EXECUTIVE SUMMARY

THE MOVING TO OPPORTUNITY FOR FAIR HOUSING DEMONSTRATION PROGRAM FINAL IMPACTS EVALUATION

This report presents the long-term impacts of a unique housing mobility demonstration, Moving to Opportunity (MTO), on housing and neighborhood conditions, physical and mental health, economic self-sufficiency, risky and criminal behavior, and educational outcomes. The MTO demonstration was authorized by the U.S. Congress in section 152 of the Housing and Community Development Act of 1992. In 1994, the U.S. Department of Housing and Urban Development (HUD) launched MTO to test whether offering housing vouchers to families living in public housing projects in high-poverty neighborhoods of large inner cities could improve their lives and the lives of their children by allowing them to move to lower-poverty neighborhoods. The original authorizing legislation for MTO charged HUD with describing "the long-term housing, employment, and educational achievements of the families assisted under the demonstration program." This report discharges that responsibility.

Thanks to the generous support of other federal government agencies and private foundations, the scope of our long-term study of MTO families was expanded to include a number of outcome domains beyond those under HUD's charge, most notably physical and mental health. The additional funders that enabled this important expansion to the study's scope included the National Science Foundation, the National Institute for Child Health and Human Development, the Centers for Disease Control, the National Institute of Mental Health, the National Institute for Aging, the National Opinion Research Center's Population Research Center (supported by the National Institute of Child Health and Human Development), University of Chicago's Center for Health Administration Studies, the U.S. Department of Education's Institute of Education Sciences, the John D. and Catherine T. MacArthur Foundation, the Smith Richardson Foundation, the Spencer Foundation, the Bill & Melinda Gates Foundation, the Russell Sage Foundation, and the Annie E. Casey Foundation.

The results show that MTO moves led to sustained improvements in housing quality and in many aspects of the neighborhood's environment, including neighborhood socioeconomic composition and safety. These MTO-induced changes translate into a number of important improvements in mental and physical health for adults, including lower rates of extreme obesity, diabetes, psychological distress, and major depression. MTO had no detectable impacts on work, earnings, or other economic outcomes for adults. For youth, we see some signs of the same gender difference in responses to MTO as were found in the interim study, which reported on outcomes measured four to seven years after random assignment. One outcome for which we see some hints of beneficial MTO impacts on male youth is a reduction in illegal drug selling.

THE CONTRIBUTIONS OF THE MTO DEMONSTRATION

There is a long-standing belief that living in a less economically and socially distressed neighborhood can improve people's well-being and long-term life chances, owing to some combination of better housing conditions, lower crime, less stress, greater job opportunities, more supportive schools, and role models who are more affirming of pro-social behaviors. However, empirically isolating the effect of neighborhoods on people's outcomes from other possible influences has been difficult.

MTO overcomes some of the empirical challenges of identifying neighborhood effects on people's life outcomes because it was implemented as an experiment. Akin to drug trials in medicine, families at the beginning of the experiment were randomly assigned to a control group or one of two treatment groups. An MTO-type experiment enables

us to determine whether moving to a lower-poverty neighborhood itself, rather than some other characteristic of the individuals or families that might be related to both their propensity to move and their behavioral outcomes, directly *caused* improvements in health, economic security, or some other outcome of interest. Because of random assignment, the control group's experience shows, on average, what would have happened to the families in the treatment groups had they not been offered a voucher through MTO.

From 1994 to 1998, the MTO demonstration enrolled 4,604 low-income households in Baltimore, Boston, Chicago, Los Angeles, and New York. Eligibility for MTO was limited to households with children in public or other government-subsidized, project-based housing in selected high-poverty areas. Enrolled families were assigned at random to one of three groups:

1. The ***experimental group*** received Section 8 rental assistance certificates or vouchers that they could use only in census tracts with 1990 poverty rates below 10 percent. The families received mobility counseling and help in leasing a new unit. Forty-eight percent of families assigned to this group moved to a lower-poverty neighborhood with an MTO voucher. One year after relocating, families could use their voucher to move again if they wished, without any special constraints on location.
2. The ***Section 8 only group*** received regular Section 8 certificates or vouchers that they could use anywhere; these families received no special mobility counseling. Sixty-three percent moved using a voucher obtained through MTO.
3. The ***control group*** received no certificates or vouchers through MTO, but continued to be eligible for project-based housing assistance and whatever other social programs and services to which they would otherwise be entitled.

The MTO program population was very economically disadvantaged at baseline. Almost all the households that signed up for MTO were headed by women. Nearly two-thirds were African-American, and most of the remaining one-third were Hispanic. Three-quarters of household heads were on welfare, and fewer than 40 percent had graduated from high school. Most families had two or three children. In more than 40 percent of enrolled households, a household member had been victimized by a crime during the previous six months.

Not all families offered a housing voucher through MTO actually used it to move to a different neighborhood. Those who did move with an MTO housing voucher (that is, those who "complied" with their MTO treatment assignment) were on average relatively younger, more dissatisfied with their original neighborhoods, and had fewer children than those who did not use the voucher.

Accordingly, a useful starting point for our analysis is to compare the average outcomes of all families assigned to the experimental group, regardless of whether they relocated with an MTO voucher, with the average outcomes of those assigned to the control group. The same comparison was calculated for the Section 8 and control groups. These differences are called "intention to treat" (ITT) effects. They capture the effect of offering a family the chance to move with an MTO voucher as part of the experimental or Section 8 group. Our design also enables us to estimate treatment/control group differences for the subset of families who actually moved with an MTO voucher. These are known as the effects of "treatment on the treated" (or TOT).

MTO is thus the first random-assignment social science experiment designed to identify the causal effects of moving from high-poverty to lower-poverty neighborhoods on the social, economic and educational prospects, risky and criminal behavior, health, and well-being of low-income families. Other unique characteristics of the demonstration project include:

- A large study sample.
- Multiple program sites drawn from different regions across the United States.
- Long-term survey and administrative data follow-up of program participants.
- Exhaustive tracking of program participants over time and several sophisticated survey follow-ups of participants that produced high response rates.

- Direct measurement of key physical health outcomes such as height, weight, blood pressure, and biomarkers based on blood samples.
- Multiple administrative data sources for independent measurements that complement information from the surveys.
- Examination of a large set of outcome domains.

INTERIM FINDINGS: FOUR TO SEVEN YEARS AFTER BASELINE

An interim multisite evaluation of MTO's effects was conducted four to seven years after families entered the program. At that point, families who had moved to lower-poverty neighborhoods were doing significantly better than those in the control group in some important respects. On many other dimensions, however, the different groups had virtually identical outcomes, on average. Since previous theoretical work and observational studies had led to expectations of large neighborhood effects, this overall pattern of interim results was disappointing for many in the research and policy communities.

Adults assigned to either the experimental or Section 8 groups were safer and more satisfied with their housing and neighborhoods compared with adults in the control group, and were also less likely to report a household member being a victim of a crime or seeing illicit drugs sold. Compared with the control group, adults in the experimental group had better mental health and some better physical health outcomes and behaviors, such as lower rates of obesity together with some signs of improved diet and exercise. However, the MTO "treatment" led neither to better labor market outcomes nor reductions in social program participation.

MTO's impacts on children in participating families differed by gender, with generally beneficial effects for female youth and, on balance, some deleterious effects for male youth. Female youth in the experimental group had better mental health outcomes than their control group counterparts, whereas male youth in the experimental group were more likely to engage in risky behavior than control group males. Moving also reduced violent behavior for both male and female youth, as measured by arrests for violent crime. MTO had few detectable effects on child physical health or risky behaviors aside from an increase in nonsports injuries for male youth. MTO also had no detectable impacts on educational achievement as measured by standardized test scores.[1]

LONG-TERM FINDINGS: 10 TO 15 YEARS AFTER BASELINE

The final evaluation, which is the topic of the present report, is an opportunity to answer questions about the longer-term effects of housing mobility on poor families, measured 10 to 15 years after families enrolled in the program. The study's populations of interest were all members of the 4,604 households at the beginning of the program. Subsets include:

- 4,604 adults who were heads of those households at the beginning of the program
- 6,308 youth who were ages 10–20 as of December 31, 2007[2]
- 4,643 grown children (ages 20–30 at the end of 2007).

Executive Summary (ES) Exhibit 1 shows how these groups of adults and youth are distributed across demonstration sites and groups. It also shows the fraction of adults and youth assigned to the experimental and Section 8 groups who moved with an MTO housing voucher, that is, the "compliance rate."

To learn more about the outcomes of this study, we draw on survey interviews with 3,273 of the adult household heads as well as 5,105 youth who were age 10–20 at the end of 2007. The effective response rate for the long-term follow-up survey was 90 percent for the adult household heads and 89 percent for youth selected for the survey. These response rates were generally similar across randomly assigned MTO mobility groups, with the exception of a slightly lower response rate for adults in the Section 8 group (around 87 percent). We also

1 These are the overall results covering all five MTO sites. There were some detected improvements in individual sites. Youth saw some gains in test scores in Baltimore and Chicago, for example.

2 This group only partially overlaps with the set of youth who were ages 8–20 at the end of 2001 and interviewed as part of the interim survey.

relied on a variety of government administrative data sources. This report examines the impact of moving to lower-poverty neighborhoods on residential mobility, housing conditions, neighborhood conditions, and social networks of participating families. It also reports on physical health, mental health, economic self-sufficiency, risky and criminal behavior, and educational outcomes. These findings are outlined by topic below.

MOBILITY, HOUSING, NEIGHBORHOOD CONDITIONS, AND SOCIAL NETWORKS

MTO had sizable positive impacts on housing and neighborhood conditions and the social networks with which participating families interacted. As Exhibit ES-2 and 3 show, the experimental and Section 8 groups were more likely than the control group to:

- Live in lower-poverty neighborhoods
- Live in higher-quality homes
- Reside in slightly less racially segregated neighborhoods (although most families even in the experimental and Section 8 groups were still in majority-minority neighborhoods)
- Have more social ties with relatively more affluent people
- Feel safer in their neighborhoods.

MTO enabled many families to move to lower-poverty neighborhoods. In the census tracts in which MTO participants lived at baseline, some 53 percent of tract residents had family incomes below the poverty line. Experimental and Section 8 families who moved with an MTO voucher (the "compliers") lived in neighborhoods with mean tract poverty rates of 11 and 29 percent, respectively, immediately after their initial program moves (see Executive Summary Exhibit 2). Over time, though, the differences between the treatment and control groups narrowed, in large part because some control group families moved on their own to better neighborhoods and treatment group families moved on to neighborhoods with somewhat higher poverty rates. When averaged over the entire 10 to 15-year study period, the control group's neighborhood poverty rates were roughly 40 percent (see Executive Summary Exhibit 2). The average neighborhood poverty rates for all families assigned to the experimental and Section 8 groups were 9 and 7 percentage points lower than this, respectively. (This intention to treat effect is labeled "ITT" in the exhibits). For those families in the experimental and Section 8 groups that moved through MTO, average neighborhood poverty rates were about 18 and 11 percentage points lower, respectively.[3] (This "treatment on the treated" effect is labeled "TOT" in the exhibits.) Median household income was almost $19,000 higher in the census tracts where experimental group movers lived. MTO moves also made participants feel safer in their new neighborhoods, although this was less clearly evident for male youth in the program.

MTO moves only modestly reduced neighborhood racial segregation. For control group members, 88 percent of their neighbors were members of racial and ethnic minority groups. Families in the experimental group saw a decline of nearly 6 percentage points in the share minority, while the decline was smaller for those in the Section 8 group. Families in both treatment groups, even those who moved with an MTO voucher, were still living in census tracts that were three-quarters minority.

MTO also changed the social environments of the neighborhoods in which families were living. MTO helped families move into neighborhoods where neighbors were more willing to work together to support shared norms, a measure of informal social control that previous research suggests may be particularly important in improving the lives of neighborhood residents. MTO increased social connections of adults to other people who were employed full-time or had completed college. MTO moves did not appear to increase social isolation.

A majority of families in all three groups were still receiving some form of housing assistance, with slightly higher rates of assistance among the Section 8 group. However, fewer in the experimental and Section 8 groups than in the control group were living in public housing, and relatively more were instead using vouchers. Given that most families were still receiving some form of housing assistance, it is perhaps not surprising that MTO had only modest effects on out-of-pocket expenditures

3 This is the duration-weighted poverty rate; that is, the poverty rate for each of a family's addresses weighted by the amount of time the family lived in a particular census tract.

on housing. Compared with the control group adults, those in the experimental group were less likely to report being late with their rent or mortgage payments, but were more likely to have had trouble paying their utility bills on time.

Finally, MTO improved the quality of housing in which families were living. Adults in the experimental group were about 5 percentage points more likely than control group adults to report that their current housing conditions were excellent or good.

ADULT AND YOUTH PHYSICAL HEALTH

Living in disadvantaged neighborhoods has been hypothesized to worsen physical health. Previous research has found strong correlations between living in poor neighborhoods and prevalence rates of mortality, heart disease, obesity, depression, and substance abuse, even after controlling for observable individual-level health risk factors. These previous findings suggest that moving to a less disadvantaged neighborhood could conceivably improve health, and indeed there is some indication that this is the case for MTO participants on several important health outcomes.

As Exhibit ES-4 shows, a little more than one-half of the adults across all groups, including the control group, rated their health as good or excellent. Evidence from self-reports, physical biomarkers, and blood samples indicate that at the time of the long-term follow-up, compared with the control group, adults in the experimental and Section 8 group have:

- a lower prevalence of extreme obesity
- a lower prevalence of diabetes
- fewer self-reported physical limitations
- similar self-reported health status, as well as similar rates of hypertension and health-related risk behaviors.

Although there were no significant differences across groups in obesity (as measured by body mass index (BMI) of greater than or equal 30, where BMI is defined as weight in kilograms divided by height in meters squared (kg/m^2)), the share of adults with BMI of 35 kg/m^2 or greater was approximately 5 percentage points lower among those in the experimental group. The share of experimental group adults whose BMI was 40 kg/m^2 or greater, a commonly used definition of extreme obesity, was about 3 percentage points lower than those in the control group. There were no significant differences between the Section 8 and control groups in the prevalence of extreme obesity. Diabetes was 3 to 6 percentage points less prevalent for those in the two MTO treatment groups than in the control group as measured from blood samples. The effect is somewhat smaller for the experimental group if we use respondent self-reports about whether their doctors had told them they had diabetes. An advantage of the blood-based biomarkers over self-reports of diabetes is that they are free from the underreporting caused by respondents being unaware they have the condition.

Adult health outcomes, such as self-rated overall health, asthma, hypertension, chronic pain, and substance use, were largely unaffected by moving to lower-poverty neighborhoods. Among youth, moving to a lower-poverty neighborhood had little to no measured effect on the health outcomes measured (see Exhibit ES-5).

ADULT AND YOUTH MENTAL HEALTH

As with physical health, living in disadvantaged neighborhoods has long been thought to increase the risk for mental health problems. Research has documented large correlations between rates of neighborhood poverty or crime and depression, anxiety, and other mental health problems. Exposure to violence, for example, is associated with long-term behavioral and psychological harm for both youth and adults. Males, who are more often exposed to violence than females, may be particularly vulnerable.

Data from a battery of psychological measures show that, compared with the control group, adults in the experimental or Section 8 group have:

- lower levels of psychological distress
- lower prevalence of depression
- lower prevalence of anxiety
- similar rates of most other mental health problems.

As Exhibit ES-6 shows, MTO lowered the prevalence of depression among adults in both the experimental and Section 8 group by 3 and 5 percentage points, respectively (although the experimental group impact is just marginally significant). MTO did not have statistically significant effects on other mental health measures, such as levels of mental calm, normal sleep patterns, having any mood disorder, panic attacks, post-traumatic stress, or intermittent explosive disorder. However, MTO's impacts on almost all of these measures were in the direction of improved mental health for movers relative to controls. One exception is that moves to lower-poverty neighborhoods seemed to slightly increase drug or alcohol abuse or dependence among adults in the experimental group compared with the control group.

Exhibit ES-7 shows selected mental health outcomes for male and female youth. For female youth ages 10–20, moving to lower-poverty neighborhoods had an overall positive effect on their mental health. More specifically, as shown in the table and in Chapter 4, relative to female youth in the control group, females in the experimental group have:

- a lower prevalence of any lifetime mood disorder
- fewer serious emotional or behavioral difficulties
- fewer panic attacks in the past year
- less psychological distress
- lower prevalence of oppositional defiant disorder in the past year
- similar rates of other mental health problems.

For male youth ages 10–20, however, moving to lower-poverty neighborhoods may have increased lifetime post-traumatic stress disorder; prevalence of this disorder among male youth in the Section 8 group were about 3 percentage points higher than in the control group. Although not reaching statistical significance, many of the other mental health indicators had worsened for male youth after moving.

EXHIBIT ES–1. ALLOCATION AND COMPLIANCE OF THE LONG-TERM EVALUATION SAMPLES BY SITE AND TREATMENT GROUP

	ALL GROUPS	CONTROL GROUP	EXPERIMENTAL GROUP		SECTION 8 GROUP	
	N	N	N	COMPLIANCE RATE (%)	N	COMPLIANCE RATE (%)
ADULTS						
Baltimore	572	197	252	53.5	123	79.8
Boston	868	326	366	43.6	176	51.1
Chicago	825	232	460	33.4	133	67.4
Los Angeles	929	389	340	60.5	200	71.6
New York City	948	295	401	46.4	252	45.2
All sites	4,142	1,439	1,819	47.4	884	61.6
YOUTH, AGES 10–20						
Baltimore	762	240	268	59.1	254	79.2
Boston	1,267	440	475	38.2	352	54.6
Chicago	1,363	328	701	31.7	334	72.0
Los Angeles	1,539	592	502	62.2	445	78.2
New York City	1,377	418	471	49.6	488	49.2
All sites	6,308	2,018	2,417	47.6	1,873	66.4

Notes: Percentages are weighted to reflect the randomization ratios and sampling of Section 8 adults and up to three youth per family. "Compliance" is defined as leasing a unit using a housing voucher provided by the Moving To Opportunity (MTO) program.
Data source and sample: MTO data system. The samples are N = 4,142 adults and N = 6,308 youth ages 10 to 20 as of December 2007 selected for the long-term survey. Excluded from the samples are the N = 462 Section 8 group adults and youth from households with greater than three youth ages 10–20 who were not randomly selected for the long-term survey.

EXHIBIT ES–2. NEIGHBORHOOD POVERTY RATES OF ADULTS AT DIFFERENT POINTS IN TIME							
	CONTROL GROUP	EXPERIMENTAL GROUP			SECTION 8 GROUP		
	ALL	ALL	COMPLIERS	NON-COMPLIERS	ALL	COMPLIERS	NON-COMPLIERS
SHARE POOR IN CENSUS TRACT OF RESIDENCE FOR MTO FAMILIES BY TIME SINCE RANDOM ASSIGNMENT							
Baseline address	0.531	0.527	0.530	0.524	0.526	0.540	0.505
Initial MTO-assisted move address			0.107			0.287	
Address at time of MTO interim evaluation (4–7 years after baseline)	0.395	0.299	0.193	0.402	0.326	0.286	0.391
Address at time of MTO long-term evaluation (10–15 years after baseline)	0.313	0.274	0.210	0.334	0.283	0.244	0.345
Average (duration-weighted) of all addresses since Random Assignment	0.396	0.306	0.200	0.407	0.329	0.285	0.400

Notes: Characteristics for the census tracts of addresses at which Moving To Opportunity (MTO) families were living at different points in time were linearly interpolated from the 1990 and 2000 decennial Censuses as well as the 2005–09 American Community Survey. Addresses at the time of the interim and long-term evaluations are as of the beginning of the fielding period for each study (December 31, 2001, for the interim evaluation and May 31, 2008, for the long-term evaluation).
Sample: Adults interviewed as part of the long-term evaluation (N = 3,273).

EXHIBIT ES–3. KEY HOUSING, NEIGHBORHOOD, AND SOCIAL NETWORK OUTCOMES, LONG-TERM EVALUATION						
	CONTROL MEAN	EXPERIMENTAL VERSUS CONTROL		SECTION 8 VERSUS CONTROL		
OUTCOME		ITT	TOT	ITT	TOT	*N*
ADULT						
HOUSING						
Rates current housing as excellent or good [SR]	0.570	0.053* (0.021)	0.109* (0.044)	0.031 (0.029)	0.050 (0.046)	3,267
Currently receiving any housing assistance [SR, HA]	0.620	0.026 (0.021)	0.054 (0.043)	0.045~ (0.027)	0.072~ (0.044)	3,273
Total housing cost (2009 dollars), monthly [SR]	$678.73	19.50 (23.30)	39.67 (47.39)	– 6.26 (30.73)	– 10.00 (49.10)	3,180
NEIGHBORHOOD						
Median household income (2009 dollars) [CEN]	$27,808.85	9,148.91* (544.97)	18,848.48* (1,122.75)	5,600.18* (660.90)	9,027.10* (1,065.32)	3,270
Average (duration-weighted) census tract share persons who are poor [CEN]	0.396	– 0.089* (0.006)	– 0.184* (0.012)	– 0.069* (0.007)	– 0.111* (0.011)	3,270
Average (duration-weighted) census tract share minority [CEN]	0.880	– 0.061* (0.007)	– 0.125* (0.014)	– 0.018* (0.009)	– 0.029* (0.015)	3,270
Feels safe during the day [SR]	0.804	0.036* (0.016)	0.074* (0.034)	0.045* (0.021)	0.072* (0.034)	3,262
Feels safe at night [SR]	0.596	0.043* (0.021)	0.088* (0.043)	0.073* (0.027)	0.117* (0.043)	3,246
SOCIAL NETWORK						
Has at least one close friend who graduated from college [SR]	0.532	0.071* (0.021)	0.145* (0.044)	0.007 (0.029)	0.010 (0.046)	3,203
Has three or more close friends [SR]	0.432	0.006 (0.021)	0.013 (0.044)	– 0.026 (0.028)	– 0.042 (0.045)	3,265

EXHIBIT ES–3. (CONTINUED)

	CONTROL MEAN	EXPERIMENTAL VERSUS CONTROL		SECTION 8 VERSUS CONTROL		
OUTCOME		ITT	TOT	ITT	TOT	*N*
YOUTH AGES 10–20						
NEIGHBORHOOD						
FEELS SAFE DURING THE DAY [SR]						
All	0.801	0.018	0.037	– 0.012	– 0.018	4,863
		(0.016)	(0.033)	(0.018)	(0.026)	
Female	0.784	0.045*	0.090*	0.019	0.030	2,478
		(0.022)	(0.045)	(0.025)	(0.039)	
Male	0.817	– 0.009	– 0.019	– 0.043~	– 0.062~	2,385
		(0.022)	(0.047)	(0.025)	(0.035)	
FEELS SAFE AT NIGHT [SR]						
All	0.540	0.035~	0.074~	0.019	0.028	4,862
		(0.021)	(0.043)	(0.022)	(0.033)	
Female	0.486	0.052~	0.104~	0.067*	0.105*	2,478
		(0.028)	(0.056)	(0.030)	(0.048)	
Male	0.591	0.020	0.043	– 0.030	– 0.043	2,384
		(0.028)	(0.060)	(0.031)	(0.043)	

Notes: * = p < 0.05, ~ = p < 0.10 on two-tailed t-test. Robust standard errors shown in parentheses. ITT = Intention-to-Treat or estimated impact of being offered a Moving To Opportunity (MTO) housing voucher; TOT = Treatment-on-the-Treated or estimated impact of moving using an MTO housing voucher. The control mean is unadjusted. Unless otherwise indicated, the control mean and impacts are expressed as "shares" of the sample in the category (for example, a control mean of "0.250" for "Working" would indicate that 25 percent of the control group was working).
Square brackets indicate the source of the outcome information: SR = self-report, CEN = 1990 and 2000 decennial census data as well as the 2005–09 ACS.
Model: Experimental and Section 8 impacts were estimated jointly using an Ordinary Least Squares (OLS) regression model controlling for baseline covariates, weighted, and clustering on family. Outcomes from the adult survey also control for field release. Youth and grown children impacts by gender were estimated as an interaction with treatment status. See Section 1.3 and the technical appendices (forthcoming) for details.
Data source and sample: Adult long-term survey. All adults interviewed; Youth long-term survey. Interviewed youth ages 10 to 20 as of December 31, 2007.
Measures: Baseline census tract is based on participant's address at baseline. Interpolated census tract characteristics are linearly interpolated from the 1990 and 2000 decennial census. American Community Survey (ACS) refers to the 2005–09 5-year average ACS data.

EXHIBIT ES–4. KEY ADULT PHYSICAL HEALTH OUTCOMES, LONG-TERM EVALUATION						
	CONTROL MEAN	EXPERIMENTAL VERSUS CONTROL		SECTION 8 VERSUS CONTROL		
OUTCOME		ITT	TOT	ITT	TOT	*N*
SELF-RATED HEALTH						
Currently good or better health [SR]	0.564	0.002	0.004	– 0.005	– 0.009	3,269
		(0.020)	(0.042)	(0.027)	(0.044)	
ASTHMA						
Asthma or wheezing attack during the past year [SR]	0.293	– 0.018	– 0.038	– 0.042	– 0.066	3,267
		(0.020)	(0.040)	(0.026)	(0.041)	
OBESITY						
Currently obese: Body Mass Index (BMI) ≥ 30 [M, SR]	0.584	– 0.012	– 0.025	– 0.011	– 0.018	3,221
		(0.022)	(0.044)	(0.029)	(0.046)	
BMI ≥ 35 [M, SR]	0.351	– 0.046*	– 0.095*	– 0.053*	– 0.086*	3,221
		(0.020)	(0.042)	(0.027)	(0.043)	
BMI ≥ 40 [M, SR]	0.175	– 0.034*	– 0.071*	– 0.029	– 0.048	3,221
		(0.016)	(0.032)	(0.021)	(0.034)	
DIABETES						
Had diabetes or treated for it during the past year [SR]	0.160	– 0.024	– 0.049	– 0.061*	– 0.098*	3,251
		(0.015)	(0.030)	(0.018)	(0.029)	
HbA1c test detected diabetes (HbA1c ≥ 6.5%) [DBS]	0.204	– 0.052*	– 0.108*	– 0.011	– 0.017	2,737
		(0.018)	(0.038)	(0.024)	(0.038)	
HbA1c test detected diabetes or had or treated for diabetes during the past year [DBS, SR]	0.234	– 0.034~	– 0.071~	– 0.008	– 0.013	2,732
		(0.019)	(0.040)	(0.025)	(0.039)	
LIMITATIONS AND CHRONIC PAIN						
Health limits respondent's ability to climb several flights of stairs/lifting or carrying groceries [SR]	0.510	– 0.048*	– 0.100*	– 0.023	– 0.038	3,270
		(0.021)	(0.043)	(0.028)	(0.045)	
HYPERTENSION						
Currently has high blood pressure (systolic ≥ 140 mm Hg or diastolic ≥ 90 mm Hg) [M]	0.315	0.007	0.015	– 0.026	– 0.041	3,102
		(0.020)	(0.042)	(0.027)	(0.043)	

Notes: * = $p < 0.05$, ~ = $p < 0.10$ on two-tailed t-test. Robust standard errors shown in parentheses. ITT = Intention-to-Treat or estimated impact of being offered a Moving To Opportunity (MTO) housing voucher; TOT = Treatment-on-the-Treated or estimated impact of moving using an MTO housing voucher. The control mean is unadjusted. Unless otherwise indicated, the control mean and impacts are expressed as "shares" of the sample in the category (for example, a control mean of "0.250" for "Working" would indicate that 25 percent of the control group was working).
Square brackets indicate the source of the outcome information: SR = self-report, M = direct measurement, DBS = dried blood spot assays.
Model: Experimental and Section 8 impacts were estimated jointly using an Ordinary Least Squares (OLS) regression model controlling for baseline covariates, weighted, and clustering on family. Outcomes from the adult survey also control for field release. Youth and grown children impacts by gender were estimated as an interaction with treatment status. See Section 1.3 and the technical appendices (forthcoming) for details.
Data source and sample: Adult long-term survey. All adults interviewed.
Measures: For obesity inputs (height and weight), only a very small percent of the sample self-reported their height or weight. Body Mass Index (BMI) is measured as weight in kilograms divided by height in meters squared. For diastolic and systolic blood pressure, data are the average of two readings, if available; otherwise, data are from one reading. HbA1c = glycosylated hemoglobin.

EXHIBIT ES–5. KEY PHYSICAL HEALTH OUTCOMES FOR YOUTH AGES 10–20, LONG-TERM EVALUATION						
	CONTROL MEAN	EXPERIMENTAL VERSUS CONTROL		SECTION 8 VERSUS CONTROL		
OUTCOME		ITT	TOT	ITT	TOT	*N*
GENERAL HEALTH						
CURRENTLY GOOD OR BETTER HEALTH [SR]						
All	0.883	0.005	0.009	0.000	– 0.001	5,100
		(0.013)	(0.027)	(0.015)	(0.022)	
Female	0.862	0.003	0.007	0.006	0.010	2,600
		(0.019)	(0.038)	(0.021)	(0.034)	
Male	0.903	0.006	0.012	– 0.007	– 0.010	2,500
		(0.016)	(0.035)	(0.019)	(0.027)	
ASTHMA						
ASTHMA OR WHEEZING ATTACK DURING THE PAST YEAR [SR]						
All	0.190	0.006	0.013	– 0.013	– 0.019	5,092
		(0.015)	(0.032)	(0.016)	(0.024)	
Female	0.206	– 0.009	– 0.017	– 0.021	– 0.032	2,595
		(0.021)	(0.043)	(0.023)	(0.037)	
Male	0.174	0.021	0.045	– 0.006	– 0.008	2,497
		(0.020)	(0.043)	(0.022)	(0.031)	
OBESITY						
CURRENTLY OBESE [M, SR]						
All	0.229	– 0.010	– 0.022	– 0.010	– 0.014	5,034
		(0.017)	(0.035)	(0.018)	(0.028)	
Female	0.274	– 0.028	– 0.057	– 0.020	– 0.031	2,560
		(0.025)	(0.051)	(0.026)	(0.041)	
Male	0.187	0.007	0.016	0.000	0.000	2,474
		(0.021)	(0.045)	(0.023)	(0.033)	
ACCIDENTS AND INJURIES						
HAD ACCIDENTS OR INJURIES REQUIRING MEDICAL ATTENTION IN THE PAST YEAR [SR]						
All	0.178	0.006	0.013	0.008	0.012	5,097
		(0.014)	(0.030)	(0.016)	(0.024)	
Female	0.164	– 0.023	– 0.046	– 0.024	– 0.037	2,597
		(0.018)	(0.037)	(0.020)	(0.031)	
Male	0.192	0.035	0.076	0.039	0.056	2,500
		(0.022)	(0.047)	(0.024)	(0.034)	

Notes: * = $p < 0.05$, ~ = $p < 0.10$ on two-tailed t-test. Robust standard errors shown in parentheses. ITT = Intention-to-Treat or estimated impact of being offered a Moving To Opportunity (MTO) housing voucher; TOT = Treatment-on-the-Treated or estimated impact of moving using an MTO housing voucher. The control mean is unadjusted. Unless otherwise indicated, the control mean and impacts are expressed as "shares" of the sample in the category (for example, a control mean of "0.250" for "Working" would indicate that 25 percent of the control group was working).
Square brackets indicate the source of the outcome information: SR = self-report, M = direct measurement.
Model: Experimental and Section 8 impacts were estimated jointly using an Ordinary Least Squares (OLS) regression model controlling for baseline covariates, weighted, and clustering on family. Outcomes from the adult survey also control for field release. Youth and grown children impacts by gender were estimated as an interaction with treatment status. See Section 1.3 and the technical appendices (forthcoming) for details.
Data source and sample: Youth long-term survey. Interviewed youth ages 10 to 20 as of December 31, 2007.
Measures: Obesity is defined according to the International Obesity Task Force.

EXHIBIT ES–6. KEY ADULT MENTAL HEALTH OUTCOMES, LONG-TERM EVALUATION

	CONTROL MEAN	EXPERIMENTAL VERSUS CONTROL		SECTION 8 VERSUS CONTROL		
OUTCOME		ITT	TOT	ITT	TOT	*N*
Psychological Distress Index (K6) Z-score, past month (higher score indicates greater distress) [SR]	0.000	– 0.107* (0.042)	– 0.221* (0.087)	– 0.097~ (0.056)	– 0.156~ (0.091)	3,273
Major Depression with Hierarchy, Lifetime [SR]	0.203	– 0.032~ (0.017)	– 0.066~ (0.035)	– 0.048* (0.021)	– 0.077* (0.034)	3,269
Any Mood Disorder, Lifetime [SR]	0.255	– 0.028 (0.018)	– 0.058 (0.038)	– 0.036 (0.024)	– 0.058 (0.039)	3,270
Generalized Anxiety Disorder with Hierarchy, Lifetime [SR]	0.065	– 0.003 (0.010)	– 0.005 (0.021)	– 0.020~ (0.011)	– 0.033~ (0.017)	3,273
Any Anxiety Disorder, Lifetime [SR]	0.308	– 0.020 (0.020)	– 0.042 (0.041)	– 0.005 (0.026)	– 0.008 (0.042)	3,269
Panic Attacks, Lifetime [SR]	0.407	0.004 (0.021)	0.009 (0.044)	– 0.022 (0.028)	– 0.035 (0.045)	3,269
Post-Traumatic Stress Disorder, Lifetime [SR]	0.219	– 0.012 (0.018)	– 0.024 (0.037)	0.004 (0.024)	0.006 (0.038)	3,269
Calm and peaceful most of the time, past month [SR]	0.487	0.018 (0.022)	0.037 (0.045)	– 0.025 (0.029)	– 0.040 (0.047)	3,272
Dependence on drugs or alcohol, past month [SR]	0.055	0.029* (0.011)	0.060* (0.022)	0.015 (0.015)	0.024 (0.023)	3,269

Notes: * = p < 0.05, ~ = p < 0.10 on two-tailed t-test. Robust standard errors shown in parentheses. ITT = Intention-to-Treat or estimated impact of being offered a Moving To Opportunity (MTO) housing voucher; TOT = Treatment-on-the-Treated or estimated impact of moving using an MTO housing voucher. The control mean is unadjusted. Unless otherwise indicated, the control mean and impacts are expressed as "shares" of the sample in the category (for example, a control mean of "0.250" for "Working" would indicate that 25 percent of the control group was working).
Square brackets indicate the source of the outcome information: SR = self-report.
Model: Experimental and Section 8 impacts were estimated jointly using an Ordinary Least Squares (OLS) regression model controlling for baseline covariates, weighted, and clustering on family. Outcomes from the adult survey also control for field release. Youth and grown children impacts by gender were estimated as an interaction with treatment status. See Section 1.3 and the technical appendices (forthcoming) for details.
Data source and sample: Adult long-term survey. All adults interviewed.
Measures: Psychological distress consists of 6 items (sadness, nervousness, restlessness, hopelessness, feeling that everything is an effort, worthlessness) scaled on a score from 0 (no distress) to 24 (highest distress) and then converted to z-scores using the mean and standard deviation of control group adults. Disorders with hierarchy take into account the comorbidity of other disorders: Depression with hierarchy takes into account Mania, and Hypomania; Generalized Anxiety Disorder (GAD) takes into account Depression and Mania; Intermittent Explosive Disorder (IED) takes into account Depression, Mania and Hypomania. Any Anxiety Disorder includes Panic Disorder, Generalized Anxiety Disorder (GAD) (without hierarchy), and Post-Traumatic Stress Disorder (PTSD). Any Mood Disorder includes Depression (without hierarchy), Bipolar I/II/Subthreshold, and Mania/Hypomania/Hypomania Subthreshold. Any Disorder includes all disorders from Any Anxiety Disorder and Any Mood Disorder as well as Intermittent Explosive Disorder (IED) (without hierarchy). Index of mental health problems is the average of depression (past year), anxiety (past year), mental calm, distress (K6) and normal sleep (7 to 8 hours last night) after standardizing by the control mean and standard deviation. Substance dependence consists of 5 items about drug and/or alcohol use (use out of control, anxiety or worry about missing fix or drink, worry about use, frequency of desire to end use, difficulty of going without use) scaled on a score from 0 (no dependence) to 15 (highest level of dependence). A score of 3 or higher indicates dependence. See Section 4.3 for additional details.

EXHIBIT ES–7. KEY MENTAL HEALTH OUTCOMES FOR YOUTH AGES 13–20, LONG-TERM EVALUATION						
	CONTROL MEAN	EXPERIMENTAL VERSUS CONTROL		SECTION 8 VERSUS CONTROL		
OUTCOME		ITT	TOT	ITT	TOT	*N*
PSYCHOLOGICAL DISTRESS INDEX (K6) Z-SCORE, PAST MONTH (HIGHER SCORE INDICATES GREATER DISTRESS) [SR]						
All	0.000	– 0.040	– 0.084	0.036	0.054	4,644
		(0.041)	(0.085)	(0.047)	(0.070)	
Female	0.115	– 0.119*	– 0.241*	– 0.013	– 0.021	2,371
		(0.058)	(0.116)	(0.066)	(0.104)	
Male	– 0.110	0.040	0.085	0.084	0.120	2,273
		(0.054)	(0.116)	(0.060)	(0.086)	
MAJOR DEPRESSION WITH HIERARCHY, LIFETIME [SR]						
All	0.105	– 0.015	– 0.031	– 0.014	– 0.021	4,639
		(0.012)	(0.025)	(0.013)	(0.019)	
Female	0.128	– 0.032~	– 0.065~	– 0.029	– 0.045	2,367
		(0.017)	(0.035)	(0.019)	(0.029)	
Male	0.084	0.003	0.006	0.000	0.000	2,272
		(0.016)	(0.034)	(0.017)	(0.025)	
ANY MOOD DISORDER, LIFETIME [SR]						
All	0.178	– 0.013	– 0.027	0.003	0.004	4,644
		(0.015)	(0.031)	(0.016)	(0.024)	
Female	0.218	– 0.048*	– 0.096*	– 0.032	– 0.050	2,371
		(0.022)	(0.044)	(0.024)	(0.038)	
Male	0.140	0.022	0.047	0.038~	0.054~	2,273
		(0.020)	(0.043)	(0.022)	(0.032)	
GENERALIZED ANXIETY DISORDER WITH HIERARCHY, LIFETIME [SR]						
All	0.019	– 0.002	– 0.004	0.010~	0.015~	4,644
		(0.005)	(0.010)	(0.006)	(0.009)	
Female	0.022	– 0.002	– 0.003	0.010	0.016	2,371
		(0.007)	(0.014)	(0.008)	(0.013)	
Male	0.016	– 0.002	– 0.005	0.010	0.015	2,273
		(0.006)	(0.013)	(0.009)	(0.013)	
ANY ANXIETY DISORDER, LIFETIME [SR]						
All	0.121	0.001	0.002	0.005	0.007	4,639
		(0.013)	(0.027)	(0.014)	(0.020)	
Female	0.149	– 0.011	– 0.023	– 0.014	– 0.021	2,367
		(0.019)	(0.038)	(0.020)	(0.031)	
Male	0.095	0.013	0.028	0.023	0.033	2,272
		(0.017)	(0.037)	(0.019)	(0.027)	

EXHIBIT ES–7. (CONTINUED)

	CONTROL MEAN	EXPERIMENTAL VERSUS CONTROL		SECTION 8 VERSUS CONTROL		
OUTCOME		ITT	TOT	ITT	TOT	*N*
SERIOUS BEHAVIORAL OR EMOTIONAL PROBLEMS [SR]						
All	0.103	– 0.022~	– 0.046~	0.019	0.029	4,644
		(0.011)	(0.024)	(0.014)	(0.021)	
Female	0.127	– 0.033*	– 0.068*	0.030	0.047	2,371
		(0.017)	(0.034)	(0.021)	(0.032)	
Male	0.081	– 0.010	– 0.021	0.007	0.010	2,273
		(0.015)	(0.032)	(0.017)	(0.024)	
PANIC ATTACKS, LIFETIME [SR]						
All	0.387	– 0.017	– 0.035	0.014	0.021	4,639
		(0.019)	(0.040)	(0.021)	(0.032)	
Female	0.423	– 0.039	– 0.079	– 0.005	– 0.008	2,367
		(0.027)	(0.054)	(0.029)	(0.045)	
Male	0.354	0.006	0.012	0.033	0.047	2,272
		(0.027)	(0.057)	(0.030)	(0.043)	
POST-TRAUMATIC STRESS DISORDER, LIFETIME [SR]						
All	0.066	0.006	0.012	0.005	0.007	4,639
		(0.010)	(0.020)	(0.011)	(0.016)	
Female	0.092	0.002	0.003	– 0.019	– 0.030	2,367
		(0.016)	(0.032)	(0.016)	(0.026)	
Male	0.041	0.010	0.021	0.030*	0.043*	2,272
		(0.012)	(0.026)	(0.015)	(0.021)	

Notes: * = p < 0.05, ~ = p < 0.10 on two-tailed t-test. Robust standard errors shown in parentheses. ITT = Intention-to-Treat or estimated impact of being offered a Moving To Opportunity (MTO) housing voucher; TOT = Treatment-on-the-Treated or estimated impact of moving using an MTO housing voucher. The control mean is unadjusted. Unless otherwise indicated, the control mean and impacts are expressed as "shares" of the sample in the category (for example, a control mean of 0.250 for Working would indicate that 25 percent of the control group was working).
Square brackets indicate the source of the outcome information: SR = self-report.
Model: Experimental and Section 8 impacts were estimated jointly using an Ordinary Least Squares (OLS) regression model controlling for baseline covariates, weighted, and clustering on family. Outcomes from the adult survey also control for field release. Youth and grown children impacts by gender were estimated as an interaction with treatment status. See Section 1.3 and the technical appendices (forthcoming) for details.
Data source and sample: Youth long-term survey. Interviewed youth ages 13 to 20 as of December 31, 2007.
Measures: Psychological distress consists of 6 items (sadness, nervousness, restlessness, hopelessness, feeling that everything is an effort, worthlessness) scaled on a score from 0 (no distress) to 24 (highest distress) and then converted to z-scores using the mean and standard deviation for of control group youth. Serious mental illness is defined as a raw score of 13 or higher on the K6. Strengths and Difficulties consists of 5 behavioral and emotional items (obedience, worry/anxiety, unhappiness, getting along better with adults than peers, attention span) scaled on score from 0 (no behavioral/emotional problems) to 12 (severe behavioral or emotional problems). A score of 6 or higher indicates serious behavioral/emotional problems. See Section 4.3 for additional details.

ECONOMIC SELF-SUFFICIENCY

A primary motivation of MTO was to determine whether moving to lower-poverty neighborhoods could boost earnings and labor force participation and ease reliance on welfare among vulnerable families. The study began shortly before the implementation of welfare reform, and only one-fourth of adults reported being employed. Three-fourths were receiving Aid to Families with Dependent Children (AFDC), and eight in ten were receiving food stamps. The average annual household income at baseline was $12,827 (in 2009 dollars), well below the official poverty line for a family of three.

Ten to fifteen years later, many more families were employed, incomes were higher, and welfare receipt had plummeted, but these changes were roughly equal for treatment and control-group families. Overall, MTO generated few systematic, detectable long-term effects on economic self-sufficiency for adults, youth, and grown children.

As Exhibit ES-8 shows, compared with control group members, experimental and Section 8 group adults have:

- similar employment levels and earnings
- similar incomes
- less food insufficiency
- somewhat higher use of food stamps (experimental group only).

Earnings and employment trends fluctuated with macroeconomic and policy shifts, with rapidly rising employment rates during economic booms and a recent fall-off during the severe recession. One distinction is a short-term decline in employment during the first two years after moving for those in the experimental and Section 8 groups compared to the control group, perhaps indicating difficulties finding work in a new location or in securing child care. Their employment rates recovered shortly thereafter and matched the ebbs and flows evident in the control group. Ten years after moving, employment outcomes were not statistically different across groups. The types of jobs the participants held also differed little across groups.

Those in the experimental group were slightly less likely to have incomes below the poverty line than control group members, but the differences were not statistically significant. In contrast, the Section 8 group saw a modest, but again not statistically significant, rise in poverty relative to the control group. The study finds higher rates of food stamp use among the experimental group—and less food insufficiency—but few differences in use of Temporary Assistance for Needy Families (TANF, the program that replaced AFDC after welfare reform). TANF receipt was on the decline nationally throughout this time period owing to welfare reform in 1996 and a robust economy in the latter half of the 1990s. There are no significant differences in welfare receipt among the Section 8 and control groups.

For adults, it appears that training, education, and employment services that directly enhance marketable skills and changes in work incentives more directly affect labor market and economic outcomes of low-income adults than do the indirect effects of changes in neighborhood environments, at least in the range observed in the MTO demonstration.

Likewise, unlike early childhood education programs or early school quality improvements, which have been shown to improve economic self-sufficiency later in life, moving to lower-poverty neighborhoods had little systematic detectable effects on the economic outcomes—including being idle, defined as neither working nor in school—for youth and grown children compared with those in the control group (see Exhibit ES-9).

EXHIBIT ES–8. KEY ADULT ECONOMIC SELF-SUFFICIENCY OUTCOMES, LONG-TERM EVALUATION						
	CONTROL MEAN	EXPERIMENTAL VERSUS CONTROL		SECTION 8 VERSUS CONTROL		
OUTCOME		ITT	TOT	ITT	TOT	*N*
EMPLOYMENT						
Currently employed [SR]	0.525	– 0.007	– 0.014	– 0.077*	– 0.124*	3,264
		(0.021)	(0.042)	(0.028)	(0.045)	
Calendar year 2007 [UI]	0.465	– 0.004	– 0.009	0.000	0.000	4,194
		(0.017)	(0.036)	(0.019)	(0.030)	
EARNINGS AND INCOME						
Annual individual earnings (previous calendar year, 2009 dollars) [SR]	$12,288.51	326.94	677.92	– 613.60	– 982.43	3,141
		(583.44)	(1,209.79)	(807.20)	(1,292.40)	
Calendar year 2007 (2009 dollars) [UI]	$11,325.14	– 347.83	– 731.73	112.93	180.50	4,194
		(523.80)	(1,101.92)	(580.69)	(928.11)	
Total Household Income (2009 dollars) [SR]	$20,025.90	607.58	1,255.56	– 41.67	– 67.33	3,258
		(727.58)	(1,503.54)	(1,009.18)	(1,630.66)	
Household income is at or below 100% of poverty line [SR]	0.590	– 0.032	– 0.067	0.036	0.059	3,258
		(0.021)	(0.043)	(0.028)	(0.045)	
Adult reported that their household sometimes/often did not have enough to eat in the past 12 months [SR]	0.336	– 0.035~	– 0.072~	– 0.067*	– 0.106*	3,266
		(0.020)	(0.042)	(0.026)	(0.042)	
FOOD STAMPS						
Currently receiving food stamps [SR]	0.470	0.016	0.032	0.029	0.046	3,253
		(0.021)	(0.043)	(0.028)	(0.045)	
Total food stamps benefits received, July 2007–June 2009 (2009 dollars) [FS]	$3,074.08	309.94*	664.54*	171.07	261.80	2,708
		(156.50)	(335.54)	(184.98)	(283.09)	
TEMPORARY ASSISTANCE FOR NEEDY FAMILIES						
Currently receiving TANF [SR]	0.158	0.010	0.021	0.026	0.041	3,262
		(0.015)	(0.031)	(0.021)	(0.033)	
Total TANF benefits received, July 2007–June 2009 (2009 dollars) [TANF]	$1,402.33	56.10	120.29	– 94.47	– 144.57	2,708
		(114.48)	(245.44)	(123.82)	(189.49)	

Notes: * = $p < 0.05$, ~ = $p < 0.10$ on two-tailed t-test. Robust standard errors shown in parentheses. ITT = Intention-to-Treat or estimated impact of being offered a Moving To Opportunity (MTO) housing voucher; TOT = Treatment-on-the-Treated or estimated impact of moving using an MTO housing voucher. The control mean is unadjusted. Unless otherwise indicated, the control mean and impacts are expressed as "shares" of the sample in the category (for example, a control mean of "0.250" for "Working" would indicate that 25 percent of the control group was working).
Square brackets indicate the source of the outcome information: SR = self-report, UI = Unemployment Insurance administrative records, TANF = Temporary Assistance for Needy Families records, FS = Food Stamps records.
Model: Experimental and Section 8 impacts were estimated jointly using an Ordinary Least Squares (OLS) regression model controlling for baseline covariates, weighted, and clustering on family. Outcomes from the adult survey also control for field release. Youth and grown children impacts by gender were estimated as an interaction with treatment status. See Section 1.3 and the technical appendices (forthcoming) for details.
Data source and sample: For self-reports, data source is the adult long-term survey and the sample is all adults interviewed. Unemployment Insurance data uses individual level data from Maryland, Illinois, California, and Florida (representing individuals whose random assignment sites are Baltimore, Chicago, and Los Angeles) and aggregate data from New York and Massachusetts (representing individuals whose random assignment sites are New York City and Boston). FS and TANF analyses use individual data from Massachusetts, Illinois, Los Angeles County, and South Carolina and represent individuals whose random assignment sites are: Boston, Chicago and Los Angeles. We received TANF and food stamps data from Maryland, but the data quality is suspect. Sample for UI, TANF, and FS is all sample adults with baseline consent.

EXHIBIT ES–9. KEY ECONOMIC SELF-SUFFICIENCY OUTCOMES FOR YOUTH AGES 15–20, LONG-TERM EVALUATION						
	CONTROL MEAN	EXPERIMENTAL VERSUS CONTROL		SECTION 8 VERSUS CONTROL		
OUTCOME		ITT	TOT	ITT	TOT	*N*
CURRENTLY EMPLOYED [SR]						
All	0.395	– 0.046*	– 0.095*	– 0.033	– 0.050	3,604
		(0.021)	(0.043)	(0.022)	(0.034)	
Female	0.410	– 0.051~	– 0.104~	– 0.042	– 0.066	1,838
		(0.029)	(0.059)	(0.031)	(0.049)	
Male	0.381	– 0.041	– 0.087	– 0.025	– 0.036	1,766
		(0.030)	(0.064)	(0.033)	(0.049)	
CURRENTLY IDLE (NEITHER EMPLOYED NOR ENROLLED IN SCHOOL) [SR]						
All	0.215	0.007	0.014	0.026	0.039	3,604
		(0.018)	(0.038)	(0.020)	(0.031)	
Female	0.194	0.024	0.049	0.031	0.048	1,838
		(0.024)	(0.048)	(0.027)	(0.043)	
Male	0.235	– 0.011	– 0.023	0.022	0.032	1,766
		(0.027)	(0.058)	(0.031)	(0.045)	

Notes: * = p < 0.05, ~ = p < 0.10 on two-tailed t-test. Robust standard errors shown in parentheses. ITT = Intention-to-Treat or estimated impact of being offered a Moving To Opportunity (MTO) housing voucher; TOT = Treatment-on-the-Treated or estimated impact of moving using an MTO housing voucher. The control mean is unadjusted. Unless otherwise indicated, the control mean and impacts are expressed as "shares" of the sample in the category (for example, a control mean of "0.250" for "Working" would indicate that 25 percent of the control group was working).
Square brackets indicate the source of the outcome information: SR = self-report.
Model: Experimental and Section 8 impacts were estimated jointly using an Ordinary Least Squares (OLS) regression model controlling for baseline covariates, weighted, and clustering on family. Outcomes from the adult survey also control for field release. Youth and grown children impacts by gender were estimated as an interaction with treatment status. See Section 1.3 and the technical appendices (forthcoming) for details.
Data source and sample: Youth long-term survey. Interviewed youth ages 15 to 20 as of December 31, 2007.

RISKY AND CRIMINAL BEHAVIOR

Previous nonexperimental studies suggest that risky and criminal behavior is the outcome domain that has among the strongest associations with neighborhood conditions (Sampson, Morenoff, and Gannon-Rowley, 2002). Neighborhoods may affect risky and criminal behavior through peer influences, the ability of local adults to monitor and support pro-social behavior in the community, or other factors that make pro-social alternatives to crime (such as school and work) more or less attractive. The quality of policing services may also vary across areas. If less economically distressed areas have higher-quality policing, that could help deter criminal behavior but might also lead our analysis of administrative arrest records to understate any beneficial effects of MTO that reduce crime, and overstate any adverse effects towards increased criminality.

Ten to fifteen years after random assignment we found few statistically significant impacts of MTO on risky and criminal behavior, although we did find some signs of a similar sort of gender difference in how youth respond to MTO moves as was found at interim, and some indication of potentially beneficial impacts on arrests for drug selling.

More specifically, as shown in exhibits ES-10 and ES-11, we find:

- Male youth in the Section 8 group engage in more problem behavior, and those in both the experimental and Section 8 groups are more likely to smoke compared with those in the control group.
- Female youth in the experimental group are less likely to have tried alcohol than those in the control group.

- Few statistically significant differences in the number of arrests for violent crimes, property crimes, or other (non-violent, non-property, non-drug) crimes across treatment groups.
- Some indication that the number of arrests for drug-selling declined for male youth in the experimental group and for male grown children in the Section 8 group, and that the likelihood of ever having been arrested for drug-selling may have declined for adults in the experimental group compared with those in the control group.

The estimated effects of MTO on risky and criminal behavior of those who were teens at the long term follow up were more muted compared to MTO's effects on those who were teens at the time of the interim study. The long term data do provide a few indications of the same type of gender difference in youth responses to MTO moves as were found in the interim data, with male youth who moved through MTO engaging in relatively more of some risky behaviors (smoking, behavior problems) compared with controls, and female youth who moved through MTO experiencing declines in some risky behaviors (drinking) compared to controls.

The fact that the effects of MTO on risky and criminal behavior are generally more muted in the long-term data compared to the interim data suggests that contemporaneous neighborhood environments may matter more for these outcomes than does accumulated exposure to less distressed areas. The fact that we see signs of a gender difference in responses to residential mobility in a sample of teens in the long term data that is mostly non-overlapping with the youth who were studied in the interim follow up suggests that the gender difference in MTO impacts documented at interim may not be just a statistical artifact unique to that particular sample.

The one outcome for which we do see at least some hints of more pronounced impacts in the long-term data than in the interim data is with declining arrest rates for drug distribution among the MTO treatment groups compared to controls. These results are more pronounced for teens in the long-term follow-up than for grown children or adults and are consistent with the widely-documented "age-crime curve" showing that aggregate arrest rates for most crimes peak during late adolescence or early adulthood.

EDUCATIONAL OUTCOMES

We had anticipated that MTO might generate more pronounced positive impacts on educational outcomes in the long-term follow up than in the interim study, in part because more families may have been willing to send their children to schools in lower-poverty areas rather than remain in their original baseline schools. In addition, many social scientists believe that early childhood is a time in which cognitive, socio-emotional, and behavioral skills may be particularly "plastic" and susceptible to intervention, which led us to expect that MTO might have relatively larger effects on the long-term schooling outcomes of participants who were preschool age at baseline.

Ten to fifteen years after random assignment, we found few statistically significant impacts on educational outcomes, including for children who were very young at baseline, and mixed impacts of MTO on different measures of school quality.

More specifically, in comparing children assigned to the experimental and Section 8 groups with control group children, we found:

- Similar average scores on reading and math achievement tests across groups.
- Similar grades in school and rates of grade retention across groups.
- Indications of slightly worse outcomes in some respects for Section 8 males, who were less likely to be on track educationally and less likely to have attended college than control group males.
- No evidence that impacts on educational outcomes varied systematically with the child's age at the time of random assignment.
- A mixed pattern of differences across randomly assigned groups with respect to school measures typically associated with "quality." Youth in the experimental and Section 8 groups attended schools with lower shares of students who are low-income or members of racial and ethnic minority

groups and for the experimental group schools that ranked slightly higher on state exams; but these youth also attended schools that were larger, in terms of the total size of the student body.

These findings do not mean that neighborhood environments never matter for educational outcomes. The MTO mobility intervention generated more pronounced impacts on neighborhood conditions than on school conditions. As with the interim follow up, the long term data show that MTO had modest and mixed impacts on school quality. A majority of MTO children were still attending majority-minority, overwhelmingly low-income public schools located in the districts serving the five original MTO cities.

THE CAUSES OF POVERTY ARE COMPLEX AND EXTEND BEYOND NEIGHBORHOOD EFFECTS

The findings of the long-term study of MTO suggest that housing mobility programs can improve the quality of the immediate environments that families experience -in particular living conditions related to housing quality, neighborhood poverty and other aspects of disadvantage, and safety. MTO-induced improvements in housing and neighborhood conditions appear to improve some aspects of physical and mental health. Most noteworthy here are reductions in extreme obesity and diabetes and better mental health for adults. MTO moves may also reduce involvement in some forms of risky or criminal behavior of youth, most notably drug selling. However, moving to lower-poverty neighborhoods as part of an MTO-type residential mobility program does not appear to improve educational outcomes, employment, or earnings. The cause of high rates of dropout and unemployment and low earnings found in many disadvantaged urban neighborhoods may rest with barriers that cannot be captured by neighborhood demographics, socio-economic composition, and social processes, at least within the range of neighborhood variation that mobility programs like MTO are able to modify. Put differently, MTO was more successful in improving mental and physical health in poor families that signed up to participate in the program than in bringing about the improvements in education and labor market outcomes needed to boost family incomes.

EXHIBIT ES–10. RISKY AND CRIMINAL BEHAVIOR OUTCOMES FOR YOUTH, LONG-TERM EVALUATION

	CONTROL MEAN	EXPERIMENTAL VERSUS CONTROL		SECTION 8 VERSUS CONTROL		
OUTCOME		ITT	TOT	ITT	TOT	*N*
RISKY AND DELINQUENT BEHAVIOR FOR YOUTH AGES 13–20						
RISKY BEHAVIOR INDEX [SR]						
All	0.467	– 0.001	– 0.002	0.007	0.010	4,623
		(0.014)	(0.029)	(0.015)	(0.022)	
Female	0.442	– 0.027	– 0.054	– 0.017	– 0.026	2,358
		(0.019)	(0.037)	(0.020)	(0.031)	
Male	0.491	0.025	0.053	0.029	0.042	2,265
		(0.018)	(0.039)	(0.020)	(0.028)	
BEHAVIOR PROBLEMS INDEX [SR]						
All	0.379	0.004	0.008	0.009	0.013	4,629
		(0.010)	(0.022)	(0.011)	(0.017)	
Female	0.371	– 0.007	– 0.014	– 0.010	– 0.015	2,361
		(0.014)	(0.028)	(0.015)	(0.024)	
Male	0.387	0.015	0.032	0.027~	0.038~	2,268
		(0.015)	(0.032)	(0.016)	(0.023)	

EXHIBIT ES–10. (CONTINUED)						
	CONTROL MEAN	EXPERIMENTAL VERSUS CONTROL		SECTION 8 VERSUS CONTROL		
OUTCOME		ITT	TOT	ITT	TOT	*N*
RISKY AND DELINQUENT BEHAVIOR FOR YOUTH AGES 13–20 (CONTINUED)						
DELINQUENCY INDEX [SR]						
All	0.146	– 0.002	– 0.004	0.008	0.012	4,625
		(0.008)	(0.017)	(0.009)	(0.014)	
Female	0.110	– 0.006	– 0.011	– 0.005	– 0.008	2,360
		(0.009)	(0.019)	(0.010)	(0.016)	
Male	0.181	0.002	0.004	0.021	0.030	2,265
		(0.013)	(0.029)	(0.016)	(0.022)	
EVER SMOKED [SR]						
All	0.312	0.042*	0.088*	0.043*	0.064*	4,618
		(0.019)	(0.039)	(0.020)	(0.030)	
Female	0.297	0.022	0.044	0.016	0.026	2,355
		(0.025)	(0.051)	(0.028)	(0.043)	
Male	0.327	0.062*	0.134*	0.069*	0.098*	2,263
		(0.025)	(0.054)	(0.028)	(0.040)	
EVER HAD ALCOHOLIC DRINK [SR]						
All	0.534	– 0.032	– 0.067	– 0.017	– 0.026	4,618
		(0.020)	(0.041)	(0.021)	(0.032)	
Female	0.541	– 0.061*	– 0.124*	– 0.032	– 0.050	2,355
		(0.026)	(0.053)	(0.029)	(0.045)	
Male	0.528	– 0.003	– 0.006	– 0.004	– 0.005	2,263
		(0.027)	(0.058)	(0.029)	(0.041)	
NUMBER OF ARRESTS BY CRIME TYPE FOR YOUTH AGES 15–20						
VIOLENT CRIME ARRESTS [CJR]						
All	0.325	0.043	0.091	– 0.062	– 0.094	4,717
		(0.037)	(0.078)	(0.039)	(0.059)	
Female	0.155	0.027	0.055	– 0.048	– 0.074	2,300
		(0.033)	(0.069)	(0.033)	(0.050)	
Male	0.481	0.060	0.128	– 0.076	– 0.115	2,417
		(0.064)	(0.138)	(0.068)	(0.102)	
PROPERTY CRIME ARRESTS [CJR]						
All	0.239	0.065*	0.136*	– 0.013	– 0.019	4,717
		(0.031)	(0.064)	(0.034)	(0.051)	
Female	0.091	0.044~	0.090~	– 0.010	– 0.015	2,300
		(0.026)	(0.053)	(0.023)	(0.035)	
Male	0.375	0.086	0.183	– 0.016	– 0.025	2,417
		(0.054)	(0.117)	(0.060)	(0.090)	

EXHIBIT ES–10. (CONTINUED)

	CONTROL MEAN	EXPERIMENTAL VERSUS CONTROL		SECTION 8 VERSUS CONTROL		
OUTCOME		ITT	TOT	ITT	TOT	*N*
NUMBER OF ARRESTS BY CRIME TYPE FOR YOUTH AGES 15–20 (CONTINUED)						
DRUG POSSESSION ARRESTS [CJR]						
All	0.117	0.010	0.020	– 0.034~	– 0.052~	4,717
		(0.019)	(0.039)	(0.019)	(0.028)	
Female	0.013	0.005	0.009	– 0.011	– 0.017	2,300
		(0.010)	(0.021)	(0.010)	(0.016)	
Male	0.213	0.015	0.032	– 0.057	– 0.085	2,417
		(0.035)	(0.075)	(0.035)	(0.052)	
DRUG DISTRIBUTION ARRESTS [CJR]						
All	0.091	– 0.025	– 0.052	– 0.014	– 0.021	4,717
		(0.017)	(0.036)	(0.022)	(0.033)	
Female	0.006	0.011	0.023	– 0.006	– 0.009	2,300
		(0.009)	(0.020)	(0.010)	(0.015)	
Male	0.169	– 0.059~	– 0.127~	– 0.020	– 0.031	2,417
		(0.032)	(0.069)	(0.042)	(0.063)	
OTHER CRIME ARRESTS [CJR]						
All	0.306	0.000	– 0.001	– 0.048	– 0.072	4,717
		(0.034)	(0.071)	(0.037)	(0.055)	
Female	0.090	0.015	0.030	0.021	0.032	2,300
		(0.023)	(0.047)	(0.026)	(0.040)	
Male	0.503	– 0.014	– 0.029	– 0.113~	– 0.170~	2,417
		(0.064)	(0.136)	(0.067)	(0.100)	

Notes: * = p < 0.05, ~ = p < 0.10 on two-tailed t-test. Robust standard errors shown in parentheses. ITT = Intention-to-Treat or estimated impact of being offered a Moving To Opportunity (MTO) housing voucher; TOT = Treatment-on-the-Treated or estimated impact of moving using an MTO housing voucher. The control mean is unadjusted. Unless otherwise indicated, the control mean and impacts are expressed as "shares" of the sample in the category (for example, a control mean of 0.250 for Working would indicate that 25 percent of the control group was working).
Square brackets indicate the source of the outcome information: SR = self-report. CJR = criminal justice records.
Model: Experimental and Section 8 impacts were estimated jointly using an Ordinary Least Squares (OLS) regression model controlling for baseline covariates, weighted, and clustering on family. Outcomes from the adult survey also control for field release. Youth and grown children impacts by gender were estimated as an interaction with treatment status. See Section 1.3 and the technical appendices (forthcoming) for details.
Data source and sample: For the self-reported measures, the data source is the youth long-term survey, and the sample is interviewed youth ages 13 to 20 as of December 31, 2007. For the arrest measures, the data source is individual criminal justice system arrest data (adult and juvenile data from California, Illinois, and Maryland; de-identified adult data from New York State; juvenile data from New York City; and adult or juvenile records from 8 additional states in which participants have lived), and the sample is all core household members ages 15 to 20 as of December 31, 2007.
Measures: The Risky Behavior Index is the fraction of 4 risky behaviors (smoking, alcohol use, marijuana use, and sex) that the youth reports ever having exhibited. The Behavior Problems Index is the fraction of 11 problem behaviors (for example, difficulty concentrating and having a strong temper) that the youth reported as true or sometimes true at present or in the past 6 months. The Delinquency Index is the fraction of 8 delinquent behaviors (for example, carrying a gun and destroying property) that the youth reported ever having exhibited. Violent crime arrests involve charges of force or threat of force including homicide, rape, robbery, assault, kidnapping, and weapons charges. Property crime arrests involve taking money or property and include burglary, motor vehicle theft, larceny, trespassing, and receiving stolen property. Drug crime arrests are classified as either possession or distribution arrests. "Other" arrest charges cover any charges not classified as violent, property, or drug crimes and include disorderly conduct and moving violations.

EXHIBIT ES–11. NUMBER OF POST-RANDOM ASSIGNMENT ARRESTS FOR GROWN CHILDREN AGES 21–30 AND ADULTS, LONG-TERM EVALUATION						
	CONTROL MEAN	EXPERIMENTAL VERSUS CONTROL		SECTION 8 VERSUS CONTROL		
OUTCOME		ITT	TOT	ITT	TOT	*N*
GROWN CHILDREN						
NUMBER OF…						
ANY CRIME ARRESTS [CJR]						
All	2.862	– 0.090	– 0.212	– 0.116	– 0.202	4,641
		(0.171)	(0.404)	(0.192)	(0.332)	
Female	0.967	– 0.054	– 0.126	– 0.037	– 0.063	2,277
		(0.131)	(0.306)	(0.157)	(0.269)	
Male	4.673	– 0.124	– 0.296	– 0.192	– 0.335	2,364
		(0.303)	(0.726)	(0.347)	(0.607)	
VIOLENT CRIME ARRESTS [CJR]						
All	0.626	– 0.055	– 0.129	– 0.042	– 0.072	4,641
		(0.047)	(0.112)	(0.054)	(0.093)	
Female	0.279	– 0.038	– 0.089	– 0.047	– 0.080	2,277
		(0.045)	(0.105)	(0.051)	(0.087)	
Male	0.958	– 0.071	– 0.169	– 0.038	– 0.066	2,364
		(0.082)	(0.196)	(0.092)	(0.161)	
PROPERTY CRIME ARRESTS [CJR]						
All	0.633	– 0.006	– 0.014	– 0.042	– 0.072	4,641
		(0.054)	(0.128)	(0.061)	(0.105)	
Female	0.297	– 0.057	– 0.132	– 0.016	– 0.027	2,277
		(0.046)	(0.107)	(0.065)	(0.112)	
Male	0.953	0.044	0.105	– 0.064	– 0.112	2,364
		(0.093)	(0.222)	(0.100)	(0.175)	
DRUG POSSESSION ARRESTS [CJR]						
All	0.461	– 0.042	– 0.100	– 0.011	– 0.020	4,641
		(0.044)	(0.104)	(0.053)	(0.093)	
Female	0.069	0.001	0.002	0.015	0.026	2,277
		(0.030)	(0.070)	(0.035)	(0.060)	
Male	0.835	– 0.084	– 0.202	– 0.037	– 0.065	2,364
		(0.082)	(0.196)	(0.103)	(0.179)	
DRUG DISTRIBUTION ARRESTS [CJR]						
All	0.338	– 0.047	– 0.111	– 0.063~	– 0.110~	4,641
		(0.035)	(0.082)	(0.037)	(0.064)	
Female	0.058	– 0.023	– 0.055	0.018	0.032	2,277
		(0.024)	(0.056)	(0.028)	(0.049)	
Male	0.605	– 0.069	– 0.165	– 0.140*	– 0.245*	2,364
		(0.063)	(0.151)	(0.067)	(0.116)	

EXHIBIT ES–11. (CONTINUED)

	CONTROL MEAN	EXPERIMENTAL VERSUS CONTROL		SECTION 8 VERSUS CONTROL		
OUTCOME		ITT	TOT	ITT	TOT	*N*
GROWN CHILDREN (CONTINUED)						
OTHER CRIME ARRESTS [CJR]						
All	0.804	0.060	0.141	0.042	0.072	4,641
		(0.066)	(0.155)	(0.074)	(0.128)	
Female	0.263	0.063	0.147	– 0.008	– 0.013	2,277
		(0.052)	(0.121)	(0.054)	(0.092)	
Male	1.321	0.056	0.134	0.087	0.153	2,364
		(0.116)	(0.278)	(0.137)	(0.239)	
ADULTS						
NUMBER OF…						
Any crime arrests [CJR]	0.567	0.052	0.110	– 0.016	– 0.026	4,376
		(0.064)	(0.135)	(0.060)	(0.096)	
Violent crime arrests [CJR]	0.149	0.001	0.002	– 0.009	– 0.014	4,376
		(0.020)	(0.043)	(0.022)	(0.035)	
Property crime arrests [CJR]	0.133	0.043~	0.091~	– 0.002	– 0.002	4,376
		(0.025)	(0.052)	(0.022)	(0.036)	
Drug possession arrests [CJR]	0.080	0.006	0.013	– 0.004	– 0.006	4,376
		(0.018)	(0.038)	(0.019)	(0.030)	
Drug distribution arrests [CJR]	0.035	– 0.007	– 0.016	0.001	0.001	4,376
		(0.008)	(0.017)	(0.009)	(0.015)	
Other crime arrests [CJR]	0.171	0.009	0.020	– 0.003	– 0.005	4,376
		(0.027)	(0.056)	(0.025)	(0.040)	

Notes: * = p < 0.05, ~ = p < 0.10 on two-tailed t-test. Robust standard errors shown in parentheses. ITT = Intention-to-Treat or estimated impact of being offered a Moving To Opportunity (MTO) housing voucher; TOT = Treatment-on-the-Treated or estimated impact of moving using an MTO housing voucher. The control mean is unadjusted. Unless otherwise indicated, the control mean and impacts are expressed as "shares" of the sample in the category (for example, a control mean of 0.250 for Working would indicate that 25 percent of the control group was working).
Square brackets indicate the source of the outcome information: CJR = criminal justice records.
Model: Experimental and Section 8 impacts were estimated jointly using an OLS (Ordinary Least Squares) regression model controlling for baseline covariates, weighted, and clustering on family. Outcomes from the adult survey also control for field release. Youth and grown children impacts by gender were estimated as an interaction with treatment status. See Section 1.3 and the technical appendices (forthcoming) for details.
Data source and sample: Individual criminal justice system arrest data. Adult and juvenile data from California, Illinois, Massachusetts, and Maryland; de-identified adult data from New York State; juvenile data from New York City; and adult or juvenile records from 8 additional states in which participants have lived. The grown children sample is all core household members who are now grown children (under age 18 at baseline and ages 21 to 30 as of December 31, 2007). The adult sample is all long-term survey sampling frame adults with a baseline consent form.
Measures: Violent crime arrests involve charges of force or threat of force including homicide, rape, robbery, assault, kidnapping, and weapons charges. Property crime arrests involve taking money or property and include burglary, motor vehicle theft, larceny, trespassing, and receiving stolen property. Drug crime arrests are classified as either possession or distribution arrests. "Other" arrest charges cover any charges not classified as violent, property, or drug crimes and include disorderly conduct and moving violations.

EXHIBIT ES–12. ACHIEVEMENT AND EDUCATIONAL OUTCOMES FOR YOUTH, LONG-TERM EVALUATION						
	CONTROL MEAN	EXPERIMENTAL VERSUS CONTROL		SECTION 8 VERSUS CONTROL		
OUTCOME		ITT	TOT	ITT	TOT	*N*
ACHIEVEMENT ASSESSMENT RESULTS FOR YOUTH AGES 13–20						
READING ASSESSMENT SCORE [ECLS-K]						
All	0.000	0.003 (0.041)	0.006 (0.085)	0.040 (0.044)	0.058 (0.064)	4,432
Female	0.051	– 0.020 (0.055)	– 0.040 (0.110)	0.054 (0.061)	0.081 (0.093)	2,286
Male	– 0.050	0.027 (0.056)	0.058 (0.118)	0.025 (0.058)	0.035 (0.081)	2,146
MATH ASSESSMENT SCORE [ECLS-K]						
All	0.000	– 0.025 (0.044)	– 0.052 (0.090)	0.000 (0.048)	0.000 (0.069)	4,420
Female	– 0.004	– 0.034 (0.055)	– 0.069 (0.112)	– 0.033 (0.061)	– 0.050 (0.093)	2,280
Male	0.004	– 0.016 (0.060)	– 0.034 (0.128)	0.034 (0.067)	0.047 (0.093)	2,140
CHARACTERISTICS OF THE AVERAGE SCHOOL ATTENDED BY YOUTH AGES 10–20						
Share minority [CCD, PSS]	0.904	– 0.037* (0.008)	– 0.077* (0.016)	– 0.016~ (0.008)	– 0.023~ (0.012)	5,077
Share eligible for free lunch [CCD]	0.701	– 0.048* (0.007)	– 0.101* (0.015)	– 0.026* (0.008)	– 0.039* (0.012)	5,043
Number of students [CCD, PSS]	927.1	25.4~ (14.9)	53.0~ (31.1)	41.4* (17.5)	61.9* (26.1)	5,077
Pupil-teacher ratio [CCD, PSS]	17.834	– 0.103 (0.103)	– 0.214 (0.215)	– 0.061 (0.113)	– 0.091 (0.170)	5,076
School-level percentile ranking on state exam [SLAD]	18.684	3.070* (0.651)	6.430* (1.364)	1.218~ (0.661)	1.810~ (0.983)	4,884
SCHOOLING OUTCOMES FOR OLDER YOUTH						
EDUCATIONALLY ON-TRACK [SR]						
All (ages 15–20)	0.814	– 0.014 (0.018)	– 0.028 (0.037)	– 0.029 (0.021)	– 0.044 (0.031)	3,614

EXHIBIT ES–12. (CONTINUED)

	CONTROL MEAN	EXPERIMENTAL VERSUS CONTROL		SECTION 8 VERSUS CONTROL		
OUTCOME		ITT	TOT	ITT	TOT	*N*
EDUCATIONALLY ON-TRACK [SR] (CONTINUED)						
Female	0.827	– 0.007	– 0.015	0.008	0.012	1,842
		(0.023)	(0.046)	(0.026)	(0.040)	
Male	0.801	– 0.019	– 0.041	– 0.066*	– 0.096*	1,772
		(0.026)	(0.055)	(0.029)	(0.042)	
HIGH SCHOOL DIPLOMA [SR]						
All (ages 19–20)	0.622	– 0.073~	– 0.141~	– 0.056	– 0.092	1,125
		(0.038)	(0.073)	(0.042)	(0.068)	
Female	0.708	– 0.087~	– 0.169~	– 0.054	– 0.089	576
		(0.048)	(0.094)	(0.054)	(0.088)	
Male	0.536	– 0.058	– 0.110	– 0.058	– 0.094	549
		(0.058)	(0.109)	(0.062)	(0.102)	
POST-SECONDARY OUTCOMES FOR OLDER YOUTH						
SINCE 2007, ATTENDED ANY COLLEGE [NSC]						
All (ages 15–20)	0.262	– 0.014	– 0.029	– 0.021	– 0.033	4,717
		(0.016)	(0.033)	(0.017)	(0.025)	
Female	0.305	– 0.011	– 0.023	0.000	0.001	2,300
		(0.023)	(0.048)	(0.025)	(0.039)	
Male	0.222	– 0.016	– 0.033	– 0.042*	– 0.064*	2,417
		(0.021)	(0.044)	(0.021)	(0.032)	

Notes: * = $p < 0.05$, ~ = $p < 0.10$ on two-tailed t-test. Robust standard errors shown in parentheses. ITT = Intention-to-Treat or estimated impact of being offered a Moving To Opportunity (MTO) housing voucher; TOT = Treatment-on-the-Treated or estimated impact of moving using an MTO housing voucher. The control mean is unadjusted. Unless otherwise indicated, the control mean and impacts are expressed as "shares" of the sample in the category (for example, a control mean of 0.250 for Working would indicate that 25 percent of the control group was working). Average school characteristics are weighted by the amount of time youth spent at each school.

Square brackets indicate the source of the outcome information: ECLS-K = achievement assessment from the Early Childhood Longitudinal Study-Kindergarten cohort study, CCD = Common Core of Data, PSS = Private School Universe Survey, SLAD = School-level assessment data from the National Longitudinal School-Level State Assessment Score Database, SR = self-report, NSC =

Model: Experimental and Section 8 impacts were estimated jointly using an Ordinary Least Squares (OLS) regression model controlling for baseline covariates, weighted, and clustering on family. Outcomes from the adult survey also control for field release. Youth and grown children impacts by gender were estimated as an interaction with treatment status. See Section 1.3 and the technical appendices (forthcoming) for details.

Executive Summary Exhibit 12. (continued)

Data source and sample: For ECLS-K scores and self-reported measures, the data source is the youth long-term survey. In some cases, the youth school histories on which the school characteristics measures are based combine self-reports from the long-term survey with parent reports from the interim survey. The sample is comprised of long-term survey interviewed youth of varying age ranges (as of December 31, 2007), with details included above. The sample for the NSC measure is all core household members ages 15 to 20 as of December 31, 2007.

Measures: The reading and math achievement assessment scores are theta scores transformed into z-scores via standardization on the mean and standard deviation for control group youth ages 13 to 20. The school-level percentile ranking on state exam measure includes schools through 8th grade only for New York and Massachusetts. On-track youth are those who were currently in school or received a high school diploma or GED (certificate of General Educational Development).