Distributive Politics and Crime

Online Appendix*

Masataka Harada†

Daniel M. Smith‡

August 3, 2021

Abstract

We examine whether and how intergovernmental fiscal transfers reduce crime, an important but understudied aspect of distributive politics. Estimating the causal effect of redistribution on crime is complicated by the problem of simultaneity: transfers may be targeted precisely where crime is a problem. Our research design takes advantage of municipality-level panel data from Japan spanning a major electoral system reform that reduced the level of malapportionment across districts. This provides an opportunity to use the change in malapportionment as an instrumental variable, as malapportionment affects redistribution outcomes, but the change caused by the reform is orthogonal to local crime rates. Naïve OLS estimates show negligible (near zero) effects of transfers on crime, whereas the IV results reveal larger negative effects. This finding supports the argument that redistribution can reduce crime, and introduces a new perspective on the relationship between Japan's well-known pattern of distributive politics and its comparatively low crime rates.

Keywords: distributive politics, crime, malapportionment, instrumental variable, Japan

*This online appendix contains supplementary information and analyses referenced in the main text of the article appearing in the *Journal of Political Institutions and Political Economy*.

†Department of Economics, Fukuoka University. 8-19-1 Nanakuma, Jonan-ku, Fukuoka 814-0180, Japan. Email: masatakaharada@gmail.com. Corresponding author.

‡Department of Political Science and School of International and Public Affairs, Columbia University. 420 W. 118th Street, 915 International Affairs Building, New York, NY 10027, United States. Email: dms2323@columbia.edu.

A Supplementary Tables and Figures

Table A.1: Total reported penal code offenses in Japan, 1993-1999

	1993	1994	1995	1996	1997	1998	1999
Homicide	1,233	1,279	1,281	1,218	1,282	1,388	1,265
Robbery	2,466	2,684	2,277	2,463	2,809	3,426	4,237
Injury	18,306	18,097	17,482	17,876	19,288	19,476	20,233
Assault	6,576	6,112	6,190	6,469	7,254	7,367	7,792
Intimidation	940	1,019	943	904	1,040	971	995
Fraud	47,341	52,047	45,923	49,394	49,426	48,279	43,431
Extortion	11,225	11,266	11,207	12,226	12,947	13,900	14,768
Embezzlement (a)	1,679	1,875	1,632	1,621	1,569	1,355	1,229
Embezzlement (b)	59,820	66,629	59,512	58,592	58,955	64,025	67,635
Rape	1,611	1,616	1,500	1,483	1,657	1,873	1,857
Forcible indecency	3,581	3,580	3,644	4,025	4,398	4,251	5,346
Arson	1,754	1,741	1,710	1,846	1,936	1,566	1,728
Obstruction of duty	965	1,113	1,188	1,268	1,434	1,395	1,531
Burglary	11,942	11,213	11,009	11,246	12,281	13,308	14,549
Damage to property	30,707	30,119	31,231	36,406	41,064	46,009	53,552
Total reported crimes	200,146	210,390	196,729	207,037	217,340	228,589	240,148

Notes: Data are from the National Police Agency of Japan. Embezzlement (a) excludes embezzlement of lost property; (b) is for embezzlement of lost property. Obstruction of duty is for the obstruction of the performance of duty by a public official (e.g., a police officer). Burglary refers to breaking into a residence.

Table A.2: Descriptive statistics of the data sample

Variable	N	Mean	SD	Min.	Max.
Crimes per 1,000 Residents (log)	1,376	2.59	.413	1.22	5.09
Total Unemployment Rate (log)	1,364	-3.19	.283	-4.10	-1.88
Male Unemployment Rate (log)	1,364	-3.09	.284	-3.97	-1.56
Female Unemployment Rate (log)	1,364	-3.34	.305	-4.32	-2.15
Taxable Income Per Capita (log)	1,376	0.348	.238	-.372	1.33
Local allocation tax per capita (log)	1,376	-3.33	1.59	-9.35	-.695
Malapportionment (log)	1,376	1.16	.371	.551	1.94
Population (log)	1,376	11.3	.913	8.80	15.0
Ratio of Population Aged 15 and Younger	1,376	.159	.0189	.0877	.240
Ratio of Population Aged 65 and Older	1,376	0.163	.0429	.0629	.295
Population Density (log)	1,376	6.75	1.37	3.10	9.84

Notes: Only the year 1996 and 1997 are used to calculate the descriptive statistics. The number of observations vary slightly depending on the years used and variables included in the models. Local allocation tax data are from Horiuchi and Saito (2003), who use socioeconomic variables from the 1995 census; for subsequent years, we collected corresponding data from the 2000 census, using interpolation to fill in missing years. Crime data are from annually reported official crime statistics, *Hanzai Tōkei*. When a single police district contains multiple municipalities, we use the population-weighted crime statistic as an approximation. However, if a municipality is covered by multiple police districts, we exclude all affected municipalities. This process drops eight cities in Tokyo (but none of Tokyo's 23 wards). Other socioeconomic variables are collected from Official Statistics of Japan (http://www.e-stat.go.jp/). Electoral variables are from the Reed-Smith Japanese House of Representatives Elections Dataset (Reed and Smith, 2018).

Table A.3: Complete first-stage results: regression of per capita local allocation tax on malapportionment

DV: Local allocation tax per capita (log)	(1)	(2)
Malapportionment (log)	.248	.206
	(.0533)	(.0530)
Year 1997	.224	.0409
	(.0329)	(.0792)
Population (log)		.825
		(5.42)
Ratio of population aged 15 and younger		.2.12
		(8.86)
Ratio of population aged 65 and older		27.1
		(9.20)
Population density (log)		5.43
		(4.98)
Municipality fixed effects	✓	✓
Within R^2	.157	.172
Cragg-Donald Wald F statistic	41.5	26.3
Kleibergen-Paap rk Wald F statistic	21.7	15.1
Number of units (municipalities)	688	688
Number of observations	1,376	1,376

Notes: Estimates are obtained using Stata's ado program `xtivreg2` (Schaffer, 2010). Within R^2 estimated separately with `xtreg` command. Standard errors in parentheses are clustered by single-member district (SMD) and year.

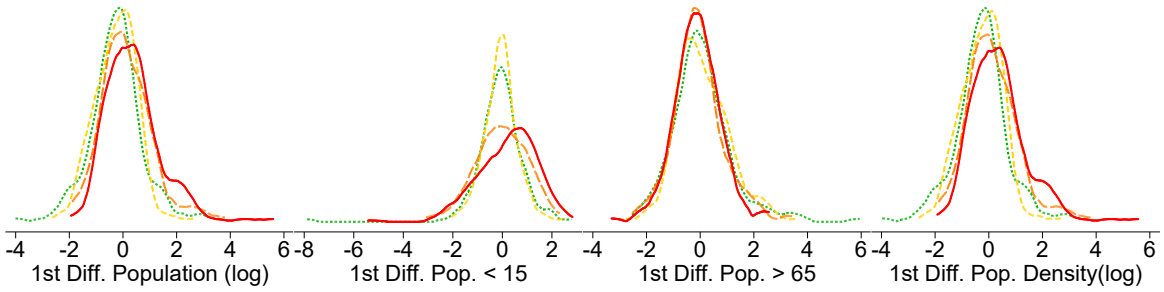

Figure A.1: Kernel density plots for the socioeconomic covariates included in the IV regression
Notes: Balances are compared between the cities in which the change in the malapportionment is in the upper 75th percentile (red solid line), the 50–75th percentile (orange long-dashed line), the 25–50th percentile (yellow dashed line), and those in the lower 25th percentile (green short-dashed line). All covariates in the figure are transformed by taking the first difference between the year 1996 and 1997.

Table A.4: First and second-stage results using the data from 1995 and 1996 to check trend effects

Stage:	1st Stage	2nd Stage
DV:	Local allocation tax per capita (log)	Crimes per 1,000 residents (log)
	(1)	(2)
Local Allocation Tax Per Capita (log)		-2.12
		(6.58)
Malapportionment (log)	-.478	
	(2.02)	
Year 1996	-.00071	.0310
	(.0449)	(.0688)
Population (log)	-5.06	-8.81
	(7.80)	(34.0)
Ratio of Population Aged 15 and Younger	16.8	37.4
	(5.70)	(112)
Ratio of Population Aged 65 and Older	19.8	40.5
	(7.08)	(132)
Population Density (log)	9.07	17.5
	(7.58)	(60.5)
Municipality fixed effects	✓	✓
Cragg-Donald Wald F statistic	0.055	
Kleibergen-Paap rk Wald F statistic	0.056	
AR 95% Confidence Set	$[-\infty, \infty]$	
Number of units (municipalities)	688	
Number of observations	1,376	

Notes: This analysis uses variables measured in 1995 and 1996 rather than 1996 and 1997 (as in the main analysis). Estimates are obtained using Stata's ado program `xtivreg2` (Schaffer, 2010). Standard errors in parentheses are clustered by SMD and year. The AR α% confidence set is calculated with Stata's ado program `weakiv` (Finlay, Magnusson and Schaffer, 2013), originally based on Anderson and Rubin (1949), where the confidence sets are estimated with Wald/Minimum Distance tests with a grid search of 2,000 times.

Table A.5: Complete second-stage results: regression of logged crime rates on per capita local allocation tax using malapportionment as an IV (with comparison to naïve OLS)

DV: Crimes per 1,000 residents (log)	OLS		IV	
	(1)	(2)	(3)	(4)
Local allocation tax per capita (log)	-.0351	-.0347	-.220	-.249
	(.0122)	(.0119)	(.103)	(.122)
Year 1997	.0529	-.0609	.0704	-.0858
	(.00639)	(.0387)	(.0139)	(.0451)
Population (log)		1.44		1.78
		(3.38)		(3.91)
Ratio of population aged 15 and younger		-2.61		-1.50
		(3.41)		(3.59)
Ratio of population aged 65 and older		18.1		25.9
		(6.21)		(8.52)
Population density (log)		-1.25		.330
		(3.32)		(3.97)
Municipality fixed effects	✓	✓	✓	✓
AR 95% Confidence Set			[-.453,-.030]	[-.541,-.026]
Number of units (municipalities)	688	688	688	688
Number of observations	1,376	1,376	1,376	1,376

Notes: Estimates are obtained using Stata's ado program `xtivreg2` (Schaffer, 2010). Standard errors in parentheses are clustered by SMD and year. The AR α% confidence set is calculated with Stata's ado program `weakiv` (Finlay, Magnusson and Schaffer, 2013), originally based on Anderson and Rubin (1949), where the confidence sets are estimated with Wald/Minimum Distance tests with a grid search of 2,000 times.

Table A.6: First and second-stage results using values from prior years (1995 and 1996) for dependent variable as a placebo test

Stage:	1st Stage	2nd Stage
DV:	Local allocation tax per capita (log)	Crimes per 1,000 residents (log)
	(1)	(2)
Local Allocation Tax Per Capita (log)		.061
		(.090)
Malapportionment (log)	.208	
	(.053)	
Year 1996	.036	.037
	(.082)	(.031)
Population (log)	1.01	2.38
	(5.43)	(1.33)
Ratio of Population Aged 15 and Younger	.981	-3.37
	(9.93)	(3.34)
Ratio of Population Aged 65 and Older	27.5	-6.35
	(9.22)	(5.27)
Population Density (log)	5.42	-2.57
	(4.98)	(1.33)
Municipality fixed effects	✓	✓
Cragg-Donald Wald F statistic	26.34	
Kleibergen-Paap rk Wald F statistic	15.15	
AR 95% Confidence Set	[-.116,.261]	
Number of units (municipalities)	684	
Number of observations	1,368	

Notes: Estimates are obtained using Stata's ado program `xtivreg2` (Schaffer, 2010). Standard errors in parentheses are clustered by SMD and year. The AR α% confidence set is calculated with Stata's ado program `weakiv` (Finlay, Magnusson and Schaffer, 2013), originally based on Anderson and Rubin (1949), where the confidence sets are estimated with Wald/Minimum Distance tests with a grid search of 2,000 times.

Table A.7: First and second-stage results using extended set of control variables

Stage:	1st Stage	2nd Stage
DV:	Local allocation tax per capita (log)	Crimes per 1,000 residents (log)
	(1)	(2)
Local Allocation Tax Per Capita (log)		-.325
		(.175)
Malapportionment (log)	0.152	
	(.0463)	
Year 1996	.00916	.122
	(.0834)	(.0572)
Population (log)	-7.95	-1.42
	(11.1)	(5.41)
Ratio of Population Aged 15 and Younger	-8.55	-3.12
	(8.35)	(4.88)
Ratio of Population Aged 65 and Older	11.4	21.7
	(8.81)	(7.78)
Population Density (log)	10.5	2.68
	(10.6)	(5.62)
Ratio of Workers in Primary Sector	3.57	-1.55
	(4.11)	(3.13)
Ratio of Workers in Tertiary Sector	8.19	2.54
	(3.74)	(2.66)
Population Density (DID)	-1.53	-.601
	(1.17)	(.884)
Municipality Fiscal Strength Index	-4.50	-1.32
	(.890)	(.814)
District Magnitude	-.00322	-.0132
	(.00903)	(.00767)
Total Number of Wins for	-.0287	-.00931
Govt. Coal. Candidates (log)	(.0138)	(.00954)
Cabinet Experiences for	.0141	.0164
Govt. Coal. Candidates	(.0129)	(.00853)
Municipality fixed effects	✓	✓
Cragg-Donald Wald F statistic	14.1	
Kleibergen-Paap rk Wald F statistic	10.8	
AR 95% Confidence Set	[-.778,-.011]	
Number of units (municipalities)	686	
Number of observations	1,372	

Notes: Estimates are obtained using Stata's ado program `xtivreg2` (Schaffer, 2010). Standard errors in parentheses are clustered by SMD and year. The AR α% confidence set is calculated with Stata's ado program `weakiv` (Finlay, Magnusson and Schaffer, 2013), originally based on Anderson and Rubin (1949), where the confidence sets are estimated with Wald/Minimum Distance tests with a grid search of 2,000 times.

Table A.8: First-stage results: regression of per capita local allocation tax on malapportionment and battleground district as two IVs

Dependent Variable :	Local allocation tax per capita (log)		
Vote Share Margin for Battleground	0.5%	1%	2%
	(1)	(2)	(3)
Malapportionment (log)	.207	.202	.208
	(.0532)	(.0533)	(.0529)
Dummy for Battleground District	.123	.0831	.0622
	(.0599)	(.0442)	(.0285)
Year 1997	.0714	.0589	.0524
	(.0813)	(.0795)	(.0772)
Population (log)	.438	1.35	1.28
	(5.08)	(5.10)	(5.38)
Ratio of Population Aged 15 and Younger	2.61	2.36	4.11
	(8.83)	(8.83)	(8.80)
Ratio of Population Aged 65 and Older	22.6	23.8	25.9
	(9.34)	9.35	9.04
Population Density (log)	5.14	4.60	4.88
	(4.62)	(4.63)	(4.91)
Municipality fixed effects	✓	✓	✓
Cragg-Donald Wald F statistic	16.8	16.6	16.6
Kleibergen-Paap rk Wald F statistic	9.44	9.68	11.2
Number of units (municipalities)	686	686	686
Number of observations	1,372	1,372	1,372

Notes: Estimates are obtained using Stata's ado program `xtivreg2` (Schaffer, 2010) with CUE option. Standard errors in parentheses are clustered by SMD and year. The dummy for battleground district is coded as 1 if the seat-adjusted difference in vote share (vote share difference × seat) between a marginal candidate of the governing party coalition and an opposition party candidate is less than 0.5%, 1%, or 2%, respectively.

Table A.9: Second-stage results: regression of logged crime rates on per capita local allocation tax using malapportionment and battleground district as two IVs

Dependent Variable :	Crimes per 1,000 Residents (log)		
Vote Share Margin for Battleground	0.5%	1%	2%
	(4)	(5)	(6)
Local allocation tax per capita (log)	-.228	-.326	-.226
	(.099)	(.115)	(.108)
Year 1997	-.0838	-.0925	-.0845
	(.0434)	(.0451)	(.0448)
Population (log)	1.86	1.34	1.95
	(3.86)	(4.05)	(3.85)
Ratio of Population Aged 15 and Younger	-1.55	-2.35	-1.37
	(3.54)	(3.77)	(3.47)
Ratio of Population Aged 65 and Older	25.1	28.3	25.1
	(7.96)	(8.32)	(8.32)
Population Density (log)	.133	1.09	.0817
	(3.88)	(4.08)	(3.89)
Municipality fixed effects	✓	✓	✓
P-value for Hansen J statistic	.827	.316	.753
AR 95% Confidence Set	[-.503, .011]	[-.634,-.118]	[-.535, .023]
AR 90% Confidence Set	[-.461,-.020]	[-.559,-.160]	[-.487,-.009]
Number of units (municipalities)	686	686	686
Number of observations	1,372	1,372	1,372

Notes: Estimates are obtained using Stata's ado program `xtivreg2` (Schaffer, 2010) with CUE option. Standard errors in parentheses are clustered by SMD and year. The AR α% confidence set is calculated with Stata's ado program `weakiv` (Finlay, Magnusson and Schaffer, 2013), originally based on Anderson and Rubin (1949), where the confidence sets are estimated with Wald/Minimum Distance tests with a grid search of 2,000 times. The dummy for battleground district is coded as 1 if the seat-adjusted difference in vote share (vote share difference $\times$ seat) between a marginal candidate of the governing party coalition and an opposition party candidate is less than 0.5%, 1%, or 2%, respectively.

Table A.10: Second-stage results of the regression of logged crime rates on per capita local allocation tax: (1) original, (2) excluding cities where the headquarters of designated crime syndicates are located, and (3) excluding cities that held local elections between FY 1996-97

Dependent Variable:	Crimes per 1,000 Residents (log)		
Type of Robustness Check	Original	Yakuza HQ	Local Elec.
	(1)	(2)	(3)
Local allocation tax per capita (log)	-.249	-.286	-.259
	(.122)	(.133)	(.124)
Year 1997	-.0858	.088	-.0859
	(.0451)	(.046)	(.0456)
Population (log)	1.78	2.35	1.85
	(3.91)	(3.96)	(3.91)
Ratio of Population Aged 15 and Younger	-1.50	-.545	-1.79
	(3.59)	(3.68)	(3.64)
Ratio of Population Aged 65 and Older	25.9	27.6	25.9
	(8.52)	(9.04)	(8.61)
Population Density (log)	.330	.118	.328
	(3.97)	(3.97)	(3.97)
Municipality fixed effects	✓	✓	✓
Cragg-Donald Wald F statistic	41.5	23.3	25.5
Kleibergen-Paap rk Wald F statistic	21.7	14.6	14.7
AR 95% Confidence Set	[-.541, -.026]	[-.609,-.044]	[-.559, -.034]
Number of units (municipalities)	688	671	679
Number of observations	1,376	1,342	1,358

Notes: Estimates are obtained using Stata's ado program `xtivreg2` (Schaffer, 2010). Standard errors in parentheses are clustered by SMD and year. The AR α% confidence set is calculated with Stata's ado program `weakiv` (Finlay, Magnusson and Schaffer, 2013), originally based on Anderson and Rubin (1949), where the confidence sets are estimated with Wald/Minimum Distance tests with a grid search of 2,000 times. We select the headquarters of crime syndicates that were designated by Anti-Organized Crime Law before 1996 and still exist as of June 14, 2021 (Iwate Prefectural Council for Eliminating Gangsters, 2021). Excluded cities where the headquarters of a designated crime syndicate (yakuza) was located are Kobe, Minato-ku (Tokyo), Kitakyushu, Naha, Kyoto, Hiroshima, Shimonoseki, Kagoshima, Kasaoka, Kurume, Takamatsu, Ichihara, Onomichi, Tagawa, Toshima-ku (Tokyo), Osaka, and Taito-ku (Tokyo). Excluded cities holding local elections between the fiscal years of 1996 and 1997 are Itoman, Kushiro, Onojo, Hikone, Kamifukuoka, Komae, Otsu, Nakatsugawa, Komoro.

Table A.11: First and second-stage results: regression of logged crime rates on per capita local allocation tax including towns and villages

Stage:	1st Stage	2nd Stage
DV:	Local allocation tax per capita (log)	Crimes per 1,000 residents (log)
	(1)	(2)
Local Allocation Tax Per Capita (log)		-.507
		(.346)
Malapportionment (log)	.0742	
	(.0182)	
Year 1996	-.0668	-.0626
	(.0164)	(.0255)
Population (log)	.796	-2.09
	(.383)	(1.13)
Ratio of Population Aged 15 and Younger	2.09	3.32
	(1.55)	(3.20)
Ratio of Population Aged 65 and Older	4.05	6.59
	(1.38)	(3.07)
Population Density (log)	.0860	1.51
	(.173)	(.757)
Municipality fixed effects	✓	✓
Cragg-Donald Wald F statistic	42.6	
Kleibergen-Paap rk Wald F statistic	16.7	
AR 95% Confidence Set	[-1.29,.160]	
Number of units (municipalities)	3,242	
Number of observations	6,484	

Notes: Estimates are obtained using Stata's ado program `xtivreg2` (Schaffer, 2010). Standard errors in parentheses are clustered by SMD and year. The AR α% confidence set is calculated with Stata's ado program `weakiv` (Finlay, Magnusson and Schaffer, 2013), originally based on Anderson and Rubin (1949), where the confidence sets are estimated with Wald/Minimum Distance tests with a grid search of 2,000 times.

Table A.12: Complete second-stage results: regression of logged total unemployment rates and logged male unemployment rates on logged per capita local allocation tax using malapportionment as an IV (with comparison to OLS)

DV:	Total Unemp. Rate (log)		Male Unemp. Rate (log)	
Estimation Method:	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Local allocation tax per capita (log)	-.00708	-.0670	-.00452	-.0489
	(.00191)	(.0241)	(.00196)	(.0234)
Year 1997	.0341	.0268	.0325	.0270
	(.00607)	(.00776)	(.00669)	(.00794)
Population (log)	-1.30	-1.19	-1.18	-1.10
	(.430)	(.569)	(.430)	(.505)
Ratio of Population Aged 15 and Younger	-4.42	-4.20	-4.87	-4.71
	(.681)	(.827)	(.717)	(.766)
Ratio of Population Aged 65 and Older	-3.51	-.1.31	-3.64	-2.01
	(.891)	(1.31)	(.983)	(1.37)
Population Density (log)	.949	1.39	.985	1.31
	(.415)	(.570)	(.411)	(.515)
Municipality fixed effects	✓	✓	✓	✓
Cragg-Donald Wald F statistic	n/a	26.4	n/a	26.4
Kleibergen-Paap rk Wald F statistic	n/a	15.2	n/a	15.2
AR 95% Confidence Set	n/a	[-.129,-.026]	n/a	[-.107,-.008]
Number of units (municipalities)	682	682	682	682
Number of observations	1,364	1,364	1,364	1,364

Notes: Estimates are obtained using Stata's ado program `xtivreg2` (Schaffer, 2010). Standard errors in parentheses are clustered by SMD and year. The AR α% confidence set is calculated with Stata's ado program `weakiv` (Finlay, Magnusson and Schaffer, 2013), originally based on Anderson and Rubin (1949), where the confidence sets are estimated with Wald/Minimum Distance tests with a grid search of 2,000 times. Unemployment rates are interpolated from the 1995 and 2000 censuses.

Table A.13: Complete second-stage results: regression of logged female unemployment rates and logged per capita taxable income on logged per capita local allocation tax using malapportionment as an IV (with comparison to OLS)

DV:	Female Unemp. Rate (log)		Taxable Income P.C. (log)	
Estimation Method:	OLS	IV	OLS	IV
	(5)	(6)	(7)	(8)
Local allocation tax per capita (log)	-.0124	-.107	-.0127	-.0126
	(.00259)	(.0290)	(.00226)	(.0100)
Year 1997	.0347	.0232	.0306	.0306
	(.00580)	(.00855)	(.00424)	(.00408)
Population (log)	-1.66	-1.49	2.90	2.90
	(.505)	(.785)	(2.10)	(2.09)
Ratio of Population Aged 15 and Younger	-3.82	-3.47	-.0607	-.0611
	(.758)	(1.11)	(.449)	(.448)
Ratio of Population Aged 65 and Older	-2.65	.807	-.258	-.260
	(.825)	(1.33)	(.781)	(.763)
Population Density (log)	.961	1.66	-3.10	-3.10
	(.490)	(.760)	(2.05)	(2.06)
Municipality fixed effects	✓	✓	✓	✓
Cragg-Donald Wald F statistic	n/a	26.4	n/a	26.3
Kleibergen-Paap rk Wald F statistic	n/a	15.2	n/a	15.1
AR 95% Confidence Set	n/a	[-.184,-.059]	n/a	[-.033,.008]
Number of units (municipalities)	682	682	688	688
Number of observations	1,364	1,364	1,376	1,376

Notes: Estimates are obtained using Stata's ado program `xtivreg2` (Schaffer, 2010). Standard errors in parentheses are clustered by SMD and year. The AR α% confidence set is calculated with Stata's ado program `weakiv` (Finlay, Magnusson and Schaffer, 2013), originally based on Anderson and Rubin (1949), where the confidence sets are estimated with Wald/Minimum Distance tests with a grid search of 2,000 times. Unemployment rates are interpolated from the 1995 and 2000 censuses.

References

Anderson, T. W. and Herman Rubin. 1949. "Estimation of the Parameters of a Single Equation in a Complete System of Stochastic Equations." *The Annals of Mathematical Statistics* 20(1):46–63.

Finlay, Keith, Leandro Magnusson and Mark E. Schaffer. 2013. "WEAKIV: Stata module to perform weak-instrument-robust tests and confidence intervals for instrumental-variable (IV) estimation of linear, probit and tobit models." Statistical Software Components, Boston College Department of Economics. https://ideas.repec.org/c/boc/bocode/s457684.html.

Horiuchi, Yusaku and Jun Saito. 2003. "Reapportionment and Redistribution: Consequences of Electoral Reform in Japan." *American Journal of Political Science* 47(4):669–682.

Iwate Prefectural Council for Eliminating Gangsters. 2021. "Status of Designated Crime Syndicates (Shitei Bouryokudan no Shitei Jyōkyō)." `http://www.rnac.ne.jp/~boutui/map.html`. Accessed: 2021-06-14.

Reed, Steven R. and Daniel M. Smith. 2018. "The Reed-Smith Japanese House of Representatives Elections Dataset." Harvard Dataverse, V1, https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/QFEPXD.

Schaffer, Mark E. 2010. "xtivreg2: Stata module to perform extended IV/2SLS, GMM and AC/HAC, LIML and k-class regression for panel data models." http://ideas.repec.org/c/boc/bocode/s456501.html.