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In This Issue

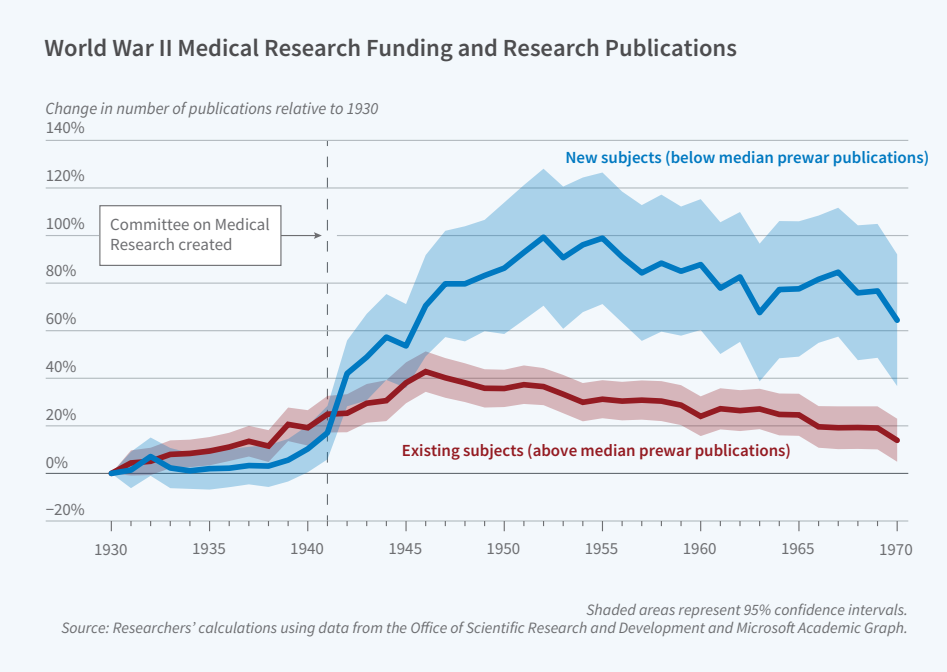
Long-Term Effects of the US Medical Research Effort During World War II

While US biomedical research funding generally allows researchers considerable freedom in determining the most promising topics to study, there have been some programs, such as the War on Cancer in the 1970s and Operation Warp Speed during the COVID-19 pandemic, that target funding at particular technologies or health objectives.

In The Therapeutic Consequences of the War: World War II and the 20th-Century Expansion of Biomedicine (NBER Working Paper 33457), Daniel P. Gross and Bhaven N. Sampat examine a historical precedent for top-down, targeted biomedical research. During World War II, when the high incidence of both disease- and injury-related military casualties created an urgent need for medical innovation, the US government established the Committee on Medical Research (CMR) under the Office of Scientific Research and Development (OSRD). CMR was charged with supporting research in a wide range of medical science and technology areas — with examples from antibiotics to blood substitutes and preservatives, human physiology in extreme environments, new injury treatment methods, and more.

CMR mobilized the nation's scientific and clinical personnel toward solving specific military medical challenges, emphasizing speed and practical relevance over fundamental scientific value. The total cost — around $400 million in 2024 dollars — was only 5 percent of OSRD's budget and less than 1 percent of the current National Institutes of Health (NIH) budget. Yet partly as a result of CMR's work, the ratio of US military deaths from disease to combat injuries declined from 1.02 in World War I to 0.07 in World War II.

To evaluate CMR's longer-term impact on biomedical innovation, the researchers use data from all 590 CMR contracts and data on biomedical scientific publications between 1930 and 1970 from Microsoft Academic Graph to compare trends over time in subjects that CMR supported to others. The researchers find that scientific activity in "existing" subjects — those with above-median numbers of pre-war publications — grew steadily before the war, accelerated during the conflict, and subsequently contracted, returning to approximately 1940 levels by 1970. In contrast, emerging subjects that were a focus of CMR research — those with below-median pre-war publications — saw little pre-war growth but substantially more postwar activity for at least a quarter century after the war, supported by new discoveries, capabilities, and research tools and methods generated by the CMR effort



Beyond science, CMR also influenced the drug industry, ushering in a "golden age" of drug discovery: drug categories that were a focus of the CMR effort subsequently generated between one and two more drugs annually during the 1950s than others. CMR-supported firms were also more likely to file patents that referenced scientific literature, potentially indicating a shift from empiricism and trial-and-error drug discovery toward science-based innovation.

When CMR was disbanded after the war, the US Public Health Service absorbed its 40-odd remaining open contracts, which provided the foundation for the NIH extramural research program. Though NIH is now large and primarily supports undirected, bottom-up investigator-initiated research, the authors point to CMR's example as indicative of the potential effects coordinated, directed approaches to biomedical research can have.

The authors acknowledge financial support from Duke University's Fuqua School of Business, the Harvard Business School Division of Research and Faculty Development, and National Science Foundation grant 1951470.

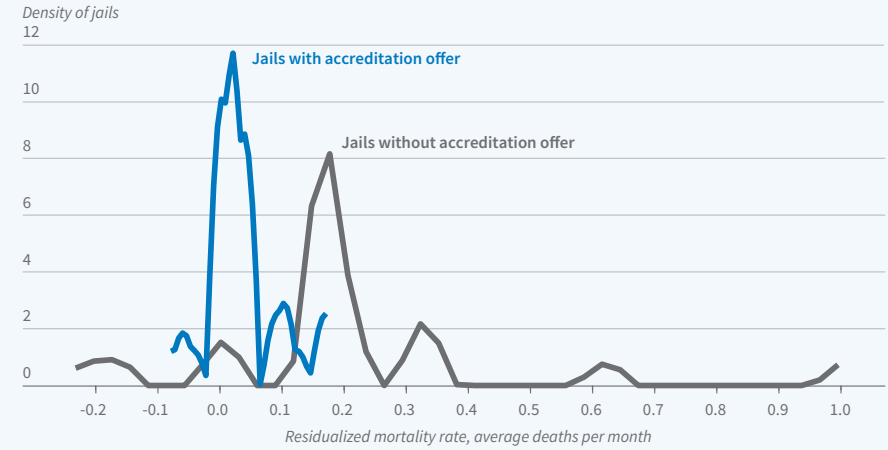
Healthcare Accreditation and Care in US Jails

With more than 600,000 individuals in jails on any given day and more than 7 million passing through jail at some point during each year, the United States has one of the highest incarceration rates in the world. In a landmark 1976 decision, *Estelle v. Gamble*, the US Supreme Court ruled that deliberate indifference to the serious medical needs of incarcerated people violates the Eighth Amendment's prohibition against cruel and unusual punishment. Individuals who are in jail are the only group to have a constitutional right to "reasonably adequate" healthcare. There is little oversight or funding, however, of healthcare in short-term detention facilities.

In The Hidden Health Care Crisis Behind Bars: A Randomized Trial to Accredit US Jails (NBER Working Paper 33357), researchers Marcella Alsan and Crystal Yang study the effects of medical accreditation on inmates' health outcomes. Fewer than one in five correctional facilities have sought third-party accreditation.

To study the impact of accreditation, the researchers recruited 44 small and midsize jails across the country and then provided subsidies to encourage half of them to obtain accreditation. Over the course of the four-year study, 13 facilities were accredited by the National Commission on Correctional Health Care (NCCHC). From the initial sample, 22 facilities received more modest subsidies; they served as the control group and started accreditation at the end of the study.

The researchers gathered data and feedback from the jails' leadership, custody and medical staff, outside jail administrators, healthcare providers, and former inmates. They also examined independent audits of the facilities' medical records and death logs. They found that the offer of accreditation led to statistically significant and economically meaningful benefits for a range of outcomes.



The residualized rate is the difference between the observed and the predicted rates, accounting for characteristics of the jails. National Commission on Correctional Health Care accreditation is a signal of constitutionally adequate healthcare. Source: Researchers' calculations using data from surveys, interviews, and the Census of Jails.

Healthcare accreditation of US jails reduces mortality rates and recidivism.

Inmate mortality in the facilities that were offered accreditation was only one-third as high as that in the control group. The treatment facilities also showed more effective coordination between custody and medical staff. Treatment facilities observed custody staff trained in law enforcement began to work with the medical staff to allow screening and initial health assessments within the first few days of incarceration, when people are most at risk. The researchers found medical and custody staff coordination rose by 4.7 percentage points, an increase of 7 percent relative to the control group. Staff satisfaction rose 2.8 percentage points, even though jails did not add staff or make large capital investments during or after the process. Jails with fewer medical personnel per inmate saw larger reductions in mortality and improvements in compliance with quality standards. Compliance with "personnel training" and "patient care and treatment" also improved by 15 percent and 11 percent, respectively, relative to the mean of the control group.

The offer of accreditation was associated with a reduction in recidivism. Individuals released from treatment facilities were 44 percent less likely to be rebooked at the same jail in the following three months and 45 percent less likely within six months than those released from control facilities. This improvement could prove cost-effective since a lower rate of recidivism implies greater public safety and smaller jail populations.

— Laurent Belsie

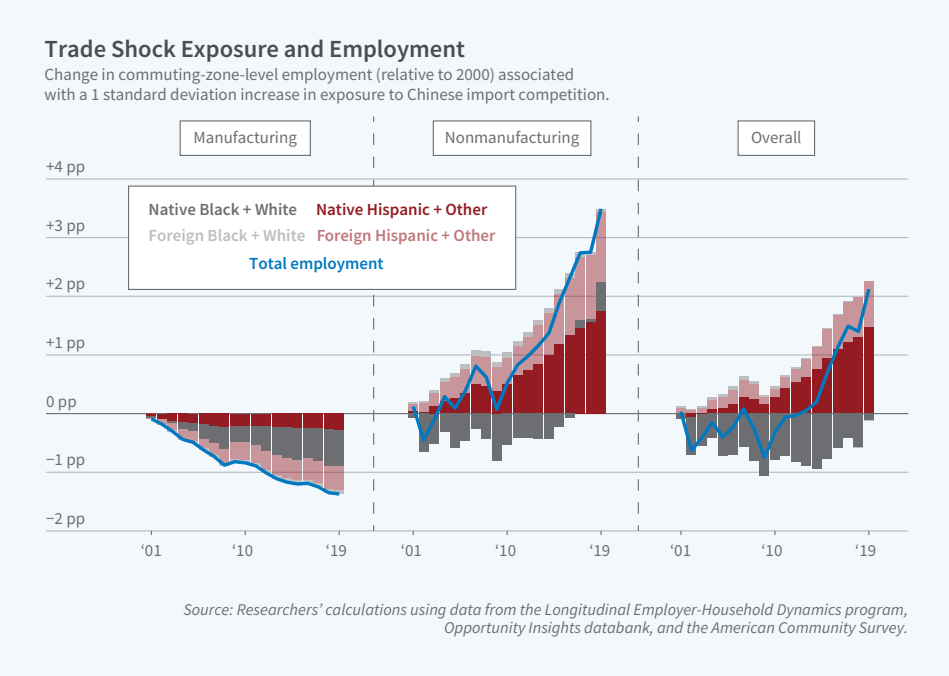
The researchers gratefully acknowledge funding from J-PAL North America, the William T. Grant Foundation, the Preparedness and Treatment Equity Coalition, Arnold Ventures, and the Malcolm Wiener Center for Social Policy at the Harvard Kennedy School.

Labor Market Adaptation to Rising Import Competition

In Places versus People: The Ins and Outs of Labor Market Adjustment to Globalization (NBER Working Paper 33424), David Autor, David Dorn, Gordon H. Hanson, Maggie R. Jones, and Bradley Setzler examine how local labor markets and the workers in these markets adjusted to increased Chinese import competition in the first two decades of this century. They analyze comprehensive employer-employee data from the Census Bureau's Longitudinal Employer-Household Dynamics program over the 2000–19 period. Their analysis exploits location-specific variation in the impact of growing imports from China following China's accession to the World Trade Organization (WTO) in 2001, which is due to the heterogeneity in industry composition across local labor markets.

The study finds that while trade-exposed regions more than fully recovered their trade-induced employment losses after 2010, incumbent workers in those regions did not experience comparable recovery. Manufacturing employment in trade-exposed commuting zones continued declining steadily throughout the study period. Yet, by 2019, nonmanufacturing employment in these regions had expanded enough to more than offset manufacturing job losses.

Conventional economic theory predicts adjustment through geographic mobility, sectoral reallocation, and temporary nonemployment. However, the researchers find that cross-sector mobility of former manufacturing workers accounted for only 14 percent of the manufacturing employment decline. Measured another way, it accounts for only 6 percent of nonmanufacturing employment growth. Moreover, instead of seeing increasing out-migration, trade-exposed regions experienced reduced outward migration of incumbent workers alongside reduced inflows of workers from other regions.



US manufacturing job losses from Chinese import competition have been offset by employment growth in low-wage service sectors, but few former manufacturing workers have shifted to these sectors.

The employment recovery in trade-exposed regions stemmed primarily from inflows of young adults who were below working age when China joined the WTO and the entry of foreign-born workers obtaining their first US jobs in these regions. These new entrants differ significantly from displaced manufacturing workers — they are disproportionately native-born Hispanics, foreign-born immigrants, women, and college-educated individuals.

Rising imports transformed the earnings structure of affected regions. Lost manufacturing jobs were predominantly middle- and high-paying positions, while new nonmanufacturing employment was concentrated in low-wage service sectors like healthcare, education, retail, and hospitality. By 2019, 62 percent of net employment growth in trade-exposed regions occurred in the bottom tercile of the earnings distribution.

Employment-to-population ratios in trade-exposed regions remained depressed through 2019 despite employment growth. This reflects both demographic shifts and differential labor market participation. There was a substantial drop in the native-born, White, non-college-educated male share of employment among workers aged 40–64 in the most trade-exposed regions.

The study underscores how adjustment to trade shocks can be generational, occurring not through the adaptation of incumbent workers but through a demographic transformation of the workforce.

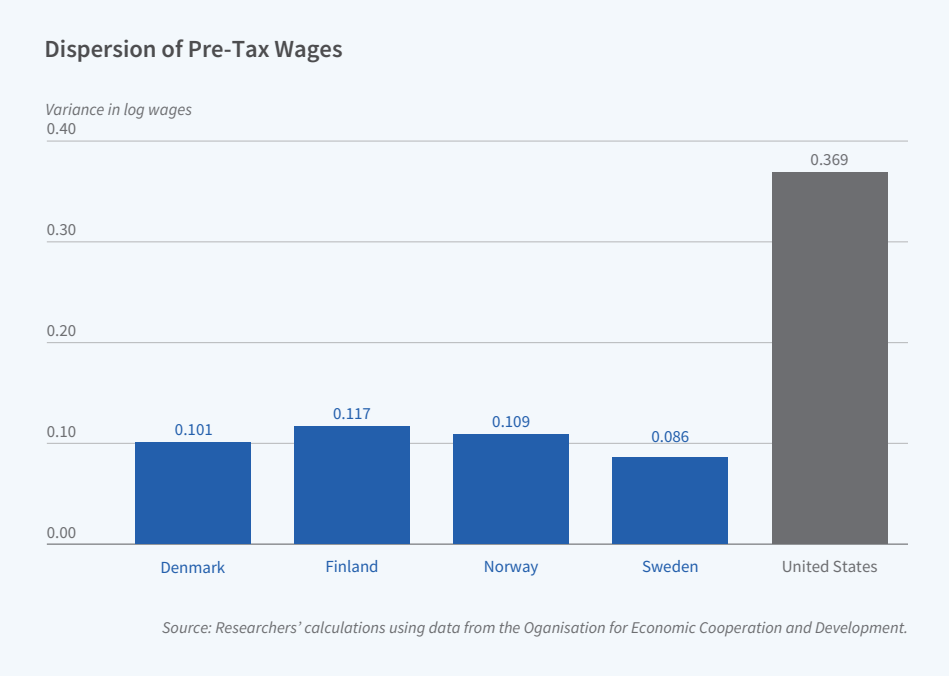
David Autor acknowledges support from the Hewlett Foundation, Google, the NOMIS Foundation, Schmidt Sciences, and the Smith Richardson Foundation. David Dorn acknowledges support from the University of Zurich's Research Priority Program "Equality of Opportunity." Gordon H. Hanson acknowledges support from the Hewlett Foundation and the Generation Foundation.

Wage Compression Drives Nordic Income Equality

Income inequality in the Nordic countries — Denmark, Finland, Norway, and Sweden — is substantially lower than in the United States or the United Kingdom despite similar levels of per capita income. The Gini coefficient for disposable income in Nordic countries averages 0.27, compared to 0.39 in the US and 0.36 in the UK. In Income Equality in the Nordic Countries: Myths, Facts, and Lessons (NBER Working Paper 33444), Magne Mogstad, Kjell G. Salvanes, and Gaute Torsvik analyze the underlying source of these disparities. They employ detailed microeconomic data and statistical decomposition techniques and consider distributional statistics on income, wages, working hours, education, and skills across these countries.

The researchers identify wage compression as the primary driver of Nordic income equality, accounting for about two-thirds of the disparity relative to the US. Hourly wage inequality is significantly higher in the US than in the Nordic countries. The variance of log hourly wages is three times higher and this explains over 70 percent of the difference in earnings inequality. Lower dispersion in working hours and a smaller covariance between hours and wages — high-wage workers work relatively fewer hours in the Nordic countries than in the US — account for the remainder.

Coordinated wage setting through collective bargaining is the key mechanism for wage compression. Nordic countries maintain strong wage coordination both within and across industries, with base wages set through centralized bargaining and supplemental local negotiations.



The greater income equality in Nordic countries than elsewhere is primarily the result of wage compression via coordinated collective bargaining rather than redistributive taxation.

This system compresses the wage distribution relative to labor productivity, particularly benefiting workers in lower-productivity firms and limiting wage premiums in high-productivity firms.

Contrary to popular belief, the Nordic wage compression does not primarily reflect a more equal distribution of skills or education. The distributions of cognitive skills, as measured by standardized tests, and educational attainment are relatively similar in the Nordic countries, the UK, and the US. Instead, the Nordic countries have substantially lower skill premiums. A 1 standard deviation increase in cognitive skills is associated with a 10–12 percent increase in hourly wages in Nordic countries, compared to a 23–24 percent increase in the UK and the US.

The researchers also challenge another common explanation—that Nordic family policies like subsidized childcare and parental leave significantly increase equality by supporting maternal employment and equalizing children's opportunities. They conclude that public spending on day care, education, and health programs has a relatively limited impact on the distribution of skills and labor market outcomes.

Redistribution through taxes and transfers, while contributing to lower income inequality in Nordic countries, explains only about one-third of the differences in inequality between them and the US.

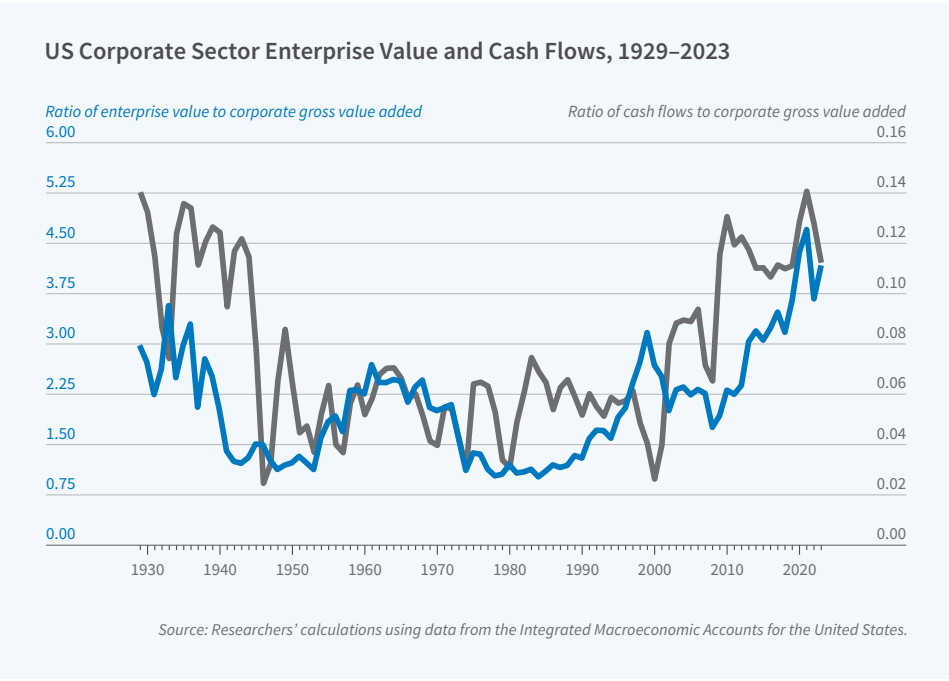
The researchers appreciate financial support from the Research Council of Norway and National Science Foundation grant 341250.

What Drives Stock Price Fluctuations? Expected Cash Flows Versus Expected Returns

One leading view in finance is that the high volatility of the stock market valuations of US corporations is driven by large fluctuations in expected returns. However, if expected returns are so volatile, why is the capital stock of the same US corporations relatively stable? In Reconciling Macroeconomics and Finance for the US Corporate Sector: 1929 to Present (NBER Working Paper 33459), researchers Andrew Atkeson, Jonathan Heathcote, and Fabrizio Perri seek to reconcile these seemingly discordant observations.

The researchers analyze the Integrated Macroeconomic Accounts (IMA) for the United States, a unified dataset developed jointly by the Bureau of Economic Analysis and the Federal Reserve Board. The IMA combines data on macroeconomic flows from the National Income and Product Accounts with comprehensive financial information from the Financial Accounts of the United States. It provides internally consistent income statements, cash flow statements, and market value balance sheets for major US economic sectors.

Using data from the IMA, the researchers construct new series for enterprise value and cash flows of US corporations, which are reproduced in the graph. IMA cash flows include all payouts to firms' stakeholders. IMA enterprise value tracks closely standard measures of US stock market valuations. However, relative to standard series of payouts used in the literature (i.e., dividends), the IMA cash flows display higher volatility and higher low frequency comovement with enterprise value. Because of these features, when the researchers use a standard valuation model to interpret the fluctuations in US enterprise value, they find that fluctuations in expected IMA cash flows have been the dominant driver of changes in valuations. Variations in expected rates of return play a smaller role.



Source: Researchers' calculations using data from the Integrated Macroeconomic Accounts for the United States.

Fluctuations in expected cash flows, not expected returns, are the primary drivers of volatility in US corporate valuations.

To understand the source of fluctuations in expected IMA cash flows, the researchers use the concept of "*factorless income,*" a pure rent paid to firm owners that is not attributable to either capital or labor inputs. This concept allows for a decomposition of corporate cash flows and valuations into components associated with earnings from physical capital and factorless income. Before World War II, the decline in the value of physical capital explained much of the expected cash flows and thus enterprise value. After World War II, however, fluctuations in the value of factorless income account for the majority of variation in expected cash flows and enterprise value.

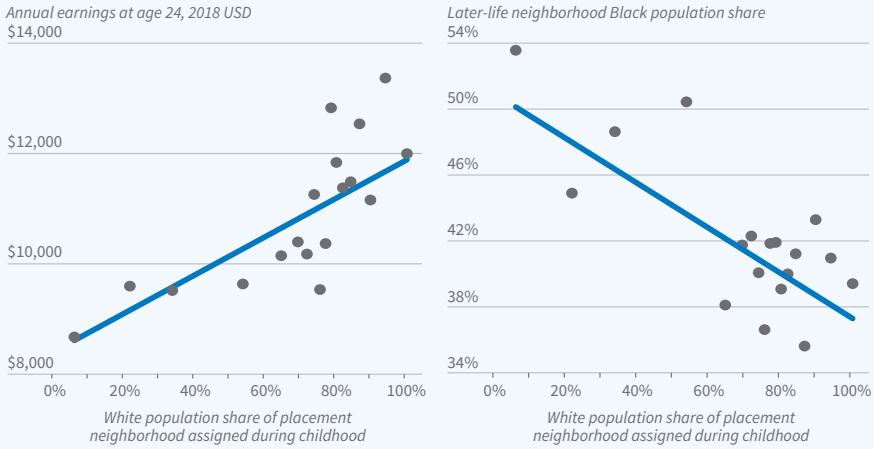
Since only minor fluctuations in expected returns are needed to understand fluctuations in valuations, once these fluctuations are inserted in a standard macro model of consumption and investment, the researchers find that the resulting capital stock can match the stable series of the observed capital stock of US corporations well. In particular, focusing on the post-1990s period, the researchers find that a modest decline in US expected growth is sufficient to explain declining risk-free rates and a return premium on corporate sector investments relative to risk-free rates that is quite stable at around 5 percentage points.

Long-Term Impacts of Residential Racial Desegregation Programs

Growing up in racially and economically segregated neighborhoods can have long-lasting effects. In 1966, Black families in Chicago sued the public housing authority over housing policies that segregated Black families. In response, the Chicago Housing Authority created a voucher program that would assist these families in moving to middle-income neighborhoods. Initially, families were relocated to predominantly White neighborhoods. After experiencing difficulty finding enough White neighborhoods willing to accept Black residents, program administrators began to relocate families to revitalizing Black neighborhoods as well.

In The Long-Run Effects of America's Largest Residential Racial Desegregation Program: Gautreaux (NBER Working Paper 33427), Eric Chyn, Robert Collinson, and Danielle H. Sandler compare the long-term outcomes of children who moved to predominantly White neighborhoods to those of children who moved to revitalizing Black neighborhoods. The authors find that children who relocated to predominantly White neighborhoods ("treated" children) had significantly higher adult earnings than those who moved to Black neighborhoods. They earned $16,910 more by age 28, $24,980 more by age 33, and $34,090 more by age 38.

This effect was greater for younger children, implying that their longer exposure to majority White and middle-class neighborhoods was important. Benefits of relocation to a predominantly White neighborhood shrink by between $338 and $473 per year of reduced exposure.



The Gautreaux Assisted Housing Program moved 7,000 Black families from predominantly Black urban neighborhoods in Chicago to new areas between 1976 and 1998.
Source: Researchers' calculations using data from the Gautreaux Assisted Housing Program and the US Census Bureau.

Black children who were relocated from housing projects to predominantly White neighborhoods grew up to have substantially more wealth, were more likely to marry, and were more likely to live in diverse neighborhoods than their peers who were moved to predominantly Black neighborhoods.

As adults, those who had moved to White neighborhoods as children were also more likely to be homeowners, married, and to live in neighborhoods with lower poverty rates. The authors' results also suggest that male children were 38 percent less likely to have died by 2019.

The program initially looked to place families in areas that were no more than 30 percent Black, which was a significant change from the highly segregated places where they had been living previously. This created lasting social effects: Children who moved to White neighborhoods were 2.1 percentage points more likely to marry a White partner in adulthood.

The authors find that while the children who moved to predominantly White neighborhoods in connection with this program experienced positive long-term effects, their parents experienced at most modest effects. While parents were more likely to live in racially diverse areas, their earnings were not significantly higher than those of parents who moved to predominantly Black neighborhoods.

The authors acknowledge financial support from the National Science Foundation, NSF Award Number 2018266.