PLACE-BASED POLICIES IN DEPRIVED NEIGHBOURHOODS: EFFECTS ON CRIME, INACTIVITY AND RESIDENTIAL COMPOSITION

ANNA PIIL DAMM, AHMAD HASSANI & JONAS SØNDERGAARD SØRENSEN
AARHUS UNIVERSITY

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DEPARTMENT OF ECONOMICS
AND BUSINESS ECONOMICS
AARHUS UNIVERSITY

MOTIVATION

Residential segregation on income and ethnicity is a global phenomenon

Literature on neighbourhood effects has shown that

1. Living in richer neighbourhood → Increases educational attainment and labour market earnings (Chetty, Hendren and Katz, 2016)
2. Living in richer neighbourhood → Reduces violent crime arrests (Chyn, 2018)
3. Contagious effects of crime (e.g Damm and Dustmann, 2014; Dustmann and Landersø; 2021)

What can policy-makers do? → Place-based policies

RESEARCH QUESTION

Estimate the effects of a Danish place-based policy, the Ghetto Plan, on:

1. Neighbourhood level outcomes
    - Ethnic composition (share of non-Westerns)
    - Share of inactives
    - Share of convicted criminals

2. Individual level outcomes
    - Probability of being convicted of a crime
    - (Probability of being charged with a crime)
    - Probability of being inactive

LITERATURE

Adds to the large literature on place-based policies targeted at disadvantaged areas (see Neumark and Simpson 2015, Duranton and Venables 2018 for review).

Little evidence that these types of policies improve conditions of residents or changes the residential composition (Gibbons et al. 2021; Gonzalez-Pampillon et al. 2022; Brachert et al. 2019; Freedman et al. 2023) with a few exceptions (Charnoz 2018; Diamond and McQuade 2019)

Emerging literature suggests that the lack of an effect may be due to a stigma effect of those areas (Garrouste and Lafourcade 2023; Dominguez et al. 2023; Andersson et al. 2023)

THE LIST

Introduced 1st January 2011.

Identified 26 public housing areas with at least 1,000 inhabitants as "ghettos", based on 3 criteria:

- Share of non-Western immigrants and descendants > 50 %
- Share of inactives > 40 %
- Share of criminals > 2.7%

INITIATIVES IN THE PLAN

Mandatory development plan → $14.2 mil.

Infrastructural improvements → $26.7 mil yearly.

Opening of job centres and moving subsidies to residents → $7.1 mil.

Police strategy for tackling crime in the treated areas

Other initiatives, that applied to treated areas and other neighbourhoods

DATA

Administrative register data:

- Population registry
- Crime registries
- Registered based labour force statistics
- Housing registry

DATA

Linked with data set constructed by Damm, Hassani and Schultz-Nielsen (2021), which divides Denmark in to 8,358 micro neighbourhoods (similar to census blocks in the US)

Micro neighbourhoods formed based on the following criteria:

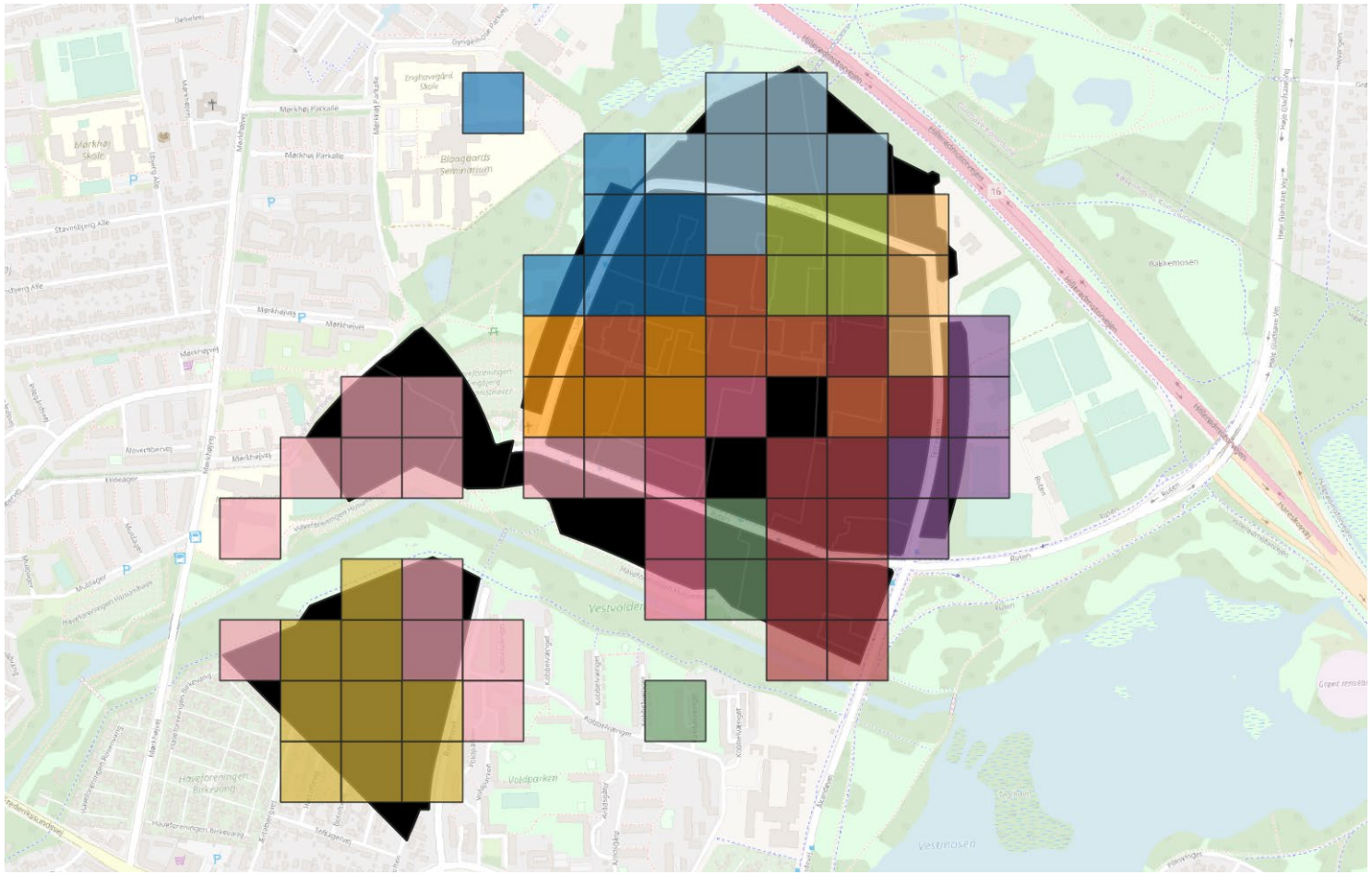
i) >150 households
ii) Unaltered over time
iii) Neighbourhoods based on physical proximity
iv) Physical barriers bound the neighbourhoods
v) Homogeneous in house type and homeownership within neighbourhood
vi) Homogeneous number of inhabitants between neighbourhoods
vii) Compact when possible

IDENTIFYING TREATED NEIGHBOURHOODS

Use GIS-data from the Ministry of Housing to show “ghettos” on a map (black polygon)

Lay micro neighbourhoods on top

Identify intersections



CONTROL NEIGHBOURHOODS – PROPENSITY SCORE MATCHING

Use propensity score matching to select control neighbourhoods

Match on:

1. The share of public housing
2. The share of non-Western immigrants
3. Shares of inactives
4. Shares of criminals

NEIGHBOURHOOD-LEVEL: EMPIRICAL STRATEGY

Estimate difference-in-difference model:

$$Y_{nt} = \alpha + \gamma_1 D_n + \theta(Post_t \times D_n) + \boldsymbol{\tau_t} + \epsilon_{nt},$$

where

Y_{nt} = Outcome of interest of neighbourhood n at time t

α = Constant

D_n = Indicator for being on the List in 2011

$Post_t$ = Indicator for being in 2010 or later

$\boldsymbol{\tau_t}$ = Year FE

ϵ_{nt} = Error term

NEIGHBOURHOOD-LEVEL: PRE-TRENDS TESTS

TABLE B1— PLACEBO TEST FOR PRE-TRENDS

	Dependent variable:		
	(1)	(2)	(3)
	Share of non-Westerns	*Share of criminals*	*Share of inactives*
Sample mean	0.4547	0.0233	0.4392
Std. dev.	(0.1625)	(0.0130)	(0.0938)
Explanatory variables:			
Neighbourhood on the List in 2011	0.0476	-0.0016	0.0050
	(0.0325)	(0.0030)	(0.0182)
Neighbourhood on the List in 2011 × In 2006	0.0058	0.0006	0.0022
	(0.0060)	(0.0019)	(0.0061)
Neighbourhood on the List in 2011 × In 2007	0.0015	0.0008	0.0002
	(0.0041)	(0.0016)	(0.0050)
Neighbourhood on the List in 2011 × In 2009	0.0025	0.0014	0.0001
	(0.0048)	(0.0016)	(0.0064)
Neighbourhood on the List in 2011 × Post Period	0.0136	-0.0016	-0.0053
	(0.0114)	(0.0016)	(0.0090)
R-squared	0.392	0.163	0.508
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
Observations	1,708	1,708	1,708

NEIGHBOURHOOD-LEVEL RESULTS: CONVICTED CRIMINALS

TABLE 8— BASELINE DD-ESTIMATES ON SHARES OF CRIMINALS

	Dependent variable: Share of criminals		
Sample mean		0.0233	
Std. dev.		(0.0130)	
	(1)	(2)	(3)
Explanatory variables:			
Neighbourhood on the List in 2011	0.0007	-0.0008	0.0005
	(0.0021)	(0.0028)	(0.0021)
Neighbourhood on the List in 2011 × Post period	-0.0023*	-0.0023*	-0.0023*
	(0.0012)	(0.0012)	(0.0013)
R-squared	0.055	0.163	0.073
Year FE	Yes	Yes	Yes
Municipality FE	No	Yes	No
Time-varying municipality characteristics	No	No	Yes
Observations	1,708	1,708	1,708

NEIGHBOURHOOD-LEVEL RESULTS: NON-WESTERNS

TABLE 7—NEIGHBOURHOOD LEVEL DD-ESTIMATES ON SHARES OF NON-WESTERNS

	Dependent variable: Share of non-Westerns		
Sample mean Std. dev.		0.4547 (0.1625)	
	(1)	(2)	(3)
Explanatory variables:			
Neighbourhood on the List in 2011	0.0310 (0.0292)	0.0501 (0.0325)	0.0295 (0.0281)
Neighbourhood on the List in 2011 × Post period	0.0111 (0.0109)	0.0111 (0.0110)	0.0113 (0.0120)
R-squared	0.020	0.392	0.049
Year FE	Yes	Yes	Yes
Municipality FE	No	Yes	No
Time-varying municipality characteristics	No	No	Yes
Observations	1,708	1,708	1,708

NEIGHBOURHOOD-LEVEL RESULTS: INACTIVES

TABLE 9— BASELINE DD-ESTIMATES ON SHARES OF INACTIVES

	Dependent variable: Share of inactives		
Sample mean		0.4392	
Std. dev.		(0.0938)	
	(1)	(2)	(3)
Explanatory variables:			
Neighbourhood on the List in 2011	0.0075	0.0057	-0.0030
	(0.0153)	(0.0178)	(0.0138)
Neighbourhood on the List in 2011 × Post period	-0.0059	-0.0059	-0.0009
	(0.0083)	(0.0084)	(0.0076)
R-squared	0.065	0.508	0.411
Year FE	Yes	Yes	Yes
Municipality FE	No	Yes	No
Time-varying municipality characteristics	No	No	Yes
Observations	1,708	1,708	1,708

INDIVIDUAL LEVEL: SAMPLES

Treatment group = Individuals living in a matched treatment area at the end of 2009
Control group = Individuals living in control are at the end of 2009

Restrict the sample to public housing residents

Age groups considered:
Conviction probability → 15 years and older
Inactive probability → Age 16-64

INDIVIDUAL LEVEL: EMPIRICAL STRATEGY

Estimate difference-in-difference model with controls:

$$Y_{int} = \alpha + \gamma_1 D_{in} + \theta(Post_t \times D_{in}) + \boldsymbol{Controls_{int}} + \boldsymbol{\tau_t} + \epsilon_{it},$$

where

Y_{int} = Outcome of interest of individual i in neighbourhood n at time t

D_{in} = Indicator for living in treated area in 2009

$Post_t$ = Indicator for being in 2010 or later

$\boldsymbol{Controls_{int}}$= Set of individual controls. Controls include age, gender and origin

$\boldsymbol{\tau_t}$ = Year FE

ϵ_{it} = Error term

INDIVIDUAL LEVEL: PRE-TRENDS TESTS

TABLE 6— PLACEBO TEST FOR PRE-TRENDS

	Dependent variable:					
	Charged with crime		*Convicted of crime*		*Inactive*	
	Sample:					
	Age 10 and above		Age 15 and above		Age 16-64	
Sample mean	0.0253		0.0153		0.4350	
Std. deviation	(0.1570)		(0.1226)		(0.4958)	
	(1)	(2)	(3)	(4)	(5)	(6)
Explanatory variables:						
Female	-0.0296***		-0.0182***		0.0725***	
	(0.0011)		(0.0007)		(0.0043)	
Western origin	-0.0038**		-0.0023		-0.0380***	
	(0.0017)		(0.0014)		(0.0135)	
Non-Western origin	0.0054***		0.0011		0.1020***	
	(0.0011)		(0.0008)		(0.0087)	
Living in treated area in 2009 × In 2006	-0.0026	-0.0026	-0.0017	-0.0017	-0.0016	0.0012
	(0.0016)	(0.0017)	(0.0016)	(0.0016)	(0.0063)	(0.0045)
Living in treated area in 2009 × In 2007	-0.0018	-0.0014	0.0005	0.0007	-0.0051	-0.0035
	(0.0017)	(0.0018)	(0.0015)	(0.0014)	(0.0046)	(0.0040)
Living in treated area in 2009 × In 2009	-0.0018	-0.0013	-0.0006	-0.0002	-0.0002	-0.0024
	(0.0017)	(0.0017)	(0.0017)	(0.0017)	(0.0048)	(0.0039)
Living in treated area in 2009 × Post Period	-0.0027*	-0.0020	-0.0023*	-0.0018	-0.0079	-0.0029
	(0.0014)	(0.0015)	(0.0013)	(0.0012)	(0.0048)	(0.0040)
R-squared	0.026	0.007	0.016	0.003	0.125	0.025
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes	Yes	Yes
Neighbourhood FE	Yes	No	Yes	No	Yes	No
Individual FE	No	Yes	No	Yes	No	Yes
Observations	773,726	773,726	701,316	701,316	585,969	585,969
Unique individuals	66,041	66,041	61,131	61,131	54,683	54,683

INDIVIDUAL LEVEL RESULTS - CONVICTED

TABLE 6— DD RESULTS FOR BEING CONVICTED OF A CRIME

	Dependent variable: Convicted of a crime		
	Sample: Individuals age 15 and above		
Sample mean Std. deviation		0.0153 (0.1226)	
	(1)	(2)	(3)
Explanatory variables:			
Living in treated area in 2009	0.0022* (0.0011)		
Female	-0.0184*** (0.0007)	-0.0182*** (0.0007)	
Western origin	-0.0022 (0.0015)	-0.0023 (0.0014)	
Non-western origin	0.0013 (0.0008)	0.0011 (0.0008)	
Living in treated area in 2009× Post Period	-0.0018** (0.0009)	-0.0018** (0.0008)	-0.0015** (0.0007)

INDIVIDUAL LEVEL RESULTS - INACTIVE

TABLE 7— DD RESULTS FOR BEING INACTIVE

	Dependent variable: Inactive		
	Sample: Individuals age 16-64		
Sample mean		0.4350	
Std. deviation		(0.4958)	
	(1)	(2)	(3)
Explanatory variables:			
Living in treated area in 2009	0.0164		
	(0.0141)		
Female	0.0716***	0.0725***	
	(0.0043)	(0.0043)	
Western origin	-0.0464***	-0.0380***	
	(0.0141)	(0.0135)	
Non-western origin	0.0998***	0.1020***	
	(0.00947)	(0.00868)	
Living in treated area in 2009× Post Period	-0.0062	-0.0062	-0.0017
	(0.0048)	(0.0047)	(0.0044)

INDIVIDUAL LEVEL RESULTS – DYNAMIC TREATMENT EFFECTS

TABLE 9— DYNAMIC TREATMENT EFFECTS

	Dependent variable:	
	Convicted of a crime	Inactive
	Sample:	
	Age 15 and above	*Age 16-64*
Sample mean	0.0153	0.4350
Std. deviation	(0.1226)	(0.4958)
	(1)	(2)
Explanatory variables:		
Female	-0.0182***	0.0725***
	(0.0007)	(0.0043)
Western origin	-0.0023	-0.0380***
	(0.0014)	(0.0135)
Non-western origin	0.0011	0.1020***
	(0.0008)	(0.0087)
Living in treated area in 2009 × 2010-2013 period	-0.0018*	-0.0027
	(0.0009)	(0.0045)
Living in treated area in 2009 × 2014-2016 period	-0.0020*	-0.0060
	(0.0011)	(0.0051)
Living in treated area in 2009 × 2017-2019 period	-0.0017*	-0.0109*
	(0.0009)	(0.0062)

SUMMARY OF FINDINGS

The Ghetto List lead to:

1. Reductions in the share of criminals at the neighbourhood level
2. Reductions in conviction probabilities on the treated individuals
3. No effect on ethnic composition or shares of inactives
4. No effect on probabilities of being inactive

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