Investigating the American Dream: The Role of Neighborhoods

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Motivation

- Over the last 40 years, a large increase in income inequality in the United States
- A simultaneous rise in residential income segregation
- Growing empirical evidence on the role of neighborhood exposure effects

Question: What is the role of local neighborhood spillovers in shaping inequality and intergenerational mobility?

Literature

Overview

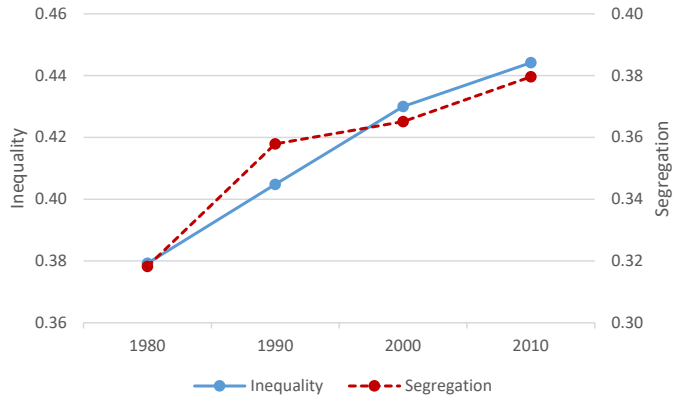
1. Facts about inequality, segregation and intergenerational mobility
2. Theory linking residential segregation and inequality based on the neighborhoods exposure effects
3. Policy implications

Empirical Facts

Inequality and Segregation Across Time

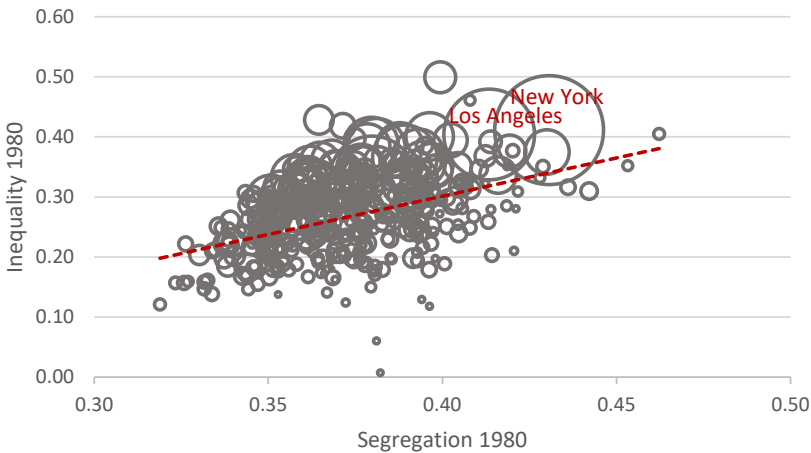
- Inequality measure: Gini coefficient
- Segregation measure: Dissimilarity index

Definition

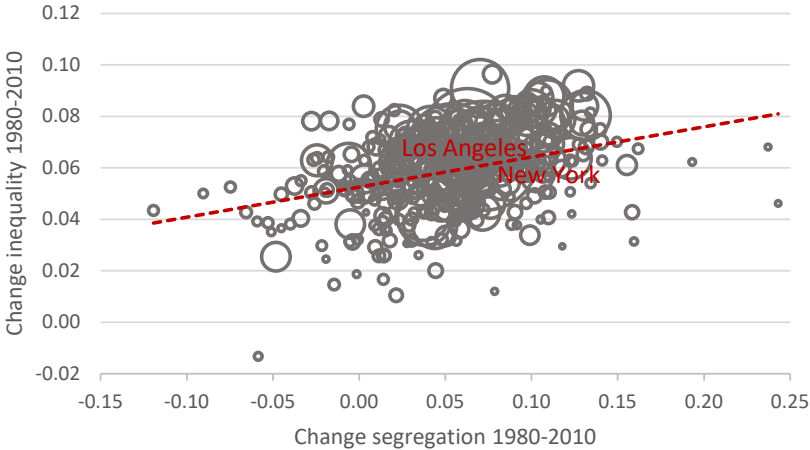


Data sources: Census tract data 1980 - 2010; American Community Surveys 2008-2012. Sample: 4000 average pop census tract, 120 tracts in average metro, 380 metros.

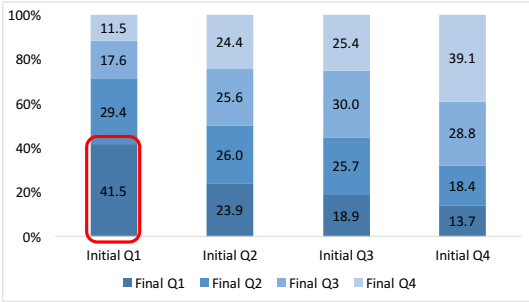
Inequality and Segregation Across Space



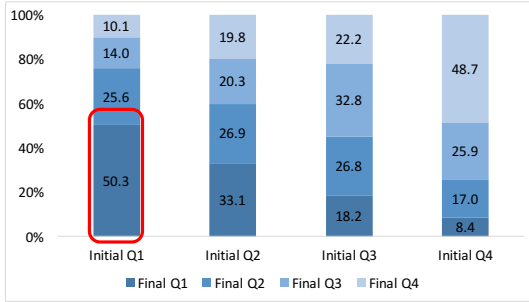
Inequality and Segregation Across Space and Time



Segregation and Intergenerational Mobility



(a) Low Segregation



(b) High Segregation

Using geo-coded NLSY data; methodology from Aaronson and Mazumder (2008)

Theory

A Theory of Inequality and Segregation

- An overlapping-generations general equilibrium model with residential choice
- A key ingredient is the presence of a local spillover affecting children's outcomes
- An endogenous spillover mechanism amplifies the effects
- Disciplined using micro-level estimates from Chetty and Hendren (2018)

Inequality and segregation reinforce each other and shape intergenerational mobility

Roadmap

- Static model with exogenous spillover
  - equilibrium
  - utilitarian planner
  - transfer policy
- Dynamic model with endogenous spillover
  - calibration
  - steady state analysis
  - skill premium shock
- Extensions and applications

Static Model with Exogenous Spillovers

Setup

- continuum of measure 1 of parents, each with one child
- each parent is defined by a pair (w, a):
  - $w \in [\underline{w}, \overline{w}]$ = her wage
  - $a \in [\underline{a}, \overline{a}]$ = her child's latent productivity
- define $F(w, a)$ the joint distribution of w and a
- for now assume a is *iid*

Geography and Housing Market

- two neighborhoods: $k \in \{A, B\}$
- each agent live in a house of same size and quality
- R_k = rent in neighborhood k
- housing supply assumptions:
  - fixed supply H in neighborhood $A \Rightarrow R_A$ endogenous
  - fully elastic supply of houses in neighborhood B with MC $= 0 \Rightarrow R_B = 0$

Preferences and Wage Process

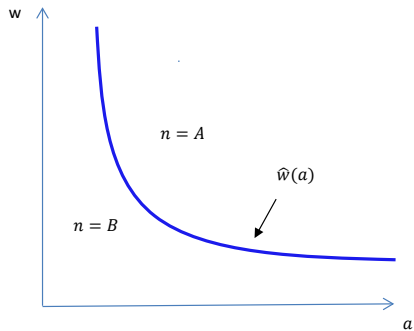
- parents choose c and n to maximize their utility (taking as given R_A):

$$\begin{aligned} U(w,a) &= \max_{c,n} \log(c) + \log(w') \\ s.t. \quad & c + R_n \leq w \\ & w' = b + a^{\alpha} S_n{}^{\beta} \end{aligned}$$

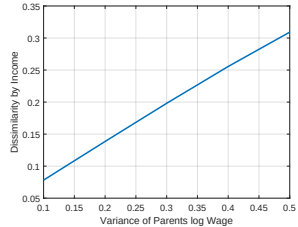
- S_k = spillover in neighborhood k
  (schools, peer effects, network effects, culture and social norms, ...)
- for now S_A and S_B are exogenous
- no borrowing
- we abstract from redistribution of profits for simplicity

Equilibrium Characterization

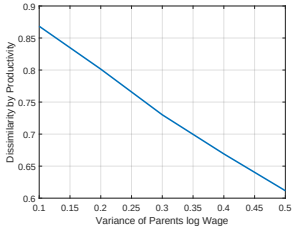
Definition. *For given $S_A > S_B$, an equilibrium is a residential policy $\hat{w}(a)$ and a rental rate R_A that solve parents' optimization and housing market clearing.*



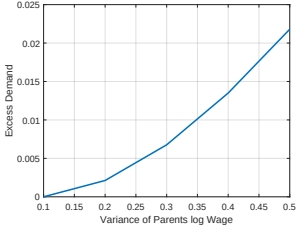
Inequality ⇒ Segregation by income



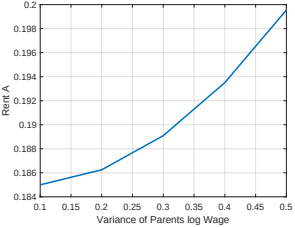
(a) Segregation by Income



(b) Segregation by Productivity

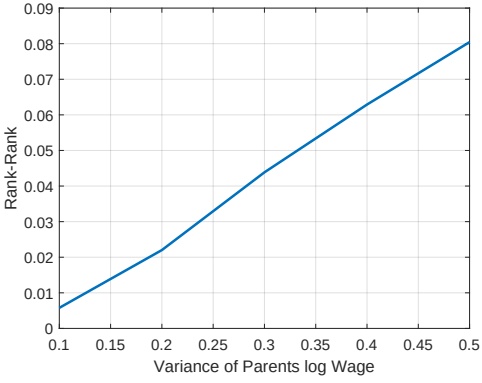


(c) Excess Demand A



(d) Rent A

Inequality ⇒ Intergenerational Mobility



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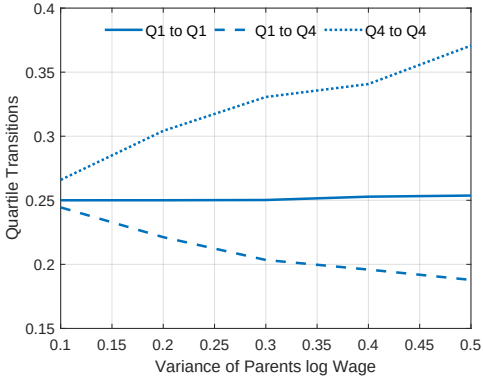
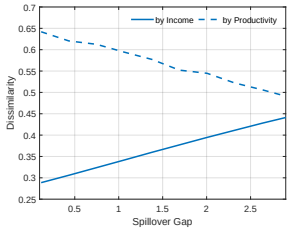
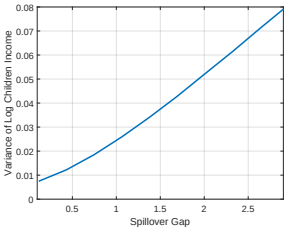


(b) Quartile Transitions

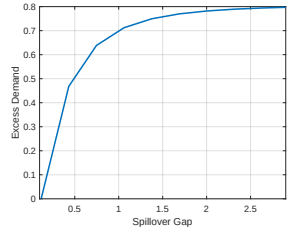
Segregation by income ⇒ Inequality



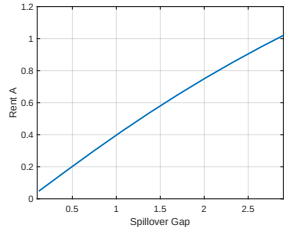
(a) Segregation



(b) Inequality

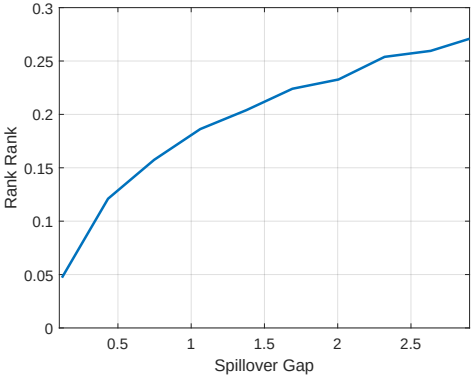


(c) Excess Demand A



(d) Rent A

Segregation by income ⇒ Intergenerational Mobility



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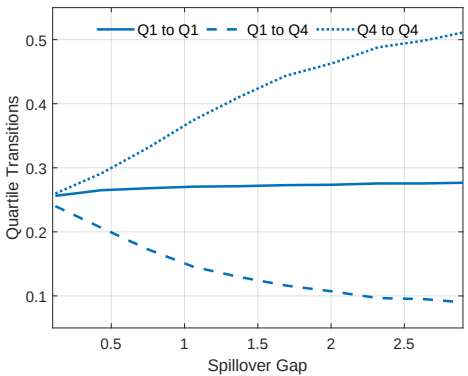


(b) Quartile Transitions

Utilitarian Planner

- Utilitarian planner chooses consumption policy $c(w, a)$ and residential policy $n(w, a)$ to maximize

$$\int \int [\log(c(w, a)) + \log(b + a^{\alpha} S^{\beta}_{n(w,a)})] dF(w, a)$$

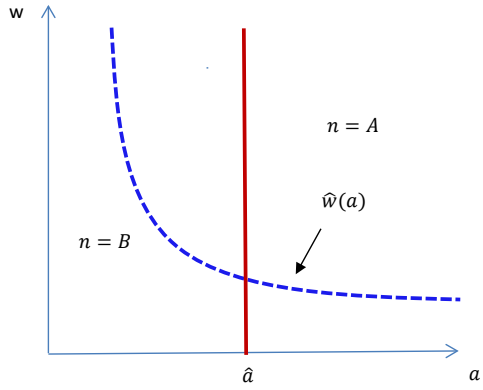
- resource constraint:

$$\int \int c(w, a) dF(w, a) \leq \int \int w dF(w, a)$$

- housing supply constraint in neighborhood A:

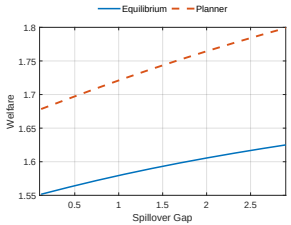
$$\int \int_{n(w,a)=A} dF(w, a) \leq H$$

Residential Choice: Planner vs Equilibrium

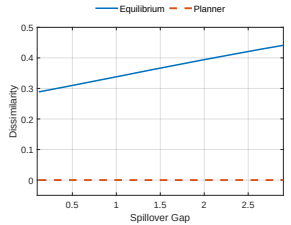


- planner: no sorting by income, perfect sorting by productivity
- gap with equilibrium increasing in spillover gap

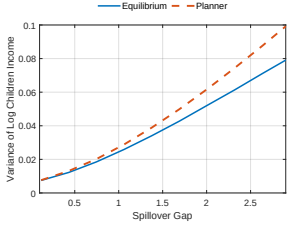
Varying the Spillover Gap: Inequality and Segregation



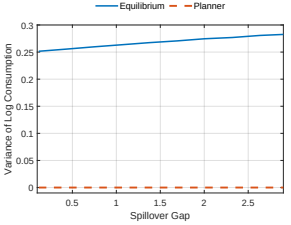
(a) Welfare



(b) Segregation

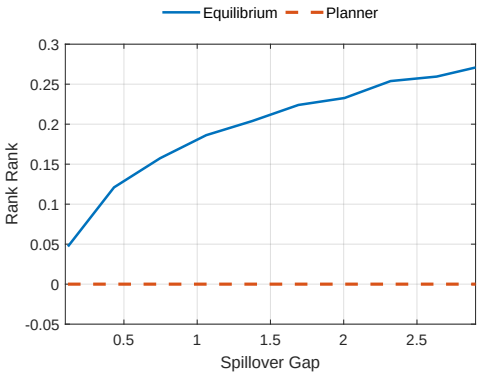


(c) Income Inequality



(d) Consumption Inequality

Varying the Spillover Gap: Intergenerational Mobility



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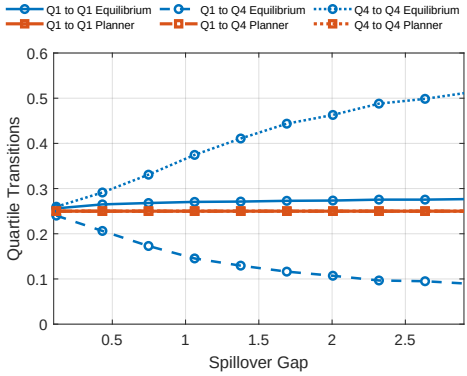
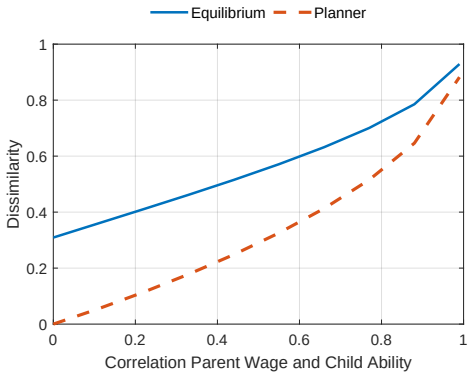


(b) Quartile Transitions

- so far children's *a* assumed to be iid. Introducing correlation next

Varying correlation of ability and wage: Inequality and Segregation



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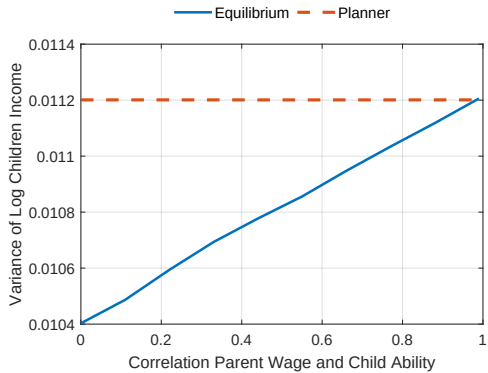
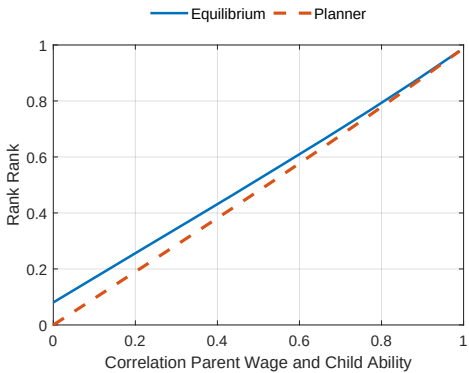


(b) Inequality

Varying correlation of ability and wage: Intergenerational Mobility



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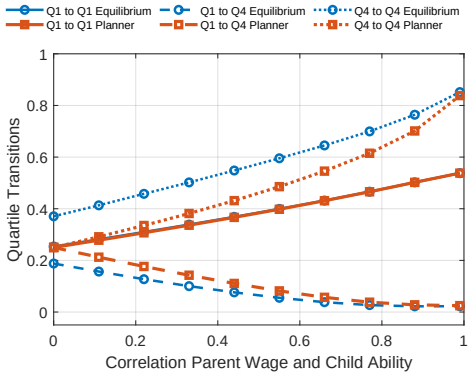


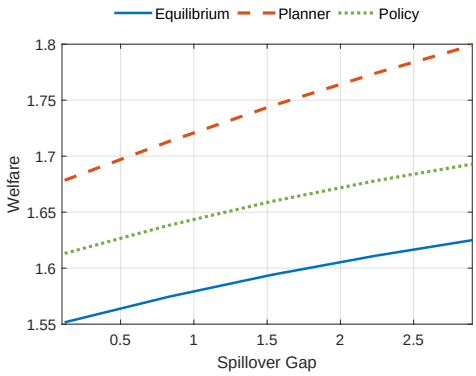
(b) Quartile Transitions

Policy

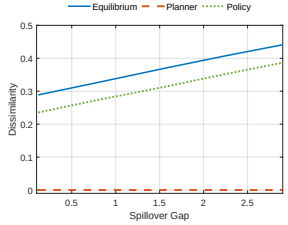
Transfer Policy

- What are the effects of a simple transfer policy: can it improve intergenerational mobility even if it is not linked to the geography of the city?
- consider a transfer equal to 20% of average wage given to all the parents in the lowest 25th percentile of the income distribution
- the policy is financed with a proportional income tax on everybody else

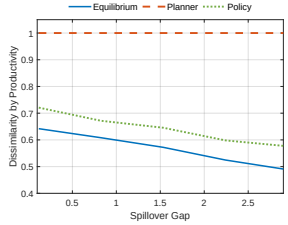
Transfer Policy:Welfare



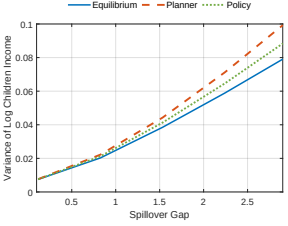
Transfer Policy: Inequality and Segregation



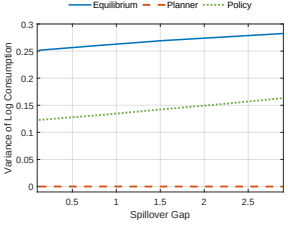
(a) Segregation by Income



(b) Segregation by Productivity

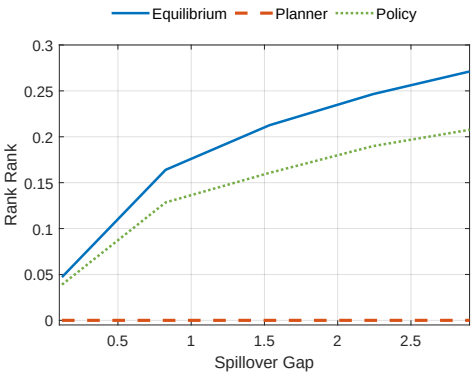


(c) Income Inequality



(d) Consumption Inequality

Transfer Policy: Intergenerational Mobility



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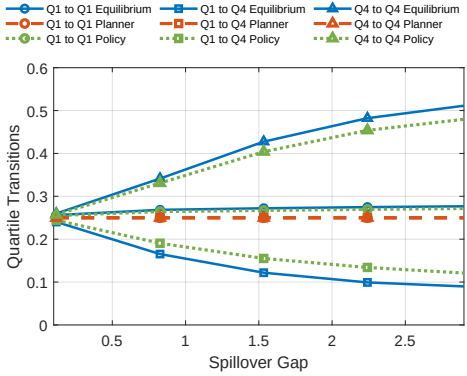


(b) Quartile Transitions

Dynamic Model with Endogenous Spillovers

Dynamic Setup

- overlapping generations: children at time t become parents at time $t+1$
- a parent at time t with wage and child's productivity (w, a) chooses consumption $c_t(w, a)$ and neighborhood $n_t(w, a)$ taking as given S_{At}, S_{Bt}, R_{At}
- wage at time $t+1$ of the child of a parent (w, a) at time t:

$$W_{t+1}(w, a) = \left(b + \eta a^{\alpha} S_{n_t(w,a)t}{}^{\beta}\right) w^{\gamma} \epsilon_t$$

- $F_t(w, a)$ = endogenous joint distribution of parents at time t ($F_0(w, a)$ given)
- R_{At} clears the housing market in neighborhood A with fixed supply H:

$$\int \int_{n_t(w,a)=A} dF_t(w, a) = H$$

Endogenous Spillover

- General formulation:

$$S_{kt} = f(\Phi_{kt})$$

where $\Phi_{kt}(w, a)$ = distribution of w and a in neighborhood k at time t

- Spillover stands for differences in public school quality, peer effects, social norms, learning from neighbors experience, networks, ...
- Today:

$$S_{kt} = \omega E_t[w_t|k] + (1 - \omega)E_t[a_t|k]$$

- One extreme: $\omega = 1$ (only local school financing)
- Other extreme: $\omega = 0$ (only peer effects)

Calibration Targets

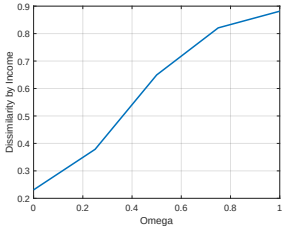
- Set $H = 0.2$ (20% of population lives in A)
- Rank census tracts by share of rich families (i.e. in the top 20th percentile)
- In each MSA, neighborhood A defined as top 20% of census tracts

Description	Data	Model	Source
Income Volatility	0.16	0.15	Census 1980
Dissimilarity Index by Income	0.29	0.30	Census 1980
Rank-Rank Correlation	0.34	0.36	Chetty et al. (2014)
Q1-to-Q1 Transition Pr	0.46	0.44	NLSY
$(R_A - R_B)$/Average Income	0.08	0.07	Census 1980
Share of Rich in A	0.43	0.45	Census 1980
Neighborhood Exposure 25th p	0.06	0.06	Chetty and Hendren (2018)
Neighborhood Exposure 75th p	0.05	0.05	Chetty and Hendren (2018)

Parameters

Parameter	Value	Description
α	0.69	Wage function parameter
β	1.20	Wage function parameter
γ	0.32	Wage function parameter
b	1.65	Wage function parameter
σ_ε	0.34	St. dev. of wage shock
σ_a	1.28	St. dev. of log ability
ρ	0.36	Autocorrelation of log ability
ω	0.13	Spillover function parameter

Varying ω: Inequality and Segregation



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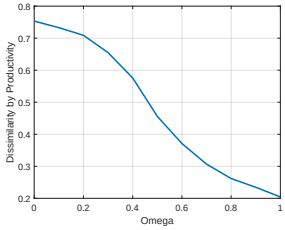
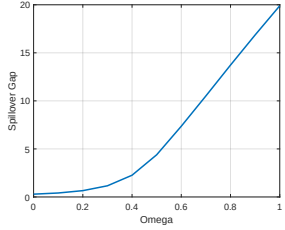
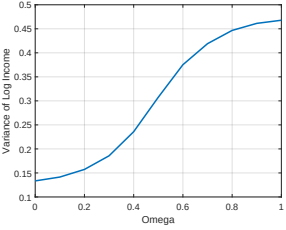


(b) Segregation by Productivity



(c) Spillover Gap

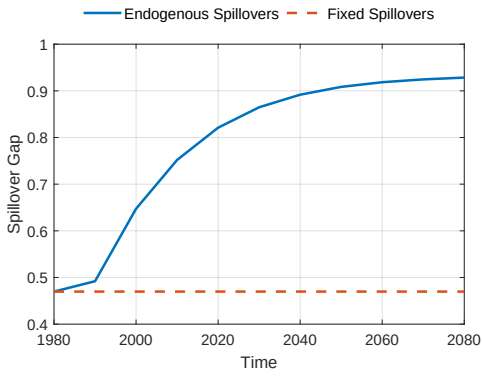


(d) Income Inequality

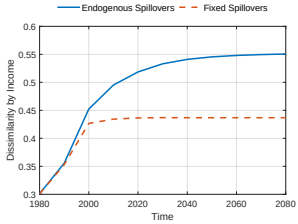
Skill Premium Shock

- starting from the steady state equilibrium and explore the response to an unexpected permanent increase in skill premium (η) for two cases:
  1. exogenous spillovers
  2. endogenous spillovers
- when η increases, children's wage higher especially for children with high a and in neighborhood A
- $\Rightarrow$ increase in demand to live in $A \Rightarrow$ increase in R_{At}
- selection: poorer parents cannot afford A anymore and children with higher a have higher return from growing up in A

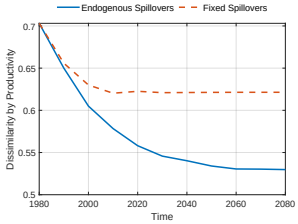
Skill Premium Shock: Spillover Gap



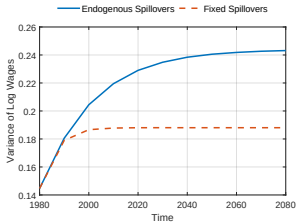
Skill Premium Shock: Inequality and Segregation



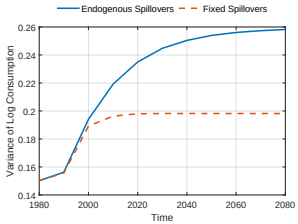
(a) Segregation by Income



(b) Segregation by Productivity

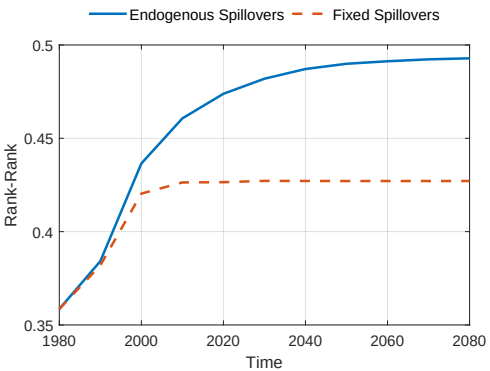


(c) Income Inequality

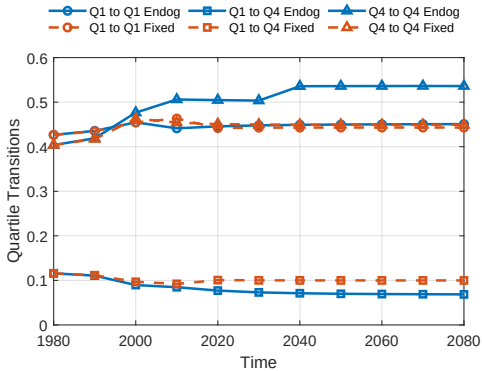


(d) Consumption Inequality

Skill Premium Shock: Intergenerational Mobility



(a) Rank Rank



(b) Quartile Transitions

Final Remarks

Conclusion

- local spillover generate a tight link among income inequality, residential segregation by income, and intergenerational mobility
- higher residential segregation associated to higher inequality and lower intergenerational mobility
- if the local spillover evolves endogenously with the residential composition of the neighborhoods, link is even tighter
- many possible applications of this framework
- explicit role for policy

Extensions and Applications

- Fogli, Guerrieri, Ponder, and Prato (forthcoming JPE 2026):
  3 neighborhoods, education choice, elastic housing supply, amenities and preference shocks
  - quantify role of segregation in the rise income inequality
- Fogli, Guerrieri, Ponder, and Prato (forthcoming NBER Macro Annual 2026): add government sector
  - welfare effects of neighborhood policies (transfers, vouchers, investment)
- Fogli, Garcia-Martinez, Guerrieri, and Prato: add racial segregation, information friction, and endogenous beliefs
  - role of segregation in persistent racial inequality

Key Takeaways: Neighborhood Policies

- MTO (Housing Vouchers):
  - Large income and welfare gains for recipient families
  - Scaling up reduces spillover in destination neighborhoods
  - Imposes welfare losses on non-recipients
- PBT (Place-Based Transfers):
  - Larger average city-wide welfare gains
  - But increases residential segregation
  - Poorer families relocate to targeted neighborhoods to receive the transfer
- PBI (Place-Based Investment):
  - Smallest short-run effects
  - Over time, generates the largest welfare gains
  - Simultaneously reduces inequality, lowers segregation, and improves intergenerational mobility

Some Literature

- literature on inequality and local externalities:
  - Benabou (1996a,1996b), Durlauf (1996a,1996b), Fernandez and Rogerson (1996,1998), Durlauf and Seshadri (2017), Fogli et al. (forthcoming)
- empirical work on neighborhood-specific policy:
  - MTO: Katz et al. (2001), Kling et al. (2007), Ludwig et al. (2013), Chetty et al. (2016)
- recent quantitative work on neighborhood-specific policies :
  - Davis et al. (2021), Zheng and Graham (2022), Agostinelli et al. (2024), Eckert and Kleineberg (2024), Bellue (2024), Chyn and Daruich (forthcoming)

Back

Data and Indexes

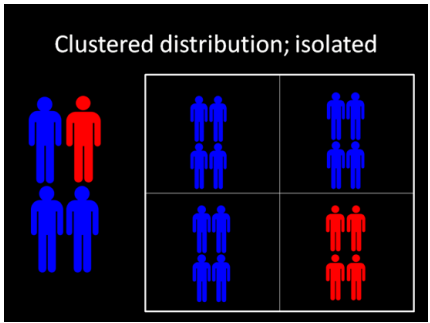
- data sources:
  - Census tract data 1980 - 2010
  - American Community Surveys 2008-2012
- geographic unit and sub-unit: metro and tracts (according to Census 2000)
- inequality measure = Gini coefficient
- segregation measure = dissimilarity index
  - it measures how uneven is the distribution of two mutually exclusive groups across geographic subunits
  - groups: rich and poor as above and below the 80th percentile

Dissimilarity Index

$$D(j) = \frac{1}{2} \sum_i \left| \frac{x_i(j)}{X(j)} - \frac{y_i(j)}{Y(j)} \right| \tag{1}$$

$x_i(j)$ and $y_i(j)$ = poor and rich in census tract i in metro j

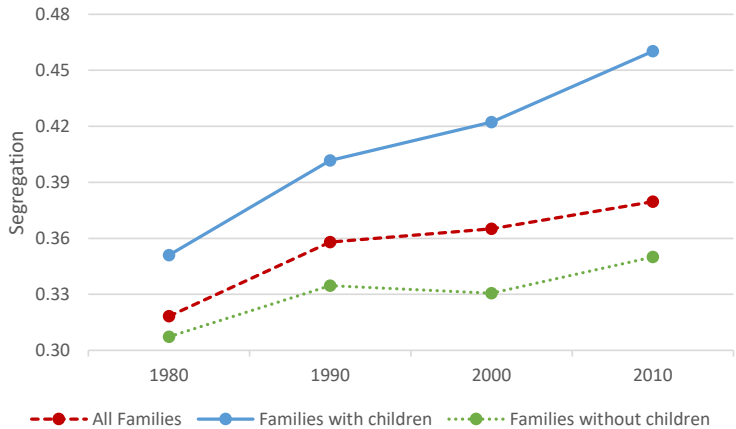
(c) No segregation



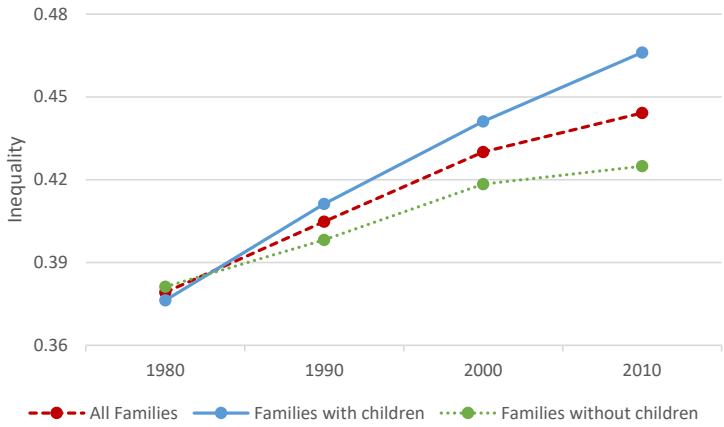
(d) Max segregation

Back

Segregation: Different Samples

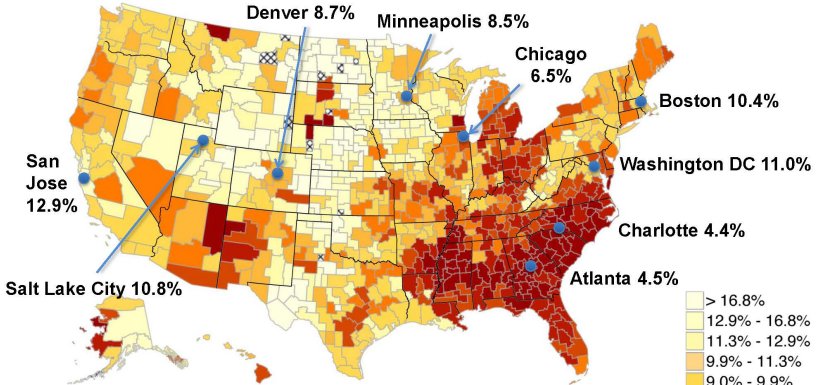


Inequality: Different Samples



The Geography of Upward Mobility in the United States

Chances of Reaching the Top Fifth Starting from the Bottom Fifth by Metro Area



Note: Lighter Color = More Upward Mobility
Download Statistics for Your Area at www.equality-of-opportunity.org

Causal Effects of Neighborhoods

Two very different explanations for variation in children's outcomes across areas:

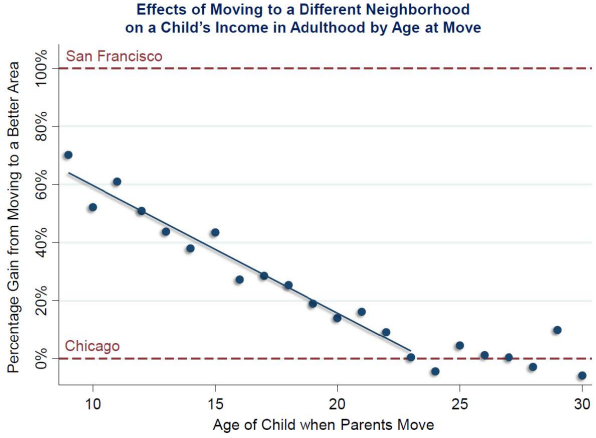
- Sorting: different people live in different places
- Causal: places have a causal effect on upward mobility for a given person
- Ideal experiment: randomly assign children to neighborhoods and compare outcomes in adulthood

Quasi-experimental Evidence

Chetty and Hendren (2028) approximate with quasi-experimental design:

- Study 3 million families who move across Census tracts in observational data
- Key idea: exploit variation in age of child when family moves to identify causal effects of environment
- Key assumption: timing of moves to a better/worse area unrelated to other determinants of child's outcomes
- Finding: about two-thirds of the variation in upward mobility across areas is due to causal effects

Income Gain from Moving to Better Neighborhood



▸ Identification Details