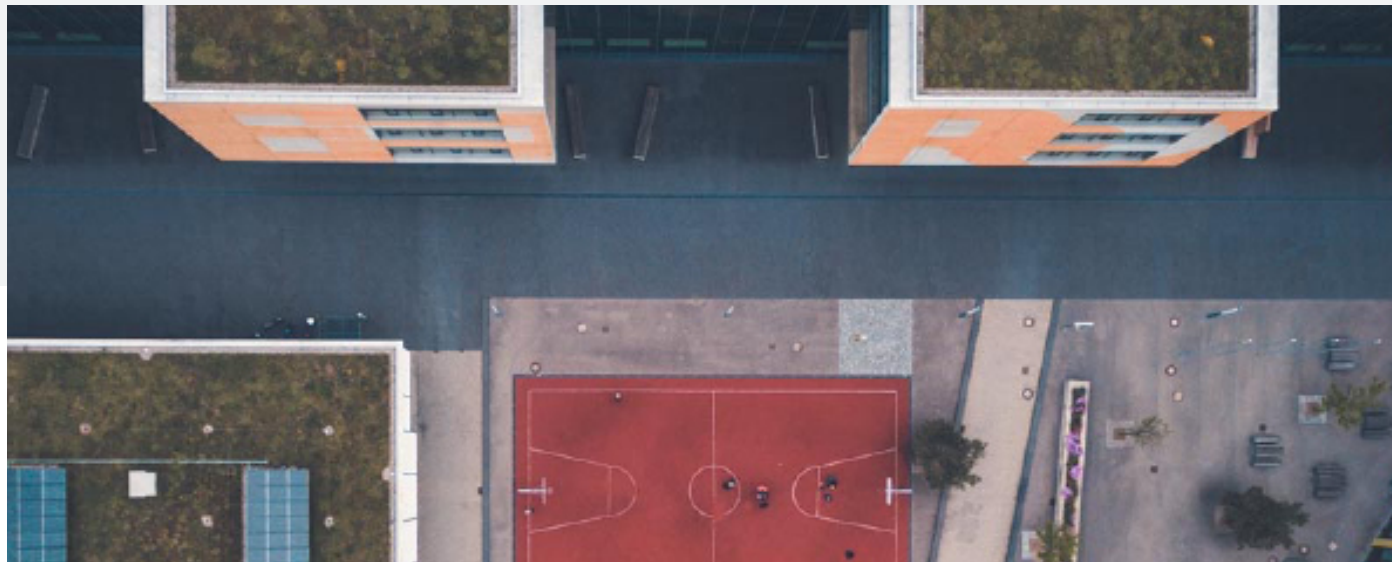


The Impacts of Neighborhoods on Intergenerational Mobility

Childhood Exposure Effects and County-Level Estimates

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To what extent are children's opportunities for upward economic mobility shaped by the neighborhoods in which they grow up?

We study this question using data from de-identified tax records on more than five million children whose families moved across counties between 1996 and 2012. The study yields the following set of results:

FINDING 1

The area in which a child grows up has significant causal effects on her prospects for upward mobility.

In order to measure the causal effect of a child's environment on their later outcomes, we use a quasi-experimental approximation that relies on differences in the timing of when families move across areas. Figure 1 illustrates our approach and results. As an example, consider a set of families who move from Cincinnati to Pittsburgh. Children who grow up in low-income families (at the 25th percentile of the national distribution) in Cincinnati from birth have an income of \$23,000 on average at age 26, while those in Pittsburgh have an income of \$28,000. Now consider the incomes of children whose families moved from Cincinnati to Pittsburgh at some point in their childhood. Figure 1 plots the fraction of the difference in income between Pittsburgh and Cincinnati that a child will on average

KEY FINDINGS

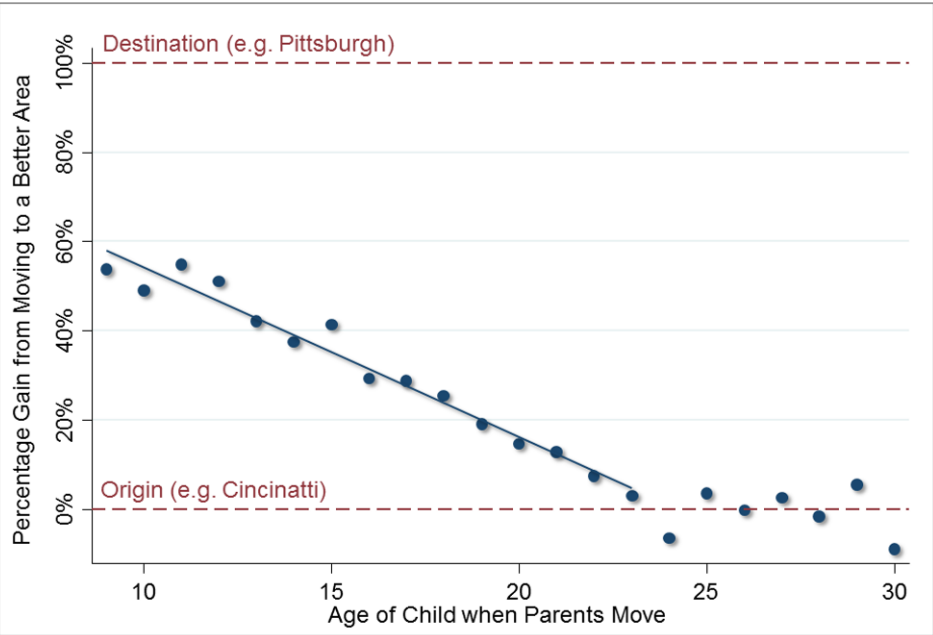
- The area in which a child grows up has significant causal effects on her prospects for upward mobility.
- There is considerable variation in upward mobility across counties in the United States, even within metro areas.
- Within a given commuting zone, counties that have higher rates of upward mobility tend to have five characteristics: they have less segregation by income and race, lower levels of income inequality, better schools, lower rates of violent crime, and a larger share of two-parent households.

obtain by moving at different ages during childhood. Children who were nine years old at the time of the move (the earliest age we can analyze given available data) capture 50% of this difference, leading to an income of approximately \$25,500 as adults. Children who move from Cincinnati to Pittsburgh at later ages have steadily declining incomes, relative to those who moved at younger ages. Those whose families moved after they were 23 experience no gain relative to those who stayed in Cincinnati permanently.

Figure 1 shows that every extra year a child spends in a better environment – as measured by the outcomes of children already living in that area – improves her outcomes, a pattern we term a childhood exposure effect. We find equal and opposite exposure

effects for children whose families moved to worse areas. Further, we find analogous exposure effects for a broad range of other outcomes, including college attendance and the probability of having a teenage birth.

FIGURE 1: Effects of Moving to a Different Neighborhood on a Child’s Income in Adulthood



Notes: This figure plots the percentage gain from moving to a better area by the age at which the child moves. For example, children who move at age 9 have outcomes that are about 50% between the outcomes of children who grow up permanently in the origin and destination areas.

This result has several important policy implications. First, it shows that the neighborhood environment during childhood is a key determinant of a child’s long-term success. This suggests that policy makers seeking to improve mobility should focus on improving childhood environments (e.g., by improving local schools) and not just on the strength of the local labor market or availability of jobs. Second, Figure 1 shows that the incremental benefits of exposure to a better area do not vary with a child’s age. Moving to a better area at age 9 instead of 10 produces the same incremental improvement in earnings as moving to that area at age 15 instead of 16. This finding is particularly important in light of recent discussions about early childhood interventions, as it shows that there are significant returns to improving children’s environments even at older ages.

FINDING 2

There is considerable variation in upward mobility across counties in the United States, even within metro areas. In the second part of our analysis, we estimate the causal childhood exposure effect of every county in the U.S. by studying the outcomes of children who moved between counties at different ages.

To understand how we estimate these effects, consider families in the New York metro area. If we were to find that children who moved from Manhattan to Queens at a young age do better as adults, we can infer that Queens has positive causal exposure effects relative to Manhattan. Building on this logic, we use data on movers across the full set of counties in the U.S. to estimate the effect of spending

an additional year of childhood in each county. We construct these estimates separately by parent income level, permitting the effects of each area to vary with the family’s income.

Table 1 shows the causal effects of the top 10 and bottom 10 counties among the 100 largest counties in the U.S for children growing up in families at the 25th percentile of the national income distribution. The estimates represent the percentage change in earnings from spending an additional year of one’s childhood in the relevant county relative to the national average.

For example, each additional year that a child spends growing up in DuPage County, IL raises her household income in adulthood by 0.76%. This implies that growing up in DuPage County from birth – i.e., having about 20 years of exposure to that environment – would raise a child’s earnings by 15% relative to the national average. In contrast, every extra year spent in the city of Baltimore reduces a child’s earnings by 0.86% per year of exposure, generating a total earnings penalty of approximately 17% for children who grow up there from birth.¹

There is considerable variation across counties even within metro areas. Figure 2 presents a map of the causal exposure effects for counties in the New York City area for children growing up in families at the 25th percentile. The estimates range from an earnings loss of -0.54% per year of childhood spent in Manhattan (New York County) to an earnings gain of 0.25% per year in Hudson County, NJ and 0.71% per year in Bergen County, NJ. Concretely, this implies that children in low-income families who move from Manhattan to Hudson County, NJ when they are born earn 16% more as adults on average.

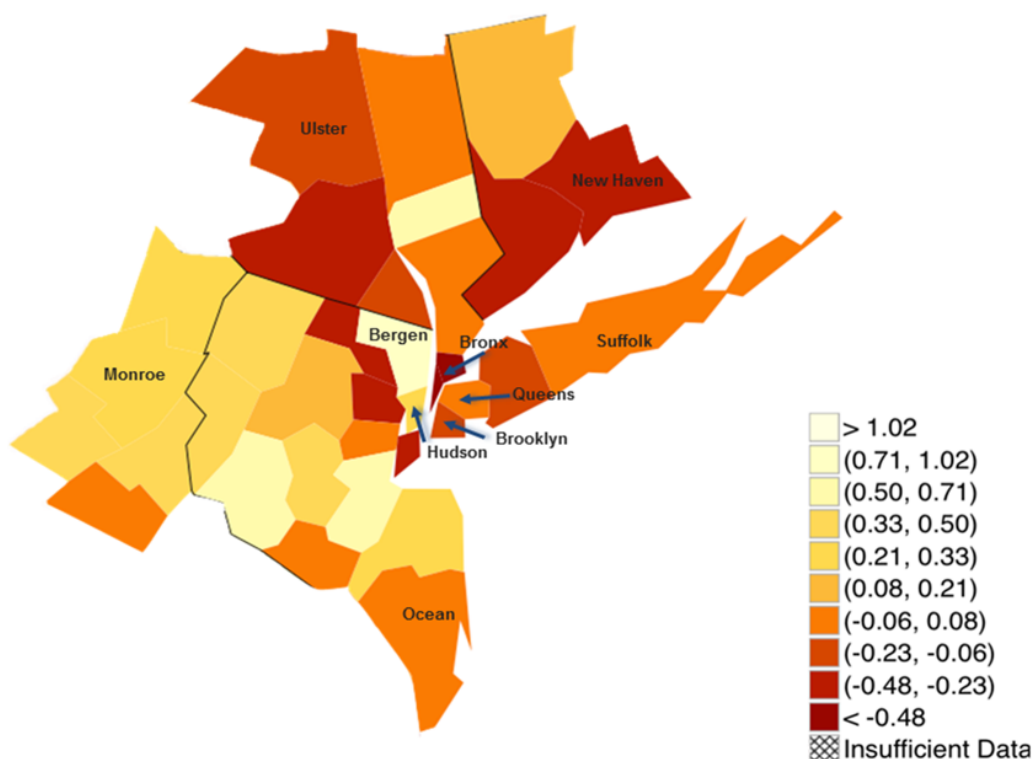
TABLE 1

Causal Exposure Effects: Top 10 and Bottom 10 Among the 100 Largest Counties
For Children with Parents at 25th Percentile of the Income Distribution

| Rank | | Earnings (%) per year of exposure | Rank | | Earnings (%) per year of exposure |
|------|------------------|--------------------------------------|------|--------------------|--------------------------------------|
| 1 | DuPage, IL | 0.76% | 91 | Pima, AZ | -0.61% |
| 2 | Snohomish, WA | 0.72% | 92 | Bronx, NY | -0.62% |
| 3 | Bergen, NJ | 0.71% | 93 | Milwaukee, WI | -0.62% |
| 4 | Bucks, PA | 0.66% | 94 | Wayne, MI | -0.63% |
| 5 | Contra Costa, CA | 0.61% | 95 | Fresno, CA | -0.65% |
| 6 | Fairfax, VA | 0.60% | 96 | Cook, IL | -0.67% |
| 7 | King, WA | 0.57% | 97 | Orange, FL | -0.67% |
| 8 | Norfolk, MA | 0.54% | 98 | Hillsborough, FL | -0.67% |
| 9 | Montgomery, MD | 0.52% | 99 | Mecklenburg, NC | -0.69% |
| 10 | Middlesex, NJ | 0.43% | 100 | Baltimore City, MD | -0.86% |

FIGURE 2: Causal Exposure Effects by County in the New York Combined Statistical Area

For Children with Parents at 25th Percentile of the Income Distribution



Notes: This figure shows the percentage change in household earnings caused by spending an additional year growing up in each county for children with parents at the 25th percentile of the national income distribution. Lighter colored areas are areas that generate larger earnings gains. To download statistics for your county, visit www.equality-of-opportunity.org

¹ These estimates are based on data for children born between 1980-86 and who grew up in the 1980's and 1990's. We find that neighborhoods' effects generally remain stable over time, but some cities have presumably gotten better in the 2000's, while others may have gotten worse.

² Most families at the 25th percentile of the national distribution (roughly a household income of \$30,000 for a family with teenage children) who live in Manhattan are in Harlem. Hence, the comparison is effectively between the effects of growing up in Harlem vs. an area with relatively low house prices in New Jersey.

The causal effects of counties are typically smaller in percentage terms for children who grow up in high-income families, but remain substantial. For instance, for children growing up in families in the top 1% of the income distribution, we estimate that every extra year of childhood spent in Manhattan reduces their earnings by 1.08% relative to Westchester. Areas that produce better outcomes for children in low-income families are, on average, no worse for those from high-income families. This finding suggests that the success of the poor need not come at the expense of the rich, implying that social mobility is not a “zero-sum game.”

Neighborhoods matter more for boys than girls. For example, every extra year of childhood exposure to Baltimore reduces earnings by 1.39% for low-income boys, but only 0.27% for girls. Areas with high crime rates and a large fraction of single parents generate particularly negative outcomes for boys relative to girls. There are also significant gender differences related to marriage rates. For example, Northern California generates high levels of individual earnings for girls, but produces lower levels of household income because fewer children get married in their 20s.

FINDING 2

Counties that have higher rates of upward mobility tend to have less segregation by income and race, lower levels of income inequality, better schools, lower rates of violent crime, and a larger share of two-parent households.

What are the properties of areas that improve upward mobility? Within a given commuting zone, we find that counties that have higher rates of upward mobility tend to have five characteristics: they have less segregation by income and race, lower levels of income inequality, better schools, lower rates of violent crime, and a larger share of two-parent households.

We also find that areas with a larger African-American population tend to have lower rates of upward mobility. These spatial differences amplify racial inequality across generations: we estimate that one-fourth of the gap in intergenerational mobility between blacks and whites can be attributed to the counties in which they live.

Lastly, we examine whether one has to pay a higher rent to live in an area with greater upward mobility. In the nation as a whole, we find

weak correlations between rents and upward mobility. However, in large metro areas – especially those with high levels of segregation and sprawl – counties that offer better prospects of upward mobility are much more expensive. For example, Chicago has one area with a high level of upward mobility – DuPage County – which is also one of the most expensive counties in the area. There are, however, some “bargains” even in the largest cities: for example, Hudson County in the New York metro area and Snohomish County in the Seattle area both offer high levels of upward mobility with relatively low house prices.

The high housing prices that families often must pay to achieve better outcomes for their children may partially explain the persistence of poverty in large American cities. One approach to addressing this problem is to provide subsidized housing vouchers that enable families to move to better (e.g., lower-poverty) neighborhoods. In a companion paper (Chetty, Hendren, and Katz 2015), we show that the Moving to Opportunity experiment – which randomly assigned families subsidized housing vouchers to move to low poverty areas – significantly improved long-term outcomes for children who moved at young ages, providing direct support for such policies.

Of course, given limits to the scalability of policies that seek to move families, one must also find methods of improving neighborhood environments in areas that currently generate low levels of mobility. Our study does not directly identify which policies are most successful in achieving this goal, but our findings provide support for policies that reduce segregation and concentrated poverty in cities (e.g., affordable housing subsidies or changes in zoning laws) as well as efforts to improve public schools.

The broader lesson of our analysis is that social mobility should be tackled at a local level by improving childhood environments.

Much remains to be learned about the best ways to make such improvements. We hope the county-level data constructed here will ultimately offer new solutions to increase opportunities for disadvantaged youth throughout the United States.



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