



Documenting Decline in U.S. Economic Mobility

Citation

Katz, Lawrence F., and Alan B. Krueger. 2017. Documenting Decline in U.S. Economic Mobility. *Science* 356, no. 6336: 382-383.

Permanent link

<http://nrs.harvard.edu/urn-3:HUL.InstRepos:41626986>

Terms of Use

This article was downloaded from Harvard University's DASH repository, WARNING: This file should NOT have been available for downloading from Harvard University's DASH repository.

Share Your Story

The Harvard community has made this article openly available.
Please share how this access benefits you. [Submit a story](#).

[Accessibility](#)

POLICY FORUM

ECONOMICS

Documenting decline in U.S. economic mobility

Median incomes stagnate as inequality increases

By Lawrence F. Katz^{1,2} and Alan B. Krueger^{2,3}

Economists and other social scientists have long studied intergenerational income mobility, but consistent data linking adult incomes of children and their parents at similar ages over many generations have been unavailable, which thwarted attempts to study long-term trends. Chetty *et al.*'s study in this issue of *Science* (1) is therefore a tour de force for producing historically comparable estimates of absolute income mobility—the fraction of individuals in a birth cohort who earn, at age 30, more than their parents did at roughly the same age—over the post-World War II period. Their striking conclusion is that there has been a large decline in the rate of upward mobility across successive U.S. birth cohorts, from 92% of children born in 1940 earning more than their parents to only half of children born in 1984. Although Chetty *et al.* find that the slowdown in Gross Domestic Product growth has played a role, they conclude that faster economic growth is insufficient to restore mobility to its immediate postwar level in light of increased income inequality—a critical insight for policy and research.

Chetty *et al.* combine parent-child linked income information derived from Internal Revenue Service administrative tax data for recent cohorts with cross-sectional income data on representative samples of parents and children from Census Bureau household surveys for earlier cohorts, adjusting for consumer-price inflation. Their key methodological innovation is to combine information on the marginal income distributions of children and parents with plausible, empirically based assumptions about the stability of the joint distribution of parents' and children's income ranks (the copula) to generate estimates of intergenerational mobility even in years when longitudinal linked parent-child income data are unavailable. Their data and approach provide the most compelling evidence to date

that U.S. intergenerational absolute income mobility has declined substantially.

Although this dramatic decline is startling, the results fit well with what has previously been established regarding rising U.S. income inequality and stagnating real median earnings. The chart below makes this clear by displaying Chetty *et al.*'s estimate of absolute mobility and the difference between real median income of children and parents, both around age 30, for the 1940 to 1984 birth cohorts. The two series essentially move in parallel [correlation coefficient (r) = 0.995 (2)]. A \$10,000 decline in real median income of the children's generation relative to their parents' generation is associated with a 9.3

“...92% of children born in 1940 [earned] more than their parents [whereas] only half...born in 1984 [did].”

percentage point decline in absolute income mobility (3). Our inference from the chart is that the well-documented stagnant growth in U.S. real median household income beginning in the mid-1970s is central to the decline in absolute mobility. As the change in median income reflects changes in economic growth and inequality (the median is resilient to increased skewness in the right-tail of the distribution), it makes intuitive sense that median income growth across generations closely tracks income mobility, if the copula of parent and child income ranks stays stable.

An alternative concept of mobility is to change the reference group from one's own parents to the median parent in the parent's generation. Chetty *et al.* show that the share of children earning more than the median parent declined from 92% in the 1940 birth cohort to 45% in the 1984 cohort (4). The two mobility measures (earning more than one's own parent versus the median parent) move almost identically across cohorts (r = 0.998).

An advantage of measures using the median income of children and parents or the

share of children earning more than a given quantile in the parents' distribution is that such measures can be directly computed from standard public-use cross-sectional household survey data and do not require data that longitudinally link children to parents. Given that the children-parent cohort difference in median income accounts for 99% of the time-series variation in absolute mobility, little is apparently lost by examining trends in real median income rather than directly measuring mobility because Chetty *et al.* show the copula is stable for recent cohorts and not important for mobility trends for earlier cohorts. This need not have been the case and was unknown before Chetty *et al.*'s research. Further research could examine whether children-parent cohort differences in median income predict cross-state differences and regional trends in absolute mobility.

A focus on real median income by generation (as long as the copula remains stable) could allow one to extend the Chetty *et al.* study to examine absolute mobility for subgroups, such as African Americans and Hispanics, who are not currently identified in administrative tax data but are identified in census household survey data. Policies such as the Civil Rights Act likely had a substantial impact on economic mobility for African Americans. The finding that real median income increased more for African Americans than others from the early 1960s until the late 1970s likely implies that income mobility increased more for African Americans than for whites over this period (5, 6).

STAGNANT WAGES, POLICY OPTIONS

Why have real median earnings stagnated or fallen? One important factor involves slower growth of human capital investment, especially for children from low-income families. Growth of educational attainment has slowed across generations (7). Children born in the early 1940s had slightly over two more years of schooling, on average, at age 30 than individuals in their parents' generation, as compared with only 0.75 more years of schooling for children born in the early 1980s (8, 9). The declining educational advantage across generations has slowed income growth, and slower growth of the supply of more educated workers has been a key factor in rising wage inequality, the major factor in the decline in mobility documented by Chetty *et al.* (7, 10). The United States has gone from leading the world in educational attainment for those born in the mid-20th century to being in the middle of the pack for rich nations for those born since the 1970s (7). The rise in college completion rates in recent decades has been concentrated among families in the top half of the income distribution (11), making it difficult for children from low-income

¹Harvard University, Cambridge, MA 02138, USA. ²National Bureau of Economic Research, Cambridge, MA 02138, USA. ³Princeton University, Princeton, NJ 08544, USA. Email: akrueger@princeton.edu

families to surpass their parents' economic performance. Economic returns remain high for increased access to public colleges for less-advantaged students (12).

Labor demand shifts against middle-skill jobs in manufacturing, management, and clerical work—driven by information technology and globalization—have polarized the U.S. labor market and contributed to earnings declines for non-college-educated workers (13, 14). Increased domestic outsourcing and use of independent contractors have eroded traditional pathways of upward mobility through stable jobs with high-wage employers, as has the decline of unions (15, 16). Rising U.S. income inequality has been associated with rising residential economic segregation, reinforcing reduced economic mobility, given evidence of neighborhood effects on child long-run economic outcomes (17, 18). Declining U.S. geographic mobility contributes to reduced income mobility, as

education and training, and policies that promote entrepreneurship and competition. Investments that raise income growth for children in the bottom half of the income distribution are likely to have an outsized effect on raising income mobility. A range of policies has been proposed to raise educational attainment, from universal preschool to improved recruitment, retention, and professional development of teachers to greater access to public universities and investments in community college pathways to labor market skills. The United States underinvests in active labor-market policies and worker training relative to most high-income nations and would benefit from redirecting resources into effective employment and training programs, such as sectoral programs (20).

Policies with potential to raise wages for the bottom half of workers include increasing the minimum wage, strengthening workers' bargaining power, enforcing antidiscrimina-

tion laws, and preventing anticompetitive employer practices. Earnings for low-income households would increase if labor force participation were to increase. Subsidized day care for low-income households, for example, could increase labor supply. Employer-side wage subsidies for low-wage workers that phase out at higher wages could provide a flexible market-driven approach to increasing demand, employment opportunities, and wages for disadvantaged workers (21).

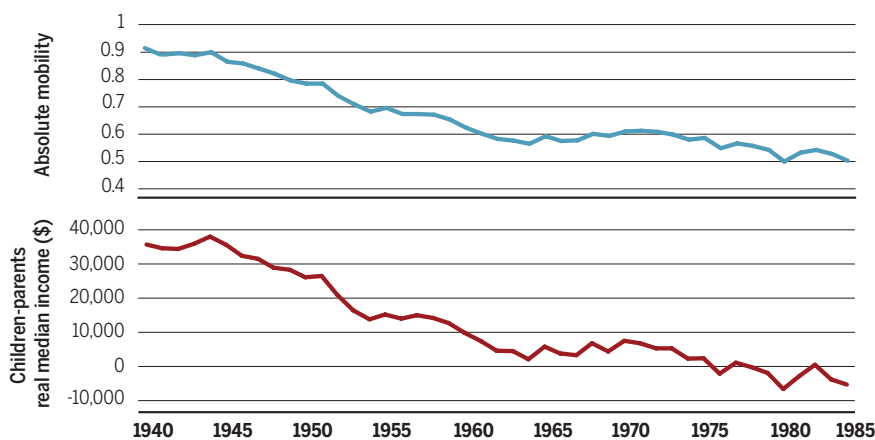
Progressive tax and transfer policies have potential to improve living standards and mobility. The Earned Income Tax Credit (EITC), for example, supplements after-tax disposable income for low-income families, and increased generosity of the EITC overall, particularly for the neglected group of low-income workers without dependent children, could help make work pay for young workers.

Growing U.S. economic residential segregation has increased the concentration of low-income families in high-poverty neighborhoods, which motivates attempts at place-based policies, such as Empowerment Zones (22). Evidence of long-run improvements in educational attainment, earnings, and tax payments for children who move from high-poverty to low-poverty areas at young ages suggests the value of expanding access to housing vouchers and assistance for low-income families with young children to move to higher-opportunity neighborhoods (17).

It is important for researchers to document impacts of the changing U.S. income distribution on societal well-being and economic opportunity, as Chetty *et al.* do in their excellent study. It is also imperative for researchers to provide scientific evidence on interventions that are likely to raise living standards and enhance economic mobility. ■

Mobility and child-parent income gap, linked over time

(Top) From online table 1, column CY, of Chetty *et al.* (see www.equality-of-opportunity.org/data/); (bottom) from table S1 in Chetty *et al.* (1). Based on authors' calculations (see SM).



moves from declining to expanding regions have been a source of economic vibrancy (19).

In our view, faster growth is necessary but not sufficient to restore higher intergenerational income mobility. Evidence suggests that, to increase income mobility, policymakers should focus on raising middle-class and lower-income household incomes. We characterize five classes of policy interventions to consider: (i) foster faster productivity growth; (ii) raise human capital, particularly for children from the bottom of the income distribution; (iii) raise wages and employment of low-income households; (iv) update taxes and transfers; and (v) make place-based policies and address geographic mobility.

U.S. productivity growth historically has been boosted by research and development, openness to global trade and competition, capital investment, relatively high levels of

education and training, and policies that promote entrepreneurship and competition. Investments that raise income growth for children in the bottom half of the income distribution are likely to have an outsized effect on raising income mobility. A range of policies has been proposed to raise educational attainment, from universal preschool to improved recruitment, retention, and professional development of teachers to greater access to public universities and investments in community college pathways to labor market skills. The United States underinvests in active labor-market policies and worker training relative to most high-income nations and would benefit from redirecting resources into effective employment and training programs, such as sectoral programs (20).

Policies with potential to raise wages for the bottom half of workers include increasing the minimum wage, strengthening workers' bargaining power, enforcing antidiscrimina-

REFERENCES AND NOTES

1. R. Chetty *et al.*, *Science* **356**, 398 (2017).
2. The cohort series of absolute mobility moves equally closely with the proportional gap (log ratio) of child-to-parent median real incomes ($r = 0.996$) [see the supplementary materials (SM)]. This scale-free measure could be a useful proxy for mobility across time periods and groups with different levels of income.
3. Result of bivariate ordinary least squares regression (see SM). The \$44,000 decline in the child-parent difference in median real income from the 1940 to the 1984 cohort predicts a 41% drop in absolute mobility, close to the actual decline documented by Chetty *et al.*
4. The share of children in a cohort earning more than the median parent can be computed from table S7 (1) by using the rank in the child income distribution required to earn more than the 50th percentile of the parental income distribution at www.equality-of-opportunity.org/data/. See SM.
5. D. Card, A. B. Krueger, *Am. Econ. Rev.* **83**, 85 (1993).
6. J. J. Donohue, J. J. Heckman, *J. Econ. Lit.* **29**, 1603 (1991).
7. C. Goldin, L. F. Katz, *The Race Between Education and Technology* (Belknap Press of Harvard Univ. Press, Cambridge, MA, 2008).
8. Estimates of mean years of schooling at age 30 for the United States by birth cohort are shown [see figure 7 in (9)] updated through the 1982 birth cohort using the Current Population Survey Outgoing Rotation Groups. See SM.
9. C. Goldin, L. F. Katz, *Brookings Pap. Econ. Act.* (fall), 135 (2007).
10. D. H. Autor, *Science* **344**, 843 (2014).
11. G. J. Duncan, R. J. Murnane, *Russell Sage J. Soc. Sci.* **2**, 142 (2016).
12. S. Zimmerman, *J. Labor Econ.* **32**, 711 (2014).
13. D. H. Autor *et al.*, *Am. Econ. Rev.* **96**, 189 (2006).
14. D. H. Autor *et al.*, *Am. Econ. Rev.* **103**, 2121 (2013).
15. D. Weil, *The Fissured Workplace* (Harvard Univ. Press, Cambridge, MA, 2014).
16. L. F. Katz, A. B. Krueger, "The rise of alternative work arrangements in the United States 1995–2015" (NBER Working paper no. 22667, National Bureau of Economic Research, Cambridge, MA, 2016).
17. R. Chetty *et al.*, *Am. Econ. Rev.* **106**, 855 (2016).
18. S. F. Reardon, K. Bischoff, *Am. J. Sociol.* **116**, 1092 (2011).
19. O. J. Blanchard, L. F. Katz, *Brookings Pap. Econ. Act.* **1992**, 1 (1992).
20. R. Hendra *et al.*, *Encouraging Evidence on a Sector-Focused Advancement Strategy: Two-Year Impacts from the WorkAdvance Demonstration* (MDRC, New York, 2016).
21. L. F. Katz, in *Generating Jobs: How to Increase Demand for Less-Skilled Workers*, R. Freeman, P. Gottschalk, Eds. (Russell Sage, New York, 1998), pp. 21–53.
22. M. Busso, J. Gregory, P. Kline, *Am. Econ. Rev.* **103**, 897 (2013).

SUPPLEMENTARY MATERIALS

www.sciencemag.org/content/356/6336/382/suppl/DC1

Published online 24 April 2017
10.1126/science.aan3264

Documenting decline in U.S. economic mobility

Lawrence F. Katz and Alan B. Krueger

Science **356** (6336), 382-383.

DOI: 10.1126/science.aan3264 originally published online April 24, 2017

ARTICLE TOOLS

<http://science.sciencemag.org/content/356/6336/382>

SUPPLEMENTARY MATERIALS

<http://science.sciencemag.org/content/suppl/2017/04/21/science.aan3264.DC1>

RELATED CONTENT

<http://science.sciencemag.org/content/sci/356/6336/398.full>

REFERENCES

This article cites 12 articles, 2 of which you can access for free
<http://science.sciencemag.org/content/356/6336/382#BIBL>

PERMISSIONS

<http://www.sciencemag.org/help/reprints-and-permissions>

Use of this article is subject to the [Terms of Service](#)

Science (print ISSN 0036-8075; online ISSN 1095-9203) is published by the American Association for the Advancement of Science, 1200 New York Avenue NW, Washington, DC 20005. 2017 © The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works. The title *Science* is a registered trademark of AAAS.