



# Economic Mobility in the United States

## Pew project team

**Susan K. Urahn**, *executive vice president*

**Travis Plunkett**, *senior director*

**Erin Currier**

**Joanna Biernacka-Lievestro**

**Diana Elliott**

**Sheida Elmi**

**Clinton Key**

**Walter Lake**

**Sarah Sattelmeyer**

## Russell Sage project team

**Sheldon Danziger**, *president*

**James Wilson**

**David Haproff**

## Authors

This report was written by Pablo A. Mitnik, research associate at Stanford University's Center on Poverty and Inequality, and David B. Grusky, professor of sociology and director of Stanford University's Center on Poverty and Inequality. All findings presented here are drawn from an Internal Revenue Service (IRS) Statistics of Income working paper, "New Estimates of Intergenerational Mobility Using Administrative Data," by Pablo A. Mitnik, Victoria Bryant, Michael Weber, and David B. Grusky.

The opinions expressed herein are solely those of the authors and do not represent the opinions of the Stanford Center on Poverty and Inequality, the U.S. Department of Health and Human Services, the Russell Sage Foundation, The Pew Charitable Trusts, or the Internal Revenue Service.

## Acknowledgments

The research on which this report is based benefited from insights and comments from Gerald Auten, Ivan Canay, Raj Chetty, James Cilke, Miles Corak, Robert Hauser, Michael Hout, Michelle Jackson, David Johnson, Nathaniel Hendren, Adam Looney, James Nunns, Fabian Pfeffer, Jeffrey Racine, Gary Solon, Eugene Steuerle, Florencia Torche, and Nicholas Turner. It also benefited from extensive methodological advice from Oscar Mitnik and Joao Santos Silva.

The authors are grateful to Yujia Liu for her expert research assistance in the initial stages of the project. Additionally, Pew and Russell Sage thank Pew staff members Daniel Berger, Mark Wolff, Sultana Ali, and David Merchant for providing valuable feedback on the report. They also thank Dan Benderly, Jennifer V. Doctors, Sara Flood, Bernard Ohanian, Lisa Plotkin, and Thad Vinson for their thoughtful suggestions and production assistance. Many thanks also to other current and former colleagues who made this work possible.

---

**For additional information, please visit:**  
[economicmobility.org](http://economicmobility.org)

---



---

**Cover Photo:** Getty Images

---

**Contact:** Mark Wolff, communications director  
**Email:** [mwolff@pewtrusts.org](mailto:mwolff@pewtrusts.org)  
**Project website:** [economicmobility.org](http://economicmobility.org)

**Contact:** David Haproff  
**Email:** [david@rsage.org](mailto:david@rsage.org)  
**Project website:** [russellsage.org](http://russellsage.org)

---

**The Pew Charitable Trusts** is driven by the power of knowledge to solve today's most challenging problems. Pew applies a rigorous, analytical approach to improve public policy, inform the public, and invigorate civic life.

## Contents

- 1 Overview
- 3 A new administrative data set
- 3 Measuring opportunity with the IGE
- 4 Approximately half of parental income advantages are passed on to children
- 5 The persistence of advantage is especially large among those raised in the middle to upper reaches of the income distribution
- 5 Children born far apart on the income distribution have very different economic outcomes
- 6 The IGEs of disposable income and total income do not differ much
- 6 Parental income matters more for men's earnings than for women's
- 8 Parental income matters more for women's chances of marriage and of marrying higher-earning partners
- 9 Conclusion
- 9 Appendix: Data and methodology
- 12 Endnotes

## Overview

The principle of equal opportunity holds so distinguished a place in U.S. history that it even appears in drafts of the country's founding documents.<sup>1</sup> This idea has been interpreted in various ways, but it is typically understood to mean that success should depend on hard work, that opportunities to get ahead should not be affected by the circumstances of birth, and that the labor market should allow for free and open competition among children from all social origins.

But is the United States realizing this frequently expressed commitment to equal opportunity? According to a recent survey, only 64 percent of Americans now believe that opportunities for mobility are widely available, the lowest percentage in the roughly three decades the question has been tracked.<sup>2</sup> Concern is also growing among scholars and policymakers that the ideal of equal opportunity, which has always been difficult to realize, is not being pursued as effectively as circumstances demand. This sense has been partly fueled by research, much of it by The Pew Charitable Trusts, showing that those born into the top or bottom of the economic ladder are quite likely to remain there as adults.<sup>3</sup>

Given the substantial body of research on economic mobility, one might imagine that little remains unknown. This is not the case. Although it is well established that a person's income is related to that of his or her parents, some uncertainty remains about exactly how strong this relationship is. Among studies that rely on the intergenerational elasticity (IGE), the estimates of mobility range widely, making it difficult to reach a consensus on how evenly or unevenly opportunity is distributed. (For an explanation of the IGE, see the sidebar on Page 2.)

In previous research, the IGE estimates have varied widely, with recent estimates based on administrative data ranging from as low as 0.34 to as high as 0.6.<sup>4</sup> Because of this variability, the actual level of economic persistence across generations remains unclear.<sup>5</sup>

This uncertainty arises in part because of limitations in the data used to study economic mobility. For example, survey data fail to represent high-income families, while some of the existing administrative analyses are based on relatively young adults who may have not yet hit their earnings stride.

These and other limitations can be addressed with a new data set based on tax data and other administrative sources that was developed by the Statistics of Income (SOI) Division of the Internal Revenue Service.<sup>6</sup> This data set, created to study tax policy and intergenerational mobility, allows for one of the most robust assessments of the intergenerational transmission of economic advantage yet conducted in the United States. It also lays the groundwork for assessing long-term mobility trends.

The research based on this new data set found that:

- **Approximately half of parental income advantages are passed on to children.** The IGE, when averaged across all levels of parental income, is estimated at 0.52 for men and 0.47 for women. These estimates are at the high end of previous estimates and imply that the United States is very immobile.<sup>7</sup>
- **The persistence of advantage is especially large among those raised in the middle to upper reaches of the income distribution.** The IGE among adults whose parents were between the 50th and 90th income percentiles is 0.68 for men and 0.63 for women. This means that approximately two-thirds of parental income differences within this region of the income distribution persist into the next generation.
- **Children born far apart in the income distribution have very different economic outcomes.** While a finding of unequal outcomes is not in itself surprising, the magnitude of this inequality has not been well appreciated:

The expected family income of children raised in families at the 90th income percentile is about three times that of children raised at the 10th percentile.

- **Parental income matters more for men’s earnings than for women’s.** The average earnings IGE for men (0.56) is more than 40 percent higher than that for women (0.32). Although both men and women benefit from being born into higher-income families, men benefit much more—at least when it comes to their own earnings.
- **Parental income matters more for women’s chances of marriage, and of marrying better-off partners.** The income IGE is large for men (0.52) mainly because children from higher-income families tend to have higher earnings as adults. For women, the income IGE is nearly as large (0.47), mainly because those from higher-income origins are more likely to be married in their late 30s—and to marry higher-earnings partners.

These results show that children born into lower-income families can expect very different futures relative to those from higher-income families. Given the country’s commitment to equality of opportunity, the findings may suggest the need for policies that increase economic mobility. Because a wide range of institutions affect mobility, including the family, schools, labor markets, and the tax system, many entry points are possible for developing such policies.<sup>8</sup> Although the findings of this report can inform public policy, they do not lead to particular policy prescriptions or indicate which of these many possible intervention points should be given priority.

## Understanding the IGE

The IGE measures the strength of the relationship between the income of parents and that of children.<sup>†</sup> It is not, strictly speaking, a measure of economic mobility, but it is often used as such because it refers to the persistence in economic standing across generations. If one compares, for example, children from families making \$50,000 per year with those from families making 20 percent more (\$60,000 per year), the IGE tells us how much of that 20 percent difference is preserved when the children become adults with incomes of their own. The IGE, which is typically between zero and one, thus indicates the share of parental economic advantage that is passed on to children.<sup>‡</sup> An IGE of zero implies that children from low- and high-income families have exactly the same expected income, with no inherited income advantage or disadvantage. An IGE of one, on the other hand, implies that parental advantages are fully passed on. This value means, for example, that a child raised in a family making \$60,000 per year has an expected income that is exactly 20 percent higher than that of a child raised in a family making \$50,000. The 20 percent difference in “origin incomes” is, in other words, fully preserved into the next generation.

The IGE thus measures the “persistence of advantage” from one generation to the next at all points along the economic ladder. Although it may seem counterintuitive to refer to “persistence of advantage” among low-income families, a positive IGE implies that even among such families, being raised with slightly more income does in fact typically provide an advantage.

Continued on the next page

The persistence of advantage in different regions of the parents' income distribution indicates the extent to which parental differences—whether among low-, middle-, or high-income parents—are passed on. This report therefore examines both the average IGE across the parental income distribution and the average IGE in specific regions of that distribution.

\* The IGE measures the percent increase in the expected income of children (when they are adults) given an additional percentage point of parental income.

† The IGE only provides an approximation of the share of parental economic advantage that is passed on to children. If the percent difference between the incomes of two families is not sufficiently small, then the IGE does not provide a good approximation of the share of that percent difference that persists into the children's generation. Whenever a "share interpretation" of the IGE is advanced, it is under the assumption that the difference in parental income is small enough for the approximation to hold.

## A new administrative data set

In past research on economic mobility and opportunity in the United States, longitudinal surveys have typically been used to track parent-child pairs over time. These studies have provided important information on the prevalence of mobility and on the extent to which economic advantage is passed from parents to children. As useful as these surveys are, they are necessarily limited because their sample sizes are small and many participants fall out of the surveys over time.

To address these and other limitations, this report relies on a new data set based on tax data and other administrative sources.<sup>9</sup> This data set has several advantages over others used to assess mobility and opportunity: The sample is large; high-income families are well represented; the income data are taken directly from tax returns and other administrative sources and are therefore likely to be more accurate than the self-reported data available in surveys; the data allow for analyses of both before- and after-tax income; and the economic status of parents can be more accurately assessed because their income is measured over many years.

The same advantages characterize some of the previous analyses of tax data.<sup>10</sup> Unlike those other analyses, this study has the additional benefit of measuring income and earnings when the children are between 35 and 38 years old, an age span that provides a better approximation to lifetime differences in income or earnings.<sup>11</sup> It also corrects for other problems affecting previous estimates of the IGE.<sup>12</sup>

## Measuring opportunity with the IGE

The intergenerational elasticity measures the percent increase in income that a child can expect to secure for every percent increase in the income of her or his parents. It is often interpreted as a measure of mobility. Under this interpretation, the IGE is inversely related to mobility: A high IGE indicates less mobility, and a low IGE more mobility.

The IGE also indicates the share of inequality between families that persists across generations. In a society with an IGE of one, inequality is perfectly reproduced: If two children are raised in families with, for example, a 10 percent difference in income (such as \$55,000 vs. \$50,000), the same 10 percent difference would be anticipated for their own future incomes. By contrast, when there is perfect equality of opportunity (an IGE of zero), both children would have the same expected income in adulthood.

The IGEs reported here are based on three income measures—total income, disposable income, and earnings—that are defined as follows:

- Total income includes all of a family’s taxable income plus any nontaxable interest.
- Disposable income refers to family income after federal taxes are subtracted and refundable credits are added.<sup>13</sup>
- Earnings, which are measured at the individual level within the children’s generation, refer to income from work as an employee (wages, salaries) as well as the labor income of the self-employed.

The IGEs for total and disposable income are well suited for measuring the persistence of income differences at the family level, while the IGE for earnings is appropriate for examining persistence at the individual level.

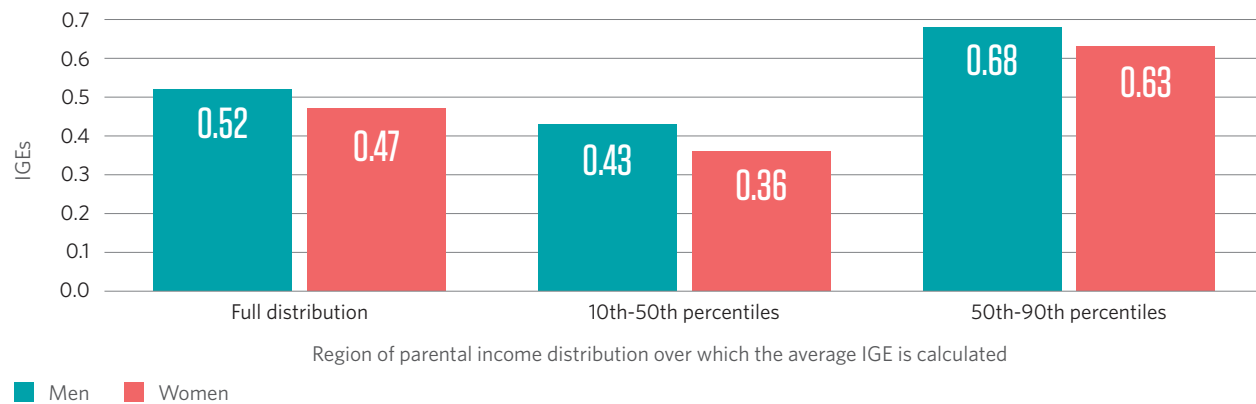
## Approximately half of parental income advantages are passed on to children

When averaged across all levels of parental income, the IGEs of total income are estimated at 0.52 for men and 0.47 for women.<sup>14</sup> (See Figure 1.) These estimates, which are at the high end of the existing range, imply that the United States is very immobile.

Figure 1

### The Payoff to Each Additional Percent of Parental Income Is Substantially Larger Among Better-Off Families

Total income IGE, by gender and parents’ income percentile



Note: The expected incomes of men and women (as functions of their parental income) are estimated nonparametrically. The average IGEs are computed from the resulting nonparametric curves using numerical approximations.

Source: Pablo A. Mitnik, Victoria Bryant, Michael Weber, and David B. Grusky, “New Estimates of Intergenerational Mobility Using Administrative Data,” Statistics of Income Division working paper, Internal Revenue Service (2015)

© 2015 The Pew Charitable Trusts



## The persistence of advantage is especially large among those raised in the middle to upper reaches of the income distribution

It is often assumed that the IGE is the same throughout the parental income distribution. If this were the case, children born into the bottom, middle, or top of the parental distribution would all see their incomes increase by the same percentage with each additional percent of parental income. But this assumption does not hold. As Figure 1 shows, the IGE differs substantially across levels of parental income, with intergenerational persistence especially pronounced between the 50th and 90th percentiles of parental income. The average IGE here, estimated at 0.68 for men and 0.63 for women, implies that approximately two-thirds of parental income differences in this region of the parental income distribution persist into the next generation.<sup>15</sup>

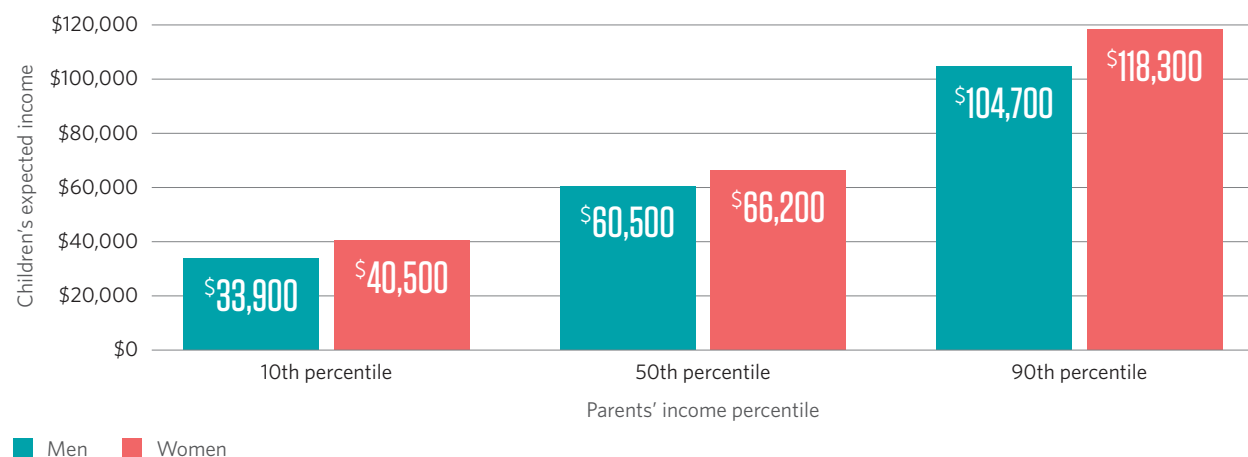
## Children born far apart on the income distribution have very different economic outcomes

These IGEs suggest that children raised in families that are far apart on the income distribution can expect very different economic futures when they become adults. As shown in Figure 2, children raised in low-income families will probably have very low incomes as adults, while children raised in high-income families can anticipate very high incomes as adults. The differences are extreme: The expected income of children raised in well-off families (90th percentile) is about 200 percent larger than the expected income of children raised in poor families (10th percentile) and about 75 percent larger than that of children raised in middle-class families (50th percentile).

Figure 2

### Children Raised at the Bottom, Middle, and Top of the Income Distribution Are Likely to Have Very Different Incomes as Adults

Expected total income, by gender and parents' income percentile



Note: The expected incomes of men and women (as functions of their parental income) are estimated nonparametrically. Income variables are expressed in 2010 dollars using the Current Price Index for All Urban Consumers—Research Series.

Source: Pablo A. Mitnik, Victoria Bryant, Michael Weber, and David B. Grusky, "New Estimates of Intergenerational Mobility Using Administrative Data," Statistics of Income Division working paper, Internal Revenue Service (2015)

© 2015 The Pew Charitable Trusts

## The IGEs of disposable income and total income do not differ much

Previous research has produced many estimates of the IGE of total income but none of the IGE of disposable income. This omission is surprising because disposable income is a better indicator of what families can spend, save, and invest. Is there more or less persistence under a disposable income measure compared with a total income measure? The simple answer is that the two measures in fact yield very similar results.<sup>16</sup> This finding is reassuring: It shows that, while one might have thought that researchers had been led astray by relying on the total-income IGE, this conventionally estimated IGE does not actually misrepresent in any fundamental way the persistence in economic standing across generations.<sup>17</sup>

The shift to disposable income does have a somewhat more pronounced effect on expected economic outcomes (as shown in Figure 2 for the total-income measure). When resources are measured in terms of disposable income, the expected income of children raised in well-off families (90th percentile) is 170 and 70 percent larger than that of children raised in poor (10th percentile) and middle-class (50th percentile) families, respectively.<sup>18</sup> This difference in results reflects the progressiveness of the tax system. (See the sidebar below for a related discussion.)

### Income Persistence and Recent Changes in Tax Policy

The comparison between disposable and total income IGEs provides some evidence that changes in tax policy reduced persistence at the bottom of the parental-income distribution.\*

The Earned Income Tax Credit (EITC) and other tax credit programs were very modest when the children in this study's sample were being raised, but they now provide more extensive benefits for low-income families (especially low-income single mothers).† If low-income tax credits, such as the EITC, disproportionately go to adults who were raised by very poor parents (as opposed to adult children of somewhat better-off parents), then the IGE at the bottom of the distribution should be lower for disposable income than for total income.

Although some evidence of just such a reduced elasticity shows up for women (results not shown here), the reduction proves to be quite small. This result nonetheless suggests that tax credits may have slightly lowered the amount of persistence among very low-income families.

\* See Mitnik et al., "New Estimates."

† Gordon Berlin, "Transforming the EITC to Reduce Poverty and Inequality," *Pathways* (Winter 2009): 28–32.

## Parental income matters more for men's earnings than for women's

Although men and women secure approximately the same income benefits from being raised in higher-income families (as indicated by their similarly sized total-income IGEs), the processes by which those benefits are obtained are different. This result is revealed by comparing the earnings IGEs for men and women: These IGEs speak to the extent to which advantage is transferred from parents to their children in the form of higher individual earnings (via wages or salary from employment). As shown in Figure 3, not only are the earnings of men higher than those of women at each level of parental income, but the average IGE for women (0.32) is more than 40 percent lower than that for men (0.56).<sup>19</sup> It follows that, although men and women both benefit from being born into higher-income families, men secure this advantage disproportionately via their own earnings.

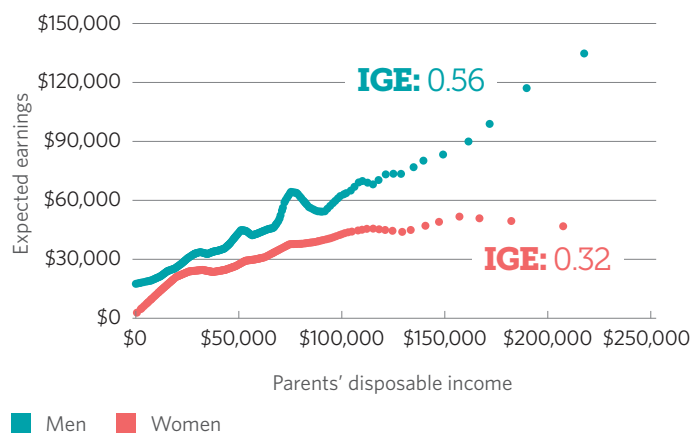
### The Advantages of Using Parental Disposable Income When Computing Earnings IGEs

Most of the research estimating earnings IGEs has compared sons' earnings with those of their fathers. This approach has two important shortcomings: It ignores men raised by single mothers (an increasingly common family form), and it does not take into account the contribution women make to family income through employment (which is increasingly large). The earnings analyses in this report are based, therefore, on earnings IGEs that compare children's earnings with their parents' disposable income. Because disposable income more closely reflects the actual money a family has to spend and includes the income generated by both parents, it is the appropriate basis for measuring the transmission of advantage reflected in the child generation's earnings.

Figure 3

## Transmission of Advantage Is Greater for Men's Earnings Than for Women's

Expected earnings as a function of parents' disposable income, by gender



Note: The expected earnings of men and women (as functions of their parental disposable income) are estimated nonparametrically. The points in the curves correspond to 199 equidistant quantiles of parental income. Income variables are expressed in 2010 dollars using the Current Price Index for All Urban Consumers—Research Series. Men and women without earnings are coded as having earnings of zero dollars. The figure shows expected earnings up to only \$250,000 of parental income.

Source: Pablo A. Mitnik, Victoria Bryant, Michael Weber, and David B. Grusky, "New Estimates of Intergenerational Mobility Using Administrative Data," Statistics of Income Division working paper, Internal Revenue Service (2015)

© 2015 The Pew Charitable Trusts

## Parental income matters more for women’s chances of marriage and of marrying higher-earning partners

Children benefit in many ways from being raised in better-off families. As just discussed, children from higher-income families tend to have higher earnings, an advantage that Figure 3 reveals to be greater for males than for females. But there are two other types of benefits: As parental income grows, the child’s probability of being married also increases, and so too does the expected amount of income that a spouse, when there is one, brings to the resulting family.

Figure 4, which plots the relationship between parental income and the probability of marriage (when men and women are in their late 30s), reveals an important gender difference. Up to \$50,000 of parental income, men’s and women’s probabilities grow at similar rates, but after that women’s probabilities grow faster.<sup>20</sup> As a result, men and women are equally likely to be married below the \$50,000 threshold, but above it, women are, on average, about 7 percent more likely than men to be married. This means that, although the “earnings payoff” to parental income is smaller for women, the “probability-of-marriage payoff” is larger.

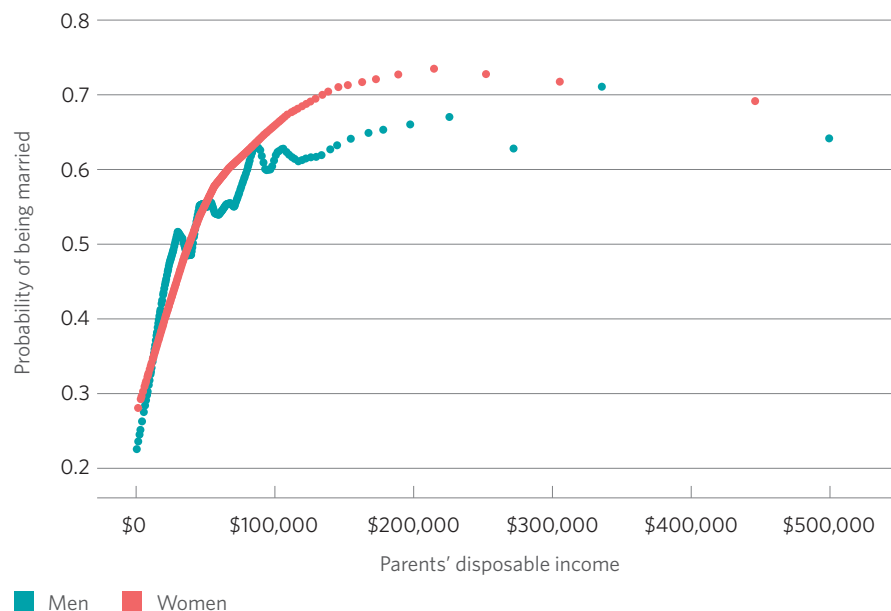
There is likewise a clear gender difference in the second type of benefit that comes from being raised in better-off families. When the IGE of spousal earnings is estimated, it is larger for women (0.34) than for men (0.26), meaning that the “marrying-well payoff” is greater for women than for men.<sup>21</sup>

Taken together, these findings indicate that, for women, the advantage to being born into a higher-income family comes especially in the form of elevated chances of marriage and of having a higher-earning partner. These two mechanisms explain why the income IGE for women is nearly as large as that for men even though their own-earnings IGE is substantially smaller.<sup>22</sup>

Figure 4

### Women Raised in Families With Over \$50,000 in Income Are More Likely Than Men to Be Married in Their Late 30s

Probability of being married as a function of parents’ disposable income, by gender



Note: Men’s and women’s probabilities of being married (as functions of their parental disposable income) are estimated nonparametrically. The points in the curves correspond to 199 equidistant quantiles of parental income. The income variable is expressed in 2010 dollars using the Current Price Index for All Urban Consumers—Research Series.

Source: Pablo A. Mitnik, Victoria Bryant, Michael Weber, and David B. Grusky, “New Estimates of Intergenerational Mobility Using Administrative Data,” Statistics of Income Division working paper, Internal Revenue Service (2015)

© 2015 The Pew Charitable Trusts

## Conclusion

This report examines the transmission of economic advantage in the United States with the first comprehensive set of IGE estimates based on tax and other administrative data. The analysis makes it clear that children born into different economic circumstances can expect very distinct economic futures. The degree to which family advantage is transmitted suggests that opportunities for economic success are very unequally distributed. Although no one would be surprised that children from higher-income families enjoy some advantages, this report reveals them to be dramatic. Given that these advantages likely arise from true inequalities of opportunity, the results presented here underscore the importance of policy efforts to increase mobility in the United States.

## Appendix: Data and methodology

The purpose of this section is to briefly describe the sample of children in the SOI Mobility (SOI-M) Panel, the biases that can be addressed with the SOI-M Panel, the definition of “parents” and parental income, the sources of the data making up the SOI-M Panel, the structure of the child records within the SOI-M Panel, and the income concepts used here. For further information on these and other topics, please see Pablo A. Mitnik et al., “New Estimates of Intergenerational Mobility Using Administrative Data,” SOI Working Paper, Statistics of Income Division, Internal Revenue Service (2015).

### Sample of children in the SOI-M Panel

The SOI-M Panel, which was planned and developed by the authors of the SOI report mentioned above, is available only for internal SOI use. All access to tax data was limited to SOI employees.

The backbone of the SOI-M Panel is the 1987-1996 Statistics of Income (SOI) Family Panel. The latter panel is based on a stratified random sample of 1987 tax returns with a sampling probability that increases with income. The SOI-M Panel includes all dependents found in the 1987 tax returns of the SOI Family Panel who were born between 1972 and 1975.

In any given year, some individuals fall below the filing threshold, meaning that they are not required to file tax returns. To ensure that the children from nonfiling families in 1987 are represented in the SOI-M Panel, the sample of children was supplemented with those (a) born between 1972 and 1975 and (b) listed as dependents in the returns of the “refreshment segment” of the Office of Tax Analysis (OTA) Panel (which represents those in the 1987 nonfiling population who appeared in a return in at least one year between 1988 and 1996).<sup>23</sup>

### The SOI-M Panel and bias

Because the SOI-M Panel is based on the SOI Family Panel, it can be used to analyze children who were 35 to 38 years old in 2010, reducing the life cycle bias that arises when income or earnings are measured too early or too late. The threat of attenuation bias is also reduced by using the SOI-M Panel because parental income can be measured with as many as nine years of information.<sup>24</sup>

### Parental income

The parent or parents of a child in the SOI-M Panel are defined as (a) whoever claims the child as a dependent in 1987 in a “single,” “household head,” “married filing jointly,” or “married filing separately” return and (b) whoever files a married filing separately return and is the 1987 spouse of a married filing separately parent as defined in (a) above. It is possible that one or both of a child’s parents will in subsequent years file with someone else (as

with most divorces). In that case, parental income is computed by pooling resources across the relevant returns, using the following rules:

- If the two parents divorce and each files jointly with a new spouse, parental income is defined as the sum of half the income appearing on each parent's return.
- If only one of the two parents files with a new person, that parent's imputed income (calculated again by dividing by two) is combined with the full income of the other parent.
- If a parent is single in 1987 but then subsequently marries, the pooled income of the parent and his or her new spouse is used.

## Data sources

The parental income data, which pertain to years when the children were 15 to 23 years old, were drawn from the SOI Family Panel, the OTA Panel, and 1997-98 population tax data. The income data for children (and their spouses when they filed married filing separately) were drawn from the 1998-2010 population tax data. These tax data were supplemented with additional information on earnings, self-employment income, and unemployment insurance income from W-2, 1040-SE, and 1099-G forms, respectively. For nonfiling children without any available administrative data, information on likely nonfilers from the Current Population Survey (CPS) was used. (See Table A.1.)

Table A.1

### Data Sources Used to Construct the SOI-M Panel

Data	Purpose
<b>Tax returns from SOI Family Panel (1987-96)</b>	Source of parental income data and parent-child Social Security links (with claimed children then traced forward)
<b>Tax returns from the refreshment segment of the OTA panel (1987-96)</b>	Recover "nonpermanent nonfilers" (i.e., individuals in 1987 nonfiling population who appeared in at least one 1988-96 return); source of parental income data
<b>Population of tax returns (1997-98)</b>	Source of parental income data
<b>Population of tax returns (1998-2010)</b>	Source of income data for children and their spouses (when "married filing separately"); source of children's marital status information
<b>W-2 forms (1999-2010)</b>	Source of gross ("Medicare") and taxable earnings of children, including nonfiler children
<b>1040-SE forms (1999-2010)</b>	Source of self-employment income
<b>Data Master File (DM-1)</b>	Source of demographic information (age of parents, and gender, age, and year of death of children)
<b>1099-G forms</b>	Source of unemployment income of children
<b>March supplement of Current Population Survey (CPS)</b>	Source of information for mean imputation of total income (nonfiler children without W-2 or unemployment insurance information), multiple imputation of marital status, total income, and spouse's earnings (same nonfiler children), and multiple imputation of marital status (nonfiler children with W-2 or unemployment insurance information).

## Structure of the SOI-M Panel and the late 30s sample

The SOI-M Panel represents all children born between 1972 and 1975 who were living in the United States in 1987. The panel, which covers the years from 1998 to 2010, comprises records representing a child-year. These records include parental information pertaining to the years in which the children were 15 to 23 years old. When children are 26 years old, they enter the panel and remain there until 2010 (or until they die). To minimize the effects of life cycle bias, all the analyses presented in this report refer to the “late 30s sample,” which pertains to SOI-M children who are 35 to 38 years old in 2010. The analyses presented here are based on their income or earnings reports in that year.

## Income concepts and measures

The analyses in this report employ three different income concepts: total income, disposable income, and earnings (which are only available for children). These concepts are not measured identically for parents and children due to differences in data availability. (See Table A.2.)

The income and earnings measures for children pertain to 2010 (when the children were between 35 and 38 years of age). The parental income data were drawn at the time the children were 15 to 23 years of age (and were then averaged over those nine years after expressing them in 2010 dollars using the Current Price Index for All Urban Consumers—Research Series).

Table A.2

## Income Concepts and Measurement

Income concept	Measurement
<b>Annual total family income</b>	
<b>Parents</b>	
<ul style="list-style-type: none"> <li>Return available in SOI panel (1987-96)</li> </ul>	Total income in Form 1040 plus nontaxable interest
<ul style="list-style-type: none"> <li>Return not available in SOI panel (1987-96)</li> </ul>	Values of total income plus nontaxable interest, as computed or imputed by OTA Panel
<ul style="list-style-type: none"> <li>Return available in population of tax returns</li> </ul>	Total income in Form 1040 plus nontaxable interest
<b>Children</b>	
<ul style="list-style-type: none"> <li>Filer</li> </ul>	Own and spouse's (if married filing separately) total income in Form 1040 plus nontaxable interest plus nontaxable unemployment insurance income (2009 only) plus nontaxable earnings
<ul style="list-style-type: none"> <li>Nonfiler                             <ul style="list-style-type: none"> <li>W-2 or unemployment insurance information available</li> <li>No W-2 or unemployment insurance information available</li> </ul> </li> </ul>	W-2 gross (“Medicare”) wages plus unemployment insurance income
	Mean or multiple imputation by gender and age using March CPS data
<b>Annual disposable income, parents and children</b>	Annual total income minus net federal taxes paid (including refundable tax credits)
<b>Annual individual earnings, children</b>	W-2 gross (“Medicare”) wages plus 65% of self-employment income
<b>Annual individual earnings, children's spouses</b>	W-2 gross (“Medicare”) wages plus 65% of self-employment income (filers' spouses); multiple imputation by gender and age using March CPS (nonfiler children without administrative information)

As indicated in Table A.2, the parents' total income was measured as the sum of (a) pretax "total income" in Form 1040 (which includes labor earnings, capital income, unemployment insurance income, and the taxable portion of pensions, annuities, and social security income) and (b) nontaxable interest. For filing children, total income also includes nontaxable earnings, which are the difference between gross ("Medicare") and taxable wages from the W-2 form.<sup>25</sup> For nonfiling children, the sum of earnings from the W-2 form and unemployment insurance income from the 1099-G form were used when available, and mean or multiple imputation (using the CPS) were applied when these administrative data were unavailable.

Disposable income was measured by subtracting net federal taxes (which include refundable credits) from total income. Throughout the analyses, this concept is referred to as "disposable income" but, as mentioned in endnote 13, state taxes are not subtracted and some transfers (e.g., Temporary Assistance for Needy Families) are excluded. Finally, the earnings of all children and of the spouses of filer children are measured as the sum of W-2 wages and 65 percent of self-employment income, with the other 35 percent assumed to be the return to capital. For the earnings of spouses of nonfiler children, imputation using data from the CPS was employed.

## Endnotes

- 1 Richard Reeves, "The Measure of a Nation," *Annals of the American Academy of Political and Social Science* 657, no. 1 (January 2015): 22-26, doi: 10.1177/0002716214546998.
- 2 Andrew Ross Sorkin and Megan Thee-Brenan, "Many Feel the American Dream Is Out of Reach," *The New York Times*, Dec. 10, 2014, <http://dealbook.nytimes.com/2014/12/10/many-feel-the-american-dream-is-out-of-reach-poll-shows>.
- 3 For Pew's reports on economic mobility, visit [www.economicmobility.org](http://www.economicmobility.org). The long-standing convention within the empirical literature is to treat economic mobility as a direct indicator of equality of opportunity. This interpretation ignores well-known caveats to the effect that some immobility may result from differences in talent and preferences that, although correlated with origins, might not be understood as producing inequality of opportunity (see, for example, Adam Swift, "Justice, Luck, and the Family: The Intergenerational Transmission of Economic Advantage From a Normative Perspective," in *Unequal Chances: Family Background and Economic Success*, eds. Sam Bowles, Herbert Gintis, and Melissa Osborne-Groves (New York: Russell Sage Foundation, 2005), 256-76; and John Roemer, "On Several Approaches to Equality of Opportunity," *Economics and Philosophy* 28, Special Issue no. 02 (July 2012): 165-200, doi:10.1017/S0266267112000156). The approach followed throughout this report is to interpret levels of economic mobility (or, rather, persistence) as first approximations of how unequal opportunities are (without reiterating the foregoing caveat).
- 4 These estimates come from the two best-known studies based on administrative data (see Bhashkar Mazumder, "Fortunate Sons: New Estimates of Intergenerational Mobility in the United States Using Social Security Earnings Data," *Review of Economics and Statistics* 87, no. 2 (2005): 235-55; and Raj Chetty et al., "Where Is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States," *Quarterly Journal of Economics* 129, no. 4 (2014): 1553-1623, doi:10.1093/qje/qju022). For reviews of studies estimating the IGEs, see Gary Solon, "Intergenerational Mobility in the Labor Market," in *Handbook of Labor Economics*, eds. Orley C. Ashenfelter and David Card (Amsterdam: North-Holland, 1999), 3A, 1761-1800; and Miles Corak, "Do Poor Children Become Poor Adults? Lessons From a Cross Country Comparison of Generational Earnings Mobility," Discussion Paper No. 1993, Institute for the Study of Labor (March 2006), [http://www.iza.org/en/webcontent/publications/papers/viewAbstract?dp\\_id=1993](http://www.iza.org/en/webcontent/publications/papers/viewAbstract?dp_id=1993).
- 5 For a detailed analysis of the previous literature, see Pablo A. Mitnik et al., "New Estimates of Intergenerational Mobility Using Administrative Data," SOI working paper, Statistics of Income Division, Internal Revenue Service (2015).
- 6 All analyses presented here are drawn from Pablo A. Mitnik et al., "New Estimates of Intergenerational Mobility Using Administrative Data," SOI working paper, Statistics of Income Division, Internal Revenue Service (2015). See the Appendix for additional information on data sources.
- 7 See endnote 14 for a precise interpretation of the average IGEs.
- 8 For a discussion of the many institutions and policies that affect mobility, see Andrea Ichino, Loukas Karabarbounis, and Enrico Moretti, "The Political Economy of Intergenerational Income Mobility," *Economic Inquiry*, 49, no. 1 (2010): 47-69, doi:10.1111/j.1465-7295.2010.00320.x. See also Susan Mayer and Leonard Lopoo, "Government Spending and Intergenerational Mobility," *Journal of Public Economics*, 92 (2008): 139-58, doi:10.1016/j.jpubeco.2007.04.003; C. Eugene Steuerle, *Mobility, the Tax System, and Budget for a Declining Nation*, report to the Finance Committee, U.S. Senate (July 2012); Adam Carasso, Gillian Reynolds, and C. Eugene Steuerle, *How Much Does the Federal Government Spend to Promote Economic Mobility and For Whom?* The Pew Charitable Trusts (2008), <http://>



www.economicmobility.org/reports\_and\_research; Chetty et al., “Where Is the Land of Opportunity?”; and Gary Solon, “A Model of Intergenerational Mobility Variation Over Time and Place,” in *Generational Income Mobility in North America and Europe*, ed. Miles Corak (Cambridge: Cambridge University Press, 2004), 38–47.

- 9 Only SOI personnel had access to the microdata. All analyses presented here are reported in the SOI working paper (Mitnik et al., “New Estimates”).
- 10 See Chetty et al., “Where Is the Land of Opportunity?”; and Raj Chetty et al., “Is the United States Still a Land of Opportunity? Recent Trends in Intergenerational Mobility,” *American Economic Review* 104, no. 5 (2014): 141–47, doi:10.1257/aer.104.5.141.
- 11 For a discussion of the “life cycle bias” that obtains if children are observed when they are too young, see, for instance, Mazumder, “Fortunate Sons.”
- 12 This study further improves upon previous ones by (a) avoiding the selection bias that arises when children with little or no income or earnings are eliminated from the sample, (b) estimating the IGEs of expected income or earnings (rather than the IGEs of the geometric mean), and (c) employing nonparametric methods. See Mitnik et al., “New Estimates.”
- 13 Because state taxes are not available in the tax returns and the total-income measure does not include some transfers (e.g., Temporary Assistance for Needy Families), our measure is an imperfect one of disposable income.
- 14 This result can be interpreted in terms of random draws of pairs of families with very similar (but different) incomes. Namely, if two families that do not differ much in total income are randomly selected from anywhere in the parental income distribution, the expected IGE (over those random draws) is about one half. When we report the average IGEs for a particular region of the parental income distribution, the same interpretation applies (by imposing the proviso that draws are restricted to the relevant region of the parental income distribution).
- 15 It bears noting that the lower IGE for women at the 10th to 50th percentiles of parental income (0.36) does not imply that women raised in these families are especially mobile relative to women raised in upper-income families. This result speaks instead to the relatively more equal opportunities enjoyed by two women raised in this region of the distribution. Consider, for instance, the case of two children from low-income families, one raised by a family with \$30,000 in income and another raised by a family with \$35,000 in income. The average IGE of 0.36 implies that about a third of the corresponding percent income difference between these two families will be passed on to the children as adults. It does not, however, tell us where those adult children end up on the income ladder. Even if their incomes are relatively similar, they could both remain in the bottom half. The available research on relative economic mobility across generations shows that individuals raised at the bottom are in fact highly likely to remain there. See, for example, The Pew Charitable Trusts, *Pursuing the American Dream: Economic Mobility Across Generations* (July 2012), <http://www.pewstates.org/research/reports/pursuing-the-american-dream-85899403228>.
- 16 The average IGEs of disposable income are estimated at 0.50 for men and 0.46 for women; the corresponding IGEs for total income are 0.53 for men and 0.47 for women. These analyses are based on a sample that is slightly different from that employed in the previous and next sections. For details, see Mitnik et al., “New Estimates.”
- 17 Because of the limitations in our measure of disposable income (see endnote 13), the results we obtain are reassuring but provide less than definitive evidence.
- 18 When a measure of disposable income is used, the children’s expected values are \$31,300 (10th percentile), \$53,600 (50th percentile), and \$86,300 (90th percentile) for men and \$37,000 (10th percentile), \$55,800 (50th percentile), and \$100,400 (90th percentile) for women.
- 19 Men and women without earnings are coded as having earnings of zero dollars.
- 20 The average elasticity of the probability of marriage with respect to parental disposable income is 0.24 for men and 0.29 for women.
- 21 Spouses without earnings are coded as having earnings of zero dollars. These elasticities pertain to the relationship between the income of the child’s parents and the earnings of his or her spouse.
- 22 Ideally, this analysis would have been carried out in terms of “life partners” rather than spouses, but the constraints of tax data necessitated a reliance on marital status.
- 23 For details on the 1987 panels, see James Nunns et al., *Treasury’s Panel Model for Tax Analysis*, Working Paper 3, Department of the Treasury (July 2008). For comparisons between the sample used here and corresponding data from the Current Population Survey, see Mitnik et al., “New Estimates.”
- 24 For a detailed discussion of these biases, see, for instance, Mazumder, “Fortunate Sons.”
- 25 Nontaxable earnings are not available for the 1987–98 parental data.



[pewtrusts.org](http://pewtrusts.org)



[russellsage.org](http://russellsage.org)

---