a.b. some areas with zero crime have no clearance rate data.

A.8 Lagged Crime-related Variables and Commuting Time to Work

Table A2: Lagged Crimes and Commuting Time to Work

	(1) All Cities	(2) Smaller Cities ^a	(3) Larger Cities
Lagged Violent Crime	0.00790 (0.98)	0.00570 (0.55)	0.0142 (0.66)
Lagged Property Crime	-0.00812 (-1.60)	-0.00798 (-1.39)	-0.0131 (-0.69)
Lagged Violent Crime Cleared	0.00435 (0.60)	0.00539 (0.56)	-0.0158 (-0.86)
Lagged Property Crime Cleared	-0.00562 (-1.13)	-0.00518 (-0.92)	0.0161 (1.03)
Police Budget ^b	0.00209*** (4.68)	0.00234*** (4.56)	0.000616 (0.57)
Full-time Sworn Officer ^c	-0.637 (-1.03)	-0.689 (-0.71)	9.002** (2.46)
(ln) Population	-0.0115 (-1.95)	-0.0273*** (-3.12)	0.0143 (0.96)
Population aged 15-34	-0.00256*** (-4.10)	-0.00258*** (-3.25)	-0.000976 (-0.54)
Black (%)	0.00159*** (5.26)	0.00172*** (5.15)	0.00141 (1.84)
Lower Education (%) ^d	0.00277*** (3.93)	0.00235*** (2.68)	0.00263 (1.88)
Unemployment	0.00894*** (6.71)	0.00915*** (6.22)	0.0101** (2.51)
Gini	-0.00788*** (-9.05)	-0.00762*** (-7.72)	-0.0109*** (-6.15)
(ln) Income	0.233*** (8.33)	0.229*** (7.66)	0.246*** (3.48)
Constant	0.978*** (3.06)	1.142*** (3.30)	0.668 (0.83)
County FE	Y	Y	Y
<i>N</i>	5307	4342	965
adj. <i>R</i> ²	0.575	0.536	0.790

Note: *t* statistics in parentheses. ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the county level. **a:** Smaller cities are defined as having populations equal to or less than 28,010, which constitutes the bottom 80% of the sample. Larger cities, in contrast, are defined as having populations greater than 28,010. **b:** % of municipal government's budget spent on the local police department. **c:** Number of fulltime sworn personnel with full arrest powers per capita. **d:** % of population over 25 whose education attainment is less than high school.

A.9 Fines and Fees Revenue and Crime Clearance Rates, Excluding Cities with Prevalence of Gangs: County Fixed Effects

Table A3: Revenue from Fines and Fees (%) and Crime Clearance Rates: County Fixed Effects

	Violent Crime Clearance			Property Crime Clearance	
	All Cities	Smaller Cities ^a	Larger Cities	All Cities ^b	
	(1)	(2)	(3)	(4)	(5)
Fines and Fees as City's Own Source Revenue (%)	-0.505*** (-5.11)	-0.233** (-2.12)	-0.149 (-0.43)	0.0496 (0.78)	-0.00973 (-0.13)
(ln) Total Violent Crime		0.527 (0.73)	-0.897 (-0.76)		-0.00701 (-0.02)
(ln) Total Property Crime		-3.674*** (-4.11)	-3.842** (-2.06)		-0.216 (-0.41)
Police Budget ^c		0.141*** (2.82)	-0.0709 (-0.79)		0.0503** (1.97)
Full-time Sworn Officer per capita ^d		186.2 (0.66)	-1357.6 (-0.92)		244.1 (1.23)
(ln) Population		2.093 (1.82)	2.600 (1.22)		0.752 (1.30)
Population aged 15-34 (%)		0.0496 (0.63)	-0.291 (-1.93)		0.0664 (1.92)
Black (%)		-0.0960** (-2.52)	-0.170** (-2.49)		-0.0452 (-1.94)
Lower Education (%) ^e		-0.0754 (-1.17)	-0.650*** (-5.66)		-0.0502 (-1.63)
Unemployment (%)		-0.161 (-0.60)	0.382 (0.83)		-0.203 (-1.55)
Gini		-0.0787 (-0.86)	-0.308 (-1.71)		-0.0472 (-1.12)
(ln) Median Income		2.405 (1.22)	-7.426 (-1.50)		-0.626 (-0.63)
Year FE	✓	✓	✓	✓	✓
County FE		✓	✓		✓
<i>N</i>	10331	7613	1825	10620	9695
adj. <i>R</i> ²	0.004	0.330	0.575	0.008	0.350

Note: t statistics in parentheses. ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the municipality level. **a:** Smaller cities are defined as having populations equal to or less than 28,010, which constitutes the bottom 80% of the sample. Larger cities have populations greater than 28,010. **b:** For property crime, there is no statistically significant relationship between fee and fine revenue and clearance rates in large or small cities so we do not present the separate results for them. **c:** % of municipal government's budget spent on the local police department. The police budget could be endogenous to a municipality's fines and fees revenue, so we also use police budget data from 2002 (the latest year that Census of Government data is available prior to the sample period) and there is no significant difference in the results. **d:** Number of full-time sworn personnel with full arrest powers per capita. **e:** % of population over 25 whose education attainment is less than high school.

A.10 Instrumental Variable Analysis: First-Stage Results

Table A4: Instrument Variable Analysis - First Stage Result

	Crime Clearance		
	All Cities	Smaller Cities ^a	Larger Cities
	(1)	(2)	(3)
(ln) Commuting Time	0.307*** (4.50)	0.306*** (3.99)	0.287** (2.52)
(ln) Total Violent Crime	0.0557 (1.30)	0.0546 (1.12)	-0.0227 (-0.32)
(ln) Total Property Crime	-0.0603 (-1.81)	-0.0524 (-1.39)	-0.0293 (-0.57)
Police Budget ^b	0.0921*** (9.37)	0.0941*** (8.70)	0.0623*** (7.22)
Full-time Sworn Officer pc ^c	62.06*** (3.35)	63.13*** (3.27)	32.96 (1.25)
(ln) Population	-0.119** (-2.35)	-0.177** (-2.24)	-0.0528 (-0.74)
Population aged 15-34 (%)	0.0370*** (6.16)	0.0370*** (5.21)	0.0322*** (3.41)
Black (%)	0.00521 (0.98)	0.00508 (0.82)	0.00512 (1.20)
Lower Education (%) ^d	0.00665 (1.06)	0.00220 (0.31)	0.0201** (2.28)
Unemployment (%)	0.0128 (0.97)	0.0180 (1.23)	-0.0189 (-1.28)
Gini	-0.0262*** (-3.29)	-0.0306*** (-3.41)	0.00130 (0.10)
(ln) Median Income	0.541*** (3.26)	0.540*** (2.95)	0.680** (2.24)
<i>F</i> -statistics	26.1	20.6	5.66
Year FE	Y	Y	Y
State FE	Y	Y	Y
<i>N</i>	10613	8668	1945
adj. <i>R</i> ²	0.232	0.232	0.295

Note: *t* statistics in parentheses. ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the state level. **a:** Smaller cities are defined as having populations equal to or less than 28,010, which constitutes the bottom 80% of the sample. Larger cities, in contrast, are defined as having populations greater than 28,010. **b:** % of municipal government's budget spent on the local police department. **c:** Number of fulltime sworn personnel with full arrest powers per capita. **d:** % of population over 25 whose education attainment is less than high school.