Assessing the Evidence on Neighborhood Effects from Moving to Opportunity

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Intent vs Impact:
Evaluating Individual- and Community-Based Programs

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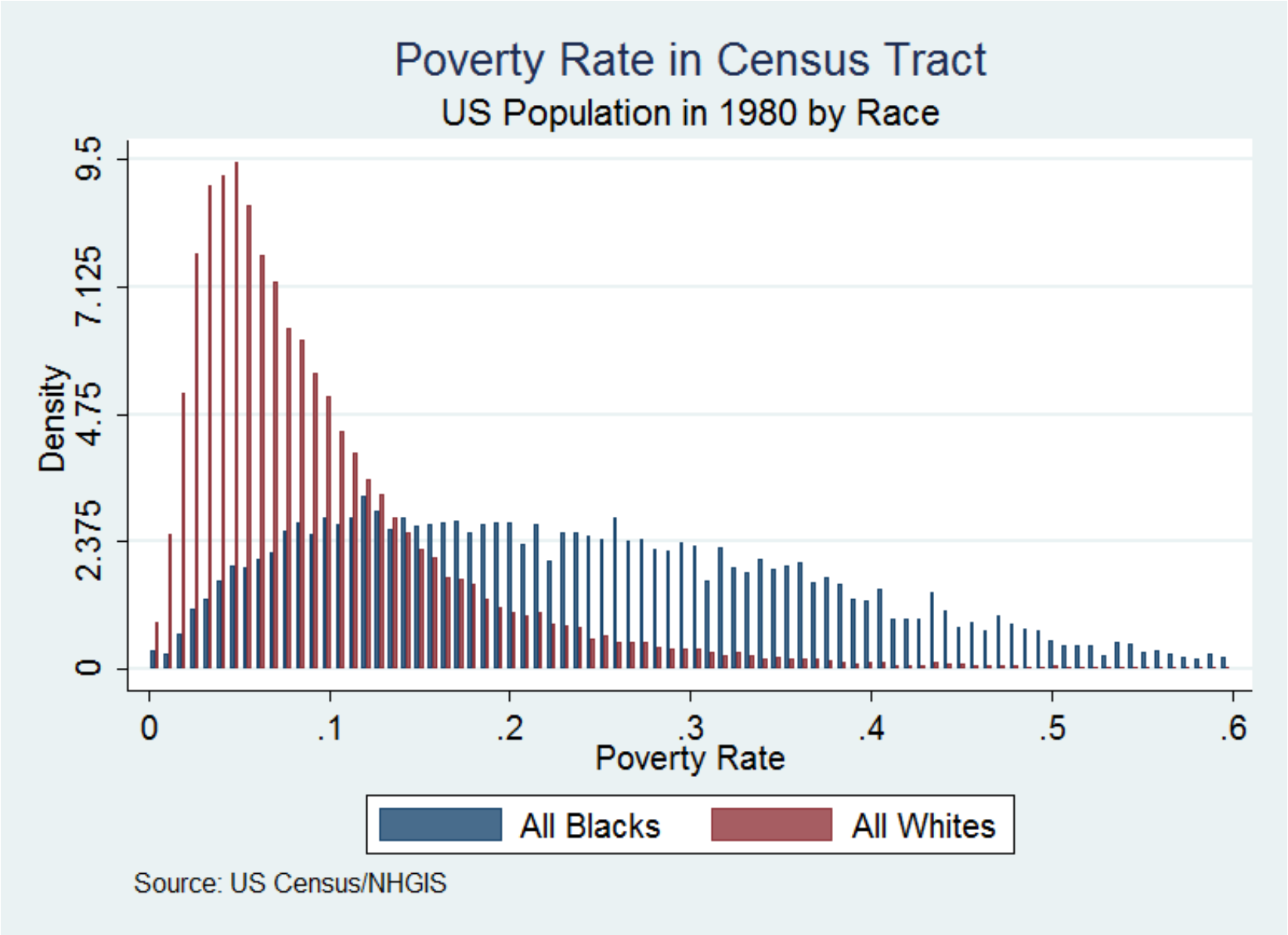
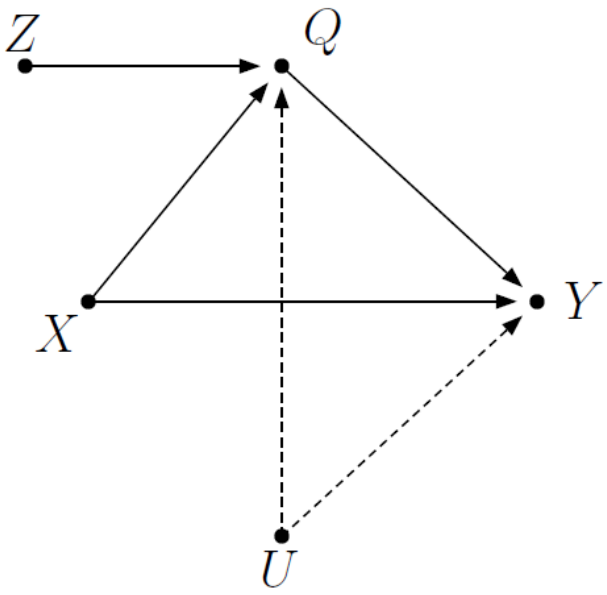
Race and Neighborhood Quality



Neighborhood Effects

Wilson (1987) initiates lit on nbd effects and race, but difficult to ID



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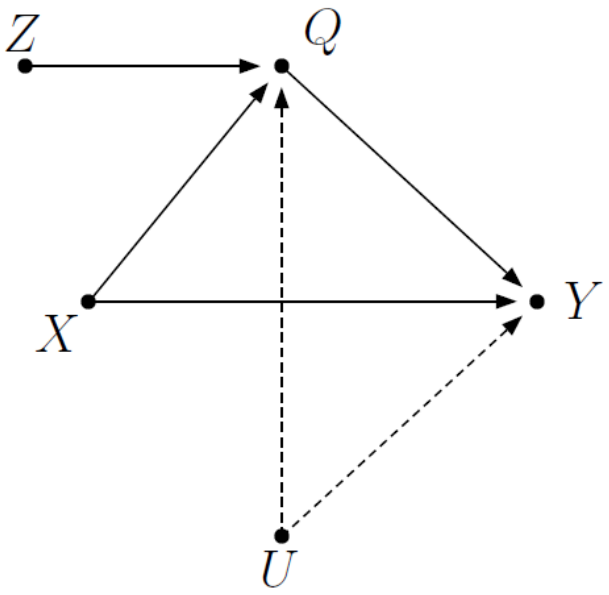

Use housing mobility programs as Z

- Gautreaux showed large effects, evidence of externalities
- MTO sought to replicate, results disappointing

Moving to Opportunity

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- Families randomly allocated into treatment groups:
  - Exp: Section 8 w/ restriction $\leq$ 10% poverty for 1 year
  - Section 8: Section 8 w/ no restriction
  - Control: Project-based assistance

MTO Program Effects

Economic Self-Sufficiency

Avg of 5 measures of employment, earnings, and public assistance

5–7 years after randomization (Kling et al. (ECMA 2007))
10–15 years after randomization (Ludwig et al. (AER 2013))

- ITT and TOT effects for MTO voucher use insignificant
- No IV analysis since program effects insignificant

Current Interpretation of MTO

Results from MTO contradict the “widespread view that living in a disadvantaged inner-city nbd depresses labor market outcomes...” (AER P&P, 2013)

MTO provides “surprising and influential evidence weighing against the view that nbd effects are a primary determinant of low earnings...” (JEL, 2010)

“The randomized evaluation of MTO housing vouchers fits this mold [of a peer experiment randomly allocating groups to varying peer environments]...” (Labour Econ, 2014)

Learning about Nbd Effects $Y(D)$

$$Y_i = i\text{'s employment}$$
$$D_i = i\text{'s nbd quality}$$
$$Z_i = \mathbf{1}\{i \text{ received MTO voucher}\}$$

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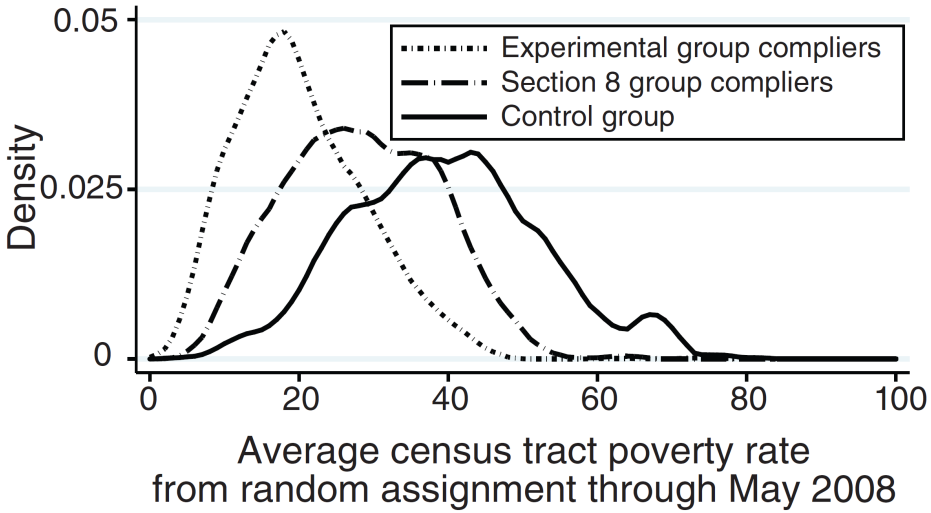

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Answer

A nbd effects model $Y(D)$ assuming nbd quality D is

- Binary
- A scalar function of nbd poverty

Statement (†) not true in more general models of nbd effects

Assumptions and Definitions

M1: $D_i \equiv \mathbf{1}\{\text{ individual } i \text{ lives in a high-quality nbd }\}$

M2: $Z_i \equiv \mathbf{1}\{\text{ individual } i \text{ received an MTO voucher }\}$

M3: $Y_i \equiv \mathbf{1}\{\text{ individual } i \text{ is employed }\}$

D1 Treatment is moving with an MTO voucher

D2 Treatment is moving to a high-quality nbd

<u>States of the world</u>

Consider treatment response to be a state of the world

$Y^s(D)$ where $s \in \mathcal{S}$ (as in Manski)

$4^3 = 64$ States of the World

Column	1	2	3	4	5	6
Row	$D(Z=1)$	$D(Z=0)$	$Y(D=1)$	$Y(D=0)$	$Y(Z=1)$	$Y(Z=0)$
(World 1)	1	1	1	1	1	1
(World 2)					1	0
(World 3)					0	1
(World 4)					0	0
(World 5)			1	0	1	1
(World 6)					1	0
(World 7)					0	1
(World 8)					0	0
(World 9)			0	1	1	1
(World 10)					1	0
(World 11)					0	1
(World 12)					0	0
(World 13)			0	0	1	1
(World 14)					1	0
(World 15)					0	1
(World 16)					0	0
(World 17)	1	0	1	1	1	1
(World 18)					1	0
(World 19)					0	1
(World 20)					0	0
(World 21)			1	0	1	1
(World 22)					1	0
(World 23)					0	1
(World 24)					0	0
(World 25)			0	1	1	1
(World 26)					1	0
(World 27)					0	1
(World 28)					0	0
(World 29)			0	0	1	1
(World 30)					1	0
(World 31)					0	1
(World 32)					0	0
(World 33)	0	1	1	1	1	1

Empirically Eliminating Worlds

Empirical evidence from MTO: $D(Z = 0) = 0$

Rules out worlds in which $D(Z = 0) = 1$

Eliminates Worlds 1–16 and 33–48

32 Remaining States of the World

Column	1	2	3	4	5	6
Row	$D(Z=1)$	$D(Z=0)$	$Y(D=1)$	$Y(D=0)$	$Y(Z=1)$	$Y(Z=0)$
(World 17)	1	0	1	1	1	1
(World 18)					1	0
(World 19)					0	1
(World 20)					0	0
(World 21)			1	0	1	1
(World 22)					1	0
(World 23)					0	1
(World 24)					0	0
(World 25)			0	1	1	1
(World 26)					1	0
(World 27)					0	1
(World 28)					0	0
(World 29)			0	0	1	1
(World 30)					1	0
(World 31)					0	1
(World 32)					0	0
(World 49)	0	0	1	1	1	1
(World 50)					1	0
(World 51)					0	1
(World 52)					0	0
(World 53)			1	0	1	1
(World 54)					1	0
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(World 56)					0	0
(World 57)			0	1	1	1
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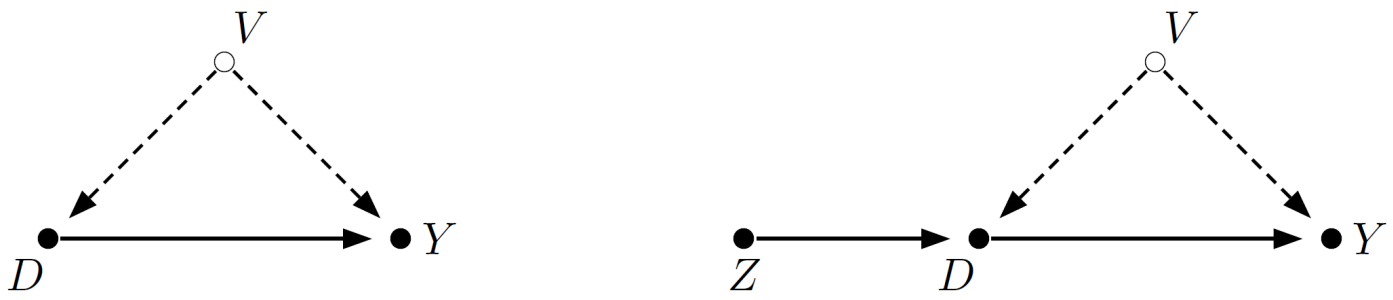
(World 61)			0	0	1	1
(World 62)					1	0
(World 63)					0	1
(World 64)					0	0

Theoretically Eliminating Worlds



(a) The Neighborhood Effects Model (b) The MTO Intervention to the Nbd Effects Model

Figure 1: Directed Acyclic Graphs of the Neighborhood Effects Model

Worlds 18, 19, and 20 inconsistent with our model

Continue eliminating worlds that

- Contradict empirical observation
- Require voucher affects outcomes not through nbd quality
- Inconsistent with model of nbd effects

8 Remaining States of the World

After restrictions imposed by data and theory

Column	1	2	3	4	5	6
Row	$D(Z=1)$	$D(Z=0)$	$Y(D=1)$	$Y(D=0)$	$Y(Z=1)$	$Y(Z=0)$
(World 17)	1	0	1	1	1	1
(World 22)			1	0	1	0
(World 27)			0	1	0	1
(World 32)			0	0	0	0
(World 49)	0	0	1	1	1	1
(World 56)			1	0	0	0
(World 57)			0	1	1	1
(World 64)			0	0	0	0

Only worlds 32, 56, and 64 consistent with evidence on program effects from MTO

Which State of the World?

Column	1	2	3	4	5	6
Row	$D(Z=1)$	$D(Z=0)$	$Y(D=1)$	$Y(D=0)$	$Y(Z=1)$	$Y(Z=0)$
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(World 56)			1	0	0	0
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(World 64)			0	0	0	0

If we also adopt the assumptions:

NQB Nbd quality binary: $D \equiv \mathbf{1}\{q \geq q^*\}$

NQP Nbd quality a 1-D vector with $q = \alpha\text{poverty}$

NQB+NQP $\Rightarrow$ in world 17, 22, 27, or 32

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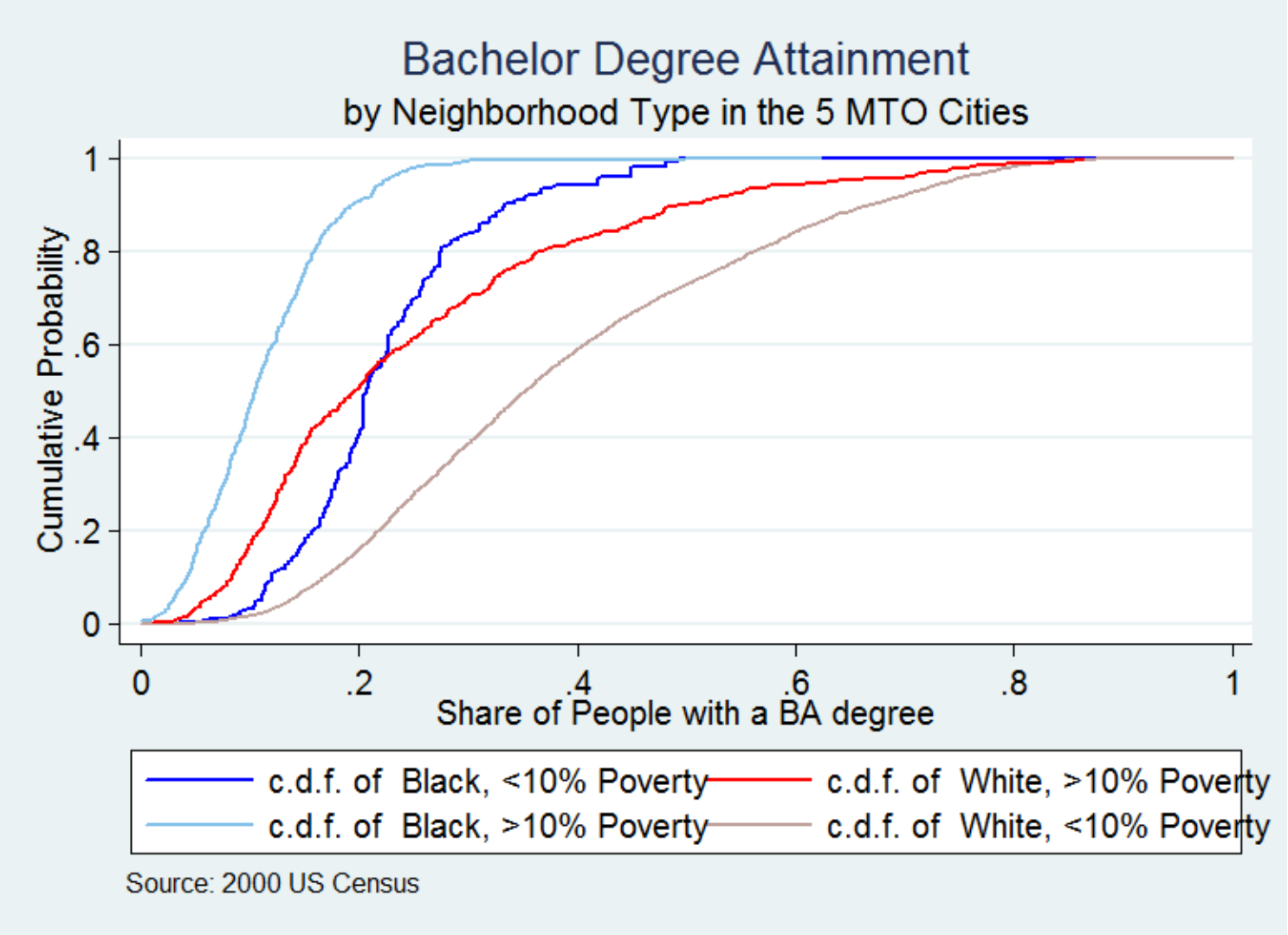
Black Low-Poverty ≈ White High-Poverty



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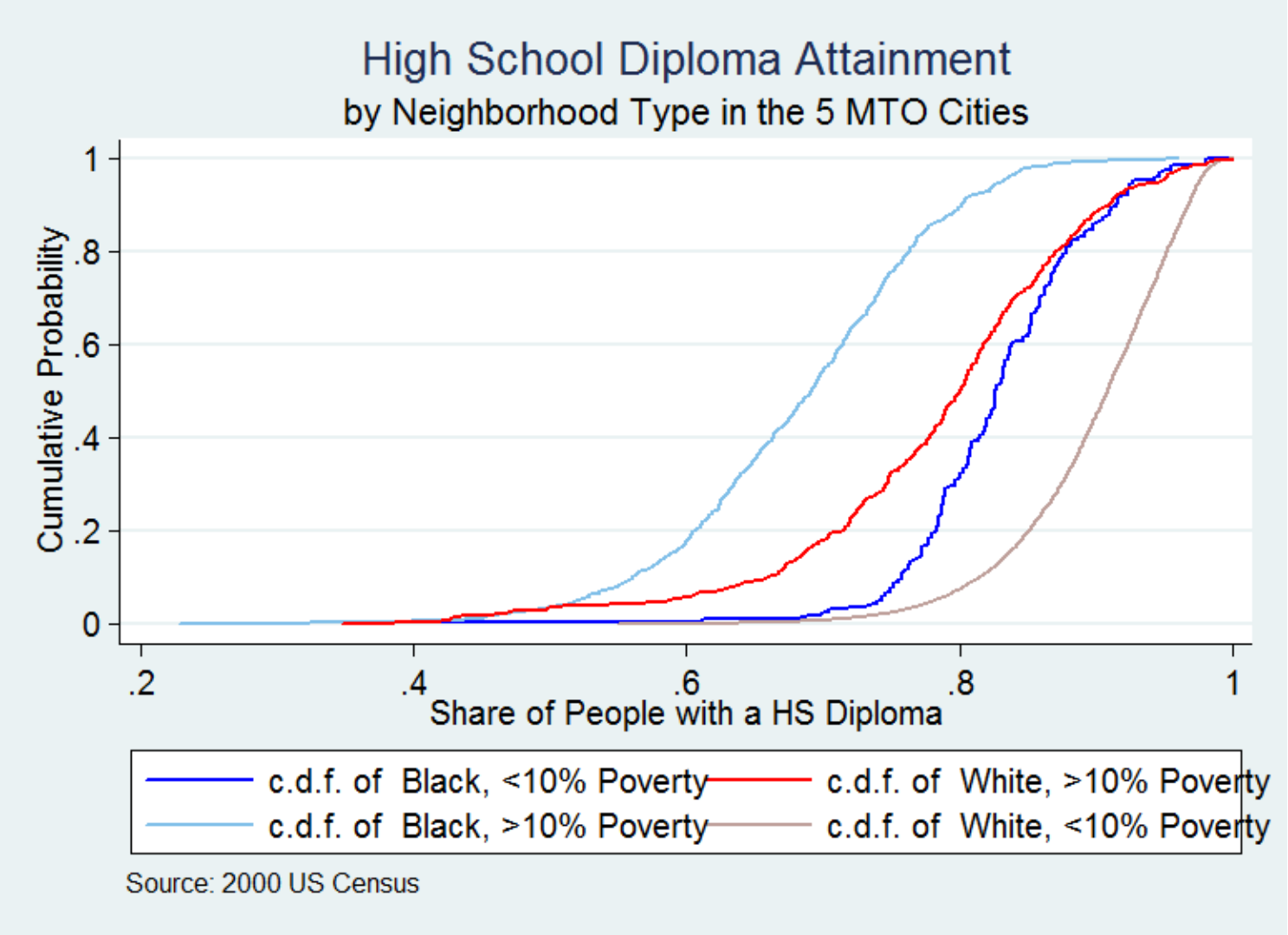

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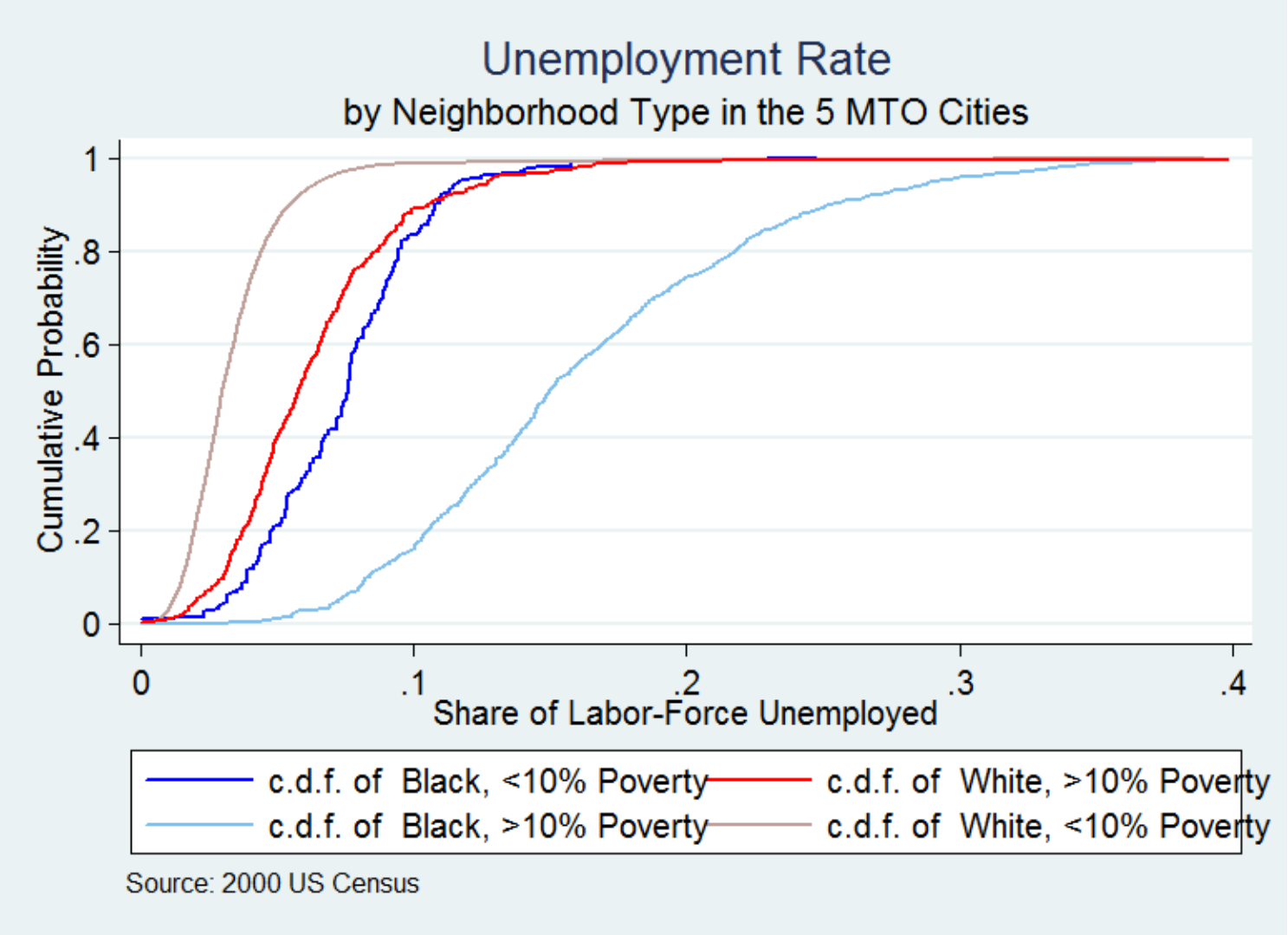

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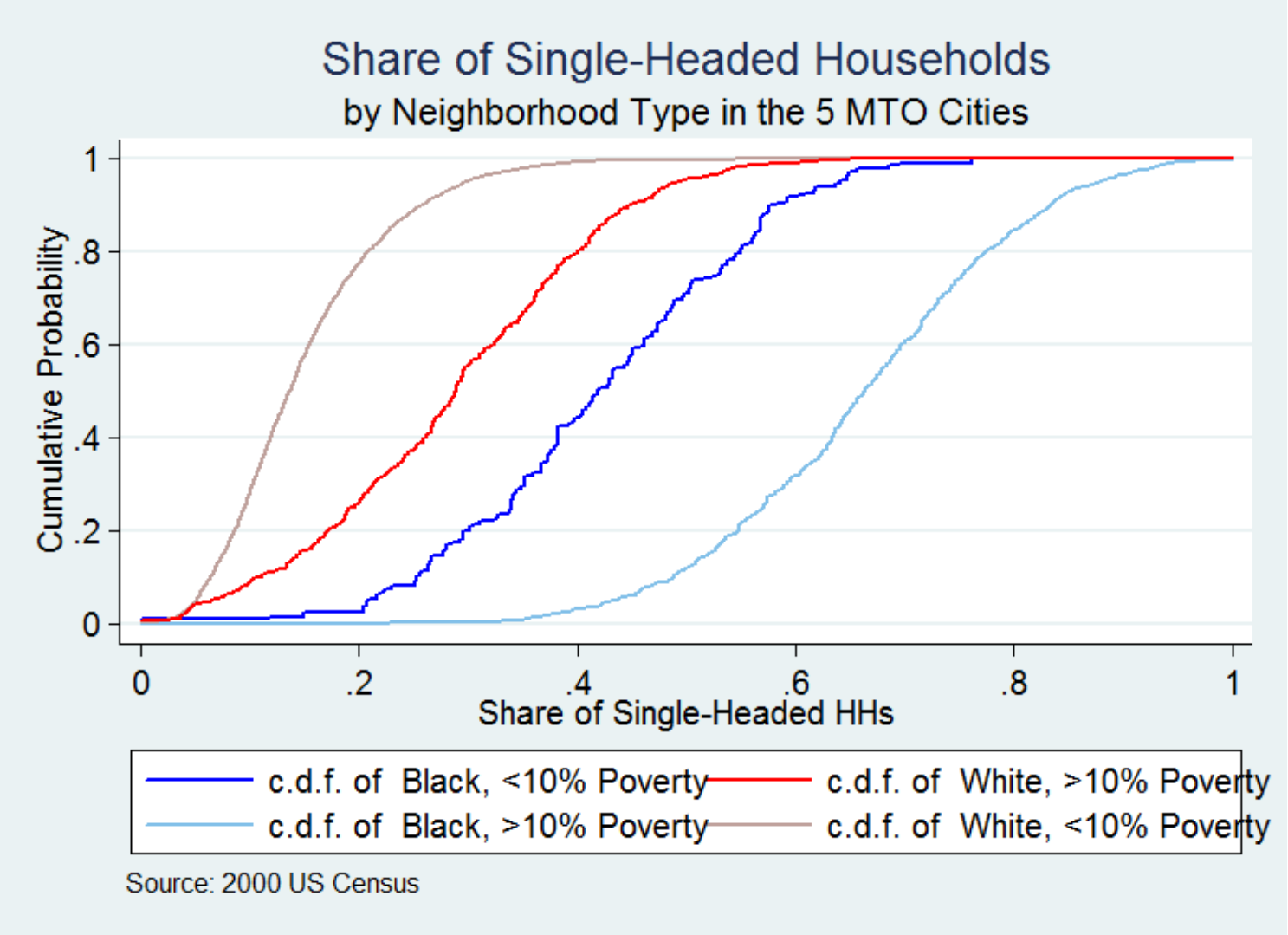
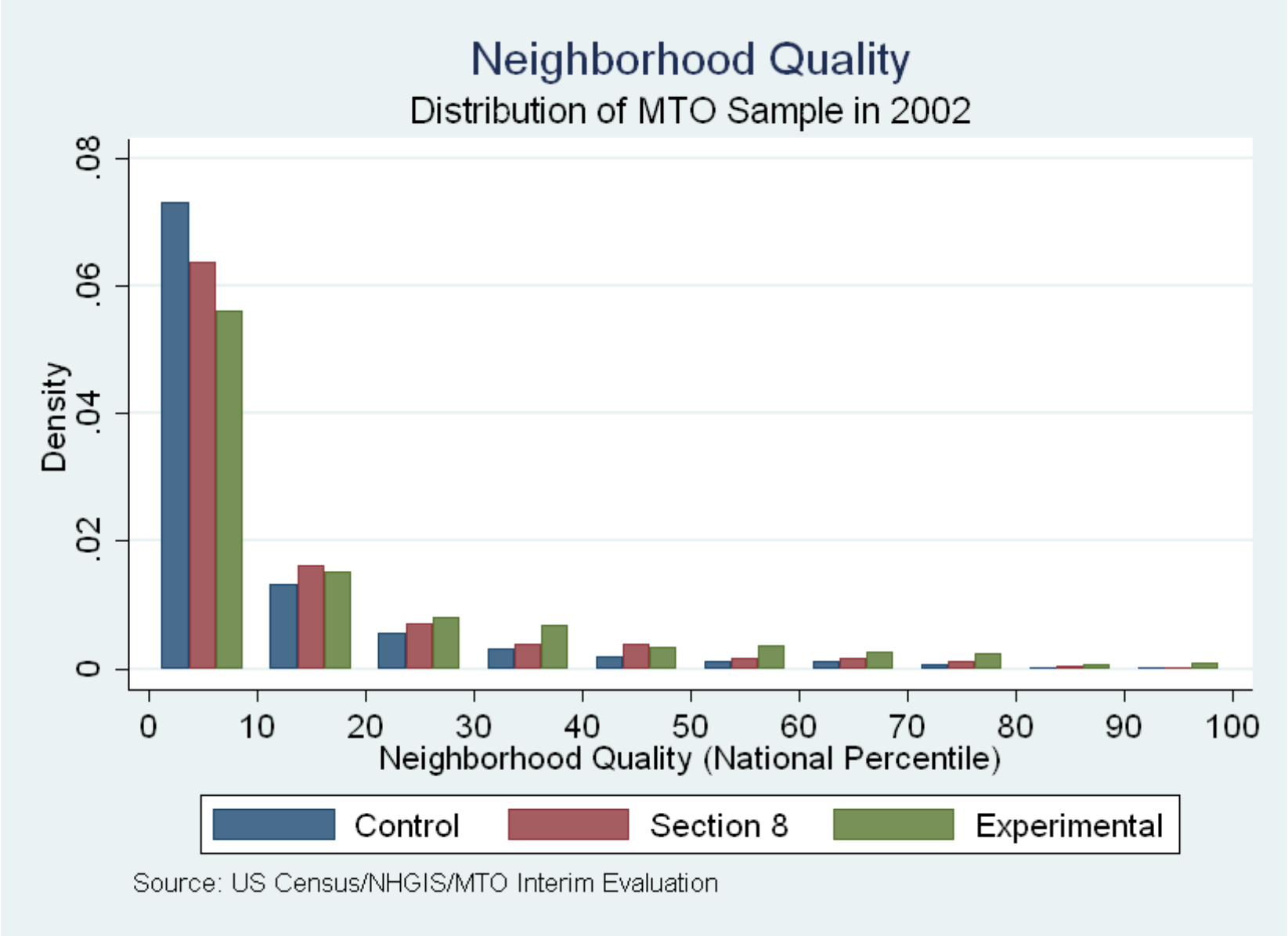


Neighborhood Quality at Interim Evaluation



Conclusion

Interpretation of results from MTO
in terms of nbd effects is nuanced