

Economic Mobility: A State-of-the-Art Primer

(Part 1: Contemporary Levels of Mobility)

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1. Introduction

The Many Facets of Mobility

Narrowing the Scope

A New Comprehensive Suite of Mobility Estimates

2. Distributional Measures of Economic Mobility

- Rather than starting with the most commonly used mobility measures, which summarize the association between parent and child incomes in a single number, it makes sense to begin with more disaggregated measures.
- A single-number summary provides a convenient overall picture of mobility, but at a cost.
- Namely, it is often of interest whether mobility is high or low for children depending on the level of their parental income, and we often care specifically about upward or downward mobility.
- Table 1 summarizes the results of the new mobility analyses in this section.

Table 1: Summary of Key Distributional Measures of Economic Mobility

Measure	Men's Earnings	Women's Earnings	Family Income
Relative Mobility			
Of those with parents in the bottom fifth, % in bottom fifth as adults	44	30	46
Of those with parents in the top fifth, % in top fifth as adults	50	33	41
Of those with parents in the middle fifth, % below the middle fifth as adults	37	37	34
Of those with parents in the middle fifth, % above the middle fifth as adults	31	42	43
Absolute Mobility			
% with real income higher than their parents' at the same age	60	76	73
Sibling Similarity			
Of those in the bottom fifth with a same-sex sibling, % of siblings in the bottom fifth	35	34	43
Of those in the top fifth with a same-sex sibling, % of siblings in the top fifth	48	32	40

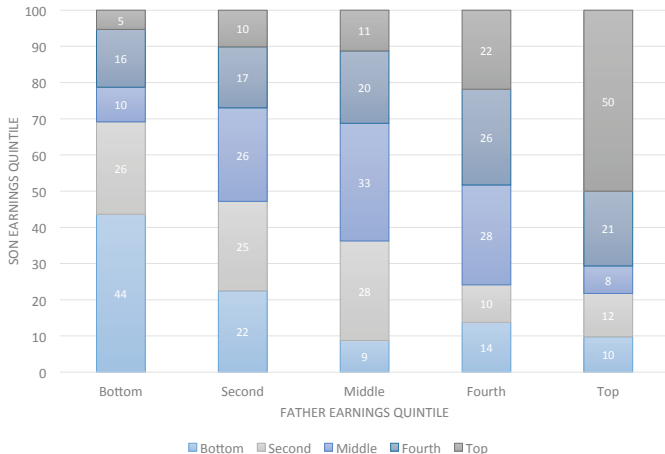
Source: Winship (2017).

Note: Earnings estimates compare grown children to their same-sex parent or sibling. Family incomes are adjusted for family size. Incomes are adjusted for inflation, which matters only in the absolute mobility analyses.

Relative Mobility - The Transition Matrix

- Figure 1 displays the first original PSID mobility estimates in this primer.
- It presents a quintile-based transition matrix graphically.
- Each bar represents a different quintile of male earnings, with the leftmost bar representing the poorest fifth of fathers and the rightmost bar the richest fifth.
- Within each bar, the segments show the percentage of children raised in a given fifth of father earnings who ended up in each fifth of grownson's earnings.
- The percentages displayed within each bar add to 100.

Figure 1: Percent of Grown Sons in Each Fifth of Male Earnings by Each Fifth of Father Earnings

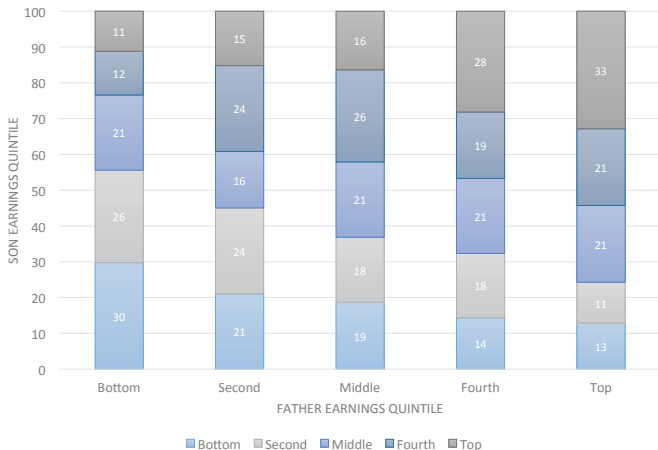


Note: The sample includes the 442 father–son pairs where fathers had at least 8 years of non-missing earnings (out of a maximum of 15) and sons had at least 9 years. See Appendix 1 for methodological details.

Source: Winship (2017). Author's analysis of the Panel Study of Income Dynamics (PSID)..

- Figure 2 provides a transition matrix comparing mothers' and daughters' earnings.
- Once again, I use the sample that produced the lowest estimates of relative mobility in Section 3 below.
- Women appear to have significantly more earnings mobility than men do.
- About one-third of daughters with mothers in the bottom or top fifth of maternal earnings ended up in the same place.
- While only 31 percent of sons with the lowest earning fathers made it to the middle class, 44 percent of daughters with the lowest earning mothers did.

Figure 2: Percent of Grown Daughters in Each Fifth of Female Earnings by Each Fifth of Mother Earnings



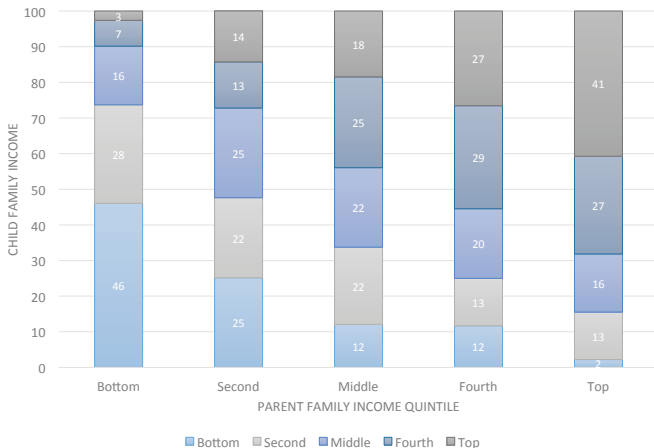
Source: Winship (2017). Author's analysis of the Panel Study of Income Dynamics (PSID).

Note: The sample includes the 854 mother–daughter pairs where mothers had at least 5 years of non-missing earnings (out of a maximum of 15) and daughters had at least 7 years. See Appendix 1 for methodological details.



- Figure 3 reveals that 46 percent of children raised in the bottom fifth of permanent parental income remained in the bottom fifth of permanent income in adulthood.
- Three in four ended up in the bottom two-fifths of family income, meaning that only one in four poor children made it to the middle class in adulthood.
- Only one in 33 made it to the top fifth.
- Figure 3 also shows that 41 percent of children starting out in the top fifth remained there as adults, and two-thirds ended up in the top two quintiles.
- Barely any of these children ended up in the bottom fifth as adults.
- Within the middle three quintiles, mobility is once again more common than at the ends of the parental income distribution.

Figure 3: Percent of Grown Children in Each Fifth of Family Income by Each Fifth of Parental Income



Source: Winship (2017). Author's analysis of the Panel Study of Income Dynamics (PSID).

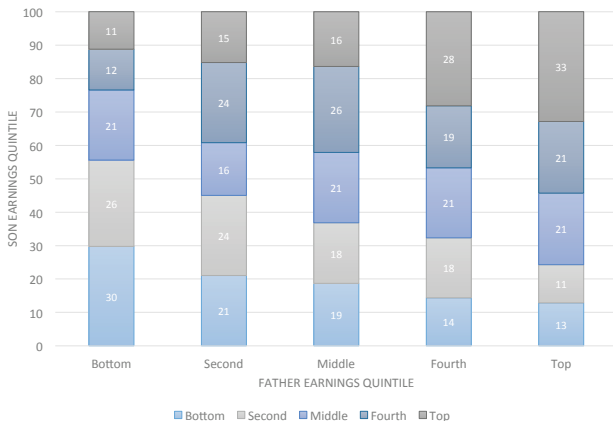
Note: The sample is restricted to the 719 parent-child pairs where parents had at least 10 years of non-missing income and children had at least 9 years. Incomes are adjusted for family size. See Appendix 1 for methodological details.

Relative Mobility - Other Measures

Absolute Mobility - Surpassing Parental Income

- Figure 4 displays the share of adults in the PSID who, around age 40, exceed their parents' earnings or income around the same age.
- The bar on the left side of the chart indicates that 60 percent of men exceed their father's earnings.
- In contrast, only one in four women exceed paternal earnings.
- When compared against their mother's earnings, however, women do much better—three in four exceed their maternal earnings.
- The greater upward absolute mobility of women when compared with their same-sex parent is unsurprising.
- Labor force participation among women has increased and occupational segregation has declined over recent generations.

Figure 4: Percent of Grown Children Surpassing the Income of Parents



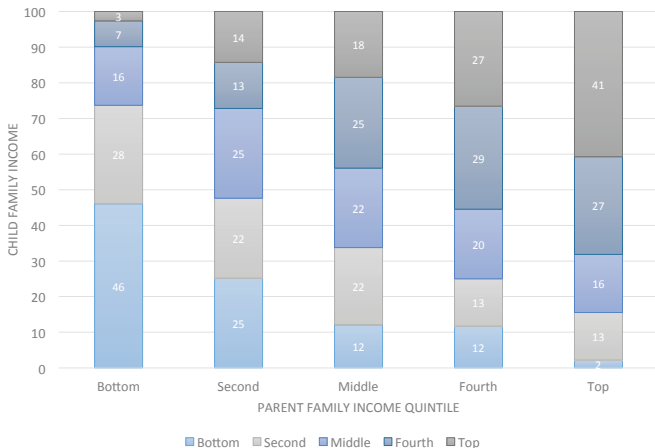
Note: The sample begins with all parent–child pairs with income measured at either age 38, 39, 40, 41, or 42, and that single year of income is used (starting with age 40 and moving outward if unavailable). It then is restricted to pairs in which the parent turned 40 after 1974 and the child before 2006. Up to seven years of income are then averaged, using every other year, within a 13-year window. Family incomes are size-adjusted and all earnings and income measures are adjusted for inflation. Sample sizes are 129 for sons, 175 for daughters, and 308 for pooled family income. See Appendix 1 for methodological details.

Source: Winship (2017). Author's analysis of the Panel Study of Income Dynamics (PSID).

The Chetty et al. Study

- In Figure 5, I provide a reconciliation between the Chetty and PSID results.
- After adjusting incomes for family size, Chetty and his team report that the absolute mobility rate for the 1984 birth cohort is 60 percent rather than 50 percent (shown in the second bar in Figure 5).
- To assess the importance of the other differences, I re-ran my PSID analyses to produce estimates more comparable to those of Chetty and his team.
- Specifically, I used single-year measures of pre-transfer family income, taken at age 30 (or 28, 29, 31, or 32), and I adjusted incomes for inflation in the same way that they did.
- To ensure a sufficient sample size in my data I pool children born from 1980 to 1982.
- They turned 30 between 2010 and 2012, the last year for which income data is available in the PSID.

Figure 5: Percent of Grown Children Surpassing the Income of Parents, Chetty vs PSID



Note: All income measures are adjusted for inflation, using the indicated price deflator (CPI-U-RS or PCE) or the CPI-U-RS if not otherwise indicated.

Source: Winship (2017). Author's analysis of the Panel Study of Income Dynamics (PSID) and Chetty et al. (2016), Online Data Tables 1 and 4. See the text and Appendix 1 for methodological details.

Absolute Mobility - Other Measures

Sibling Similarity

- Figures 6 through 8 present sibling transition matrices for brother earnings, sister earnings, and sibling family incomes.
- In all of these analyses, adults are linked each year to the same-sex sibling who is closest in age to them.
- The samples used in these analyses were those that produced the strongest sibling associations in the analyses in Section 3.
- Of importance, note that men and women who do not have siblings are excluded from these analyses, so that, for instance, the bottom quintile represents the poorest fifth of men or women among those with a same-sex sibling.
- Statements below about the percent of men or women with a brother or sister in some quintile should be interpreted as the share of men or women whose same-sex sibling is in some quintile among those who have a same-sex sibling.
- The charts confirm the general impression of limited mobility that the parent–child transition matrices conveyed.



Figure 6: Percent of Brothers in Each Fifth of Male Earnings by Each Fifth of Own Earnings

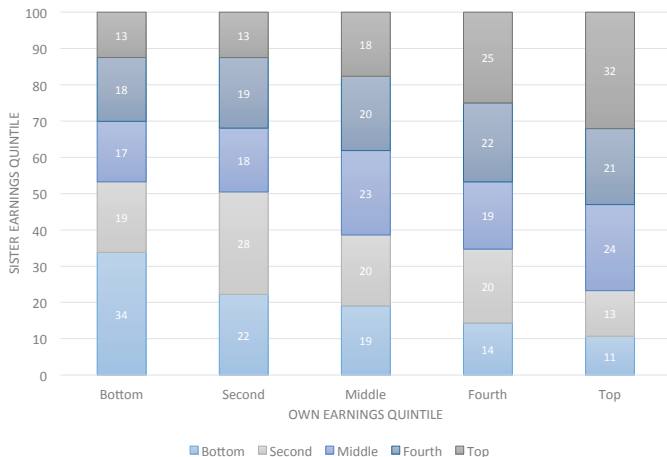


Note: The sample is restricted to the 755 brother pairs where each had at least 9 years of non-missing earnings. Quintiles are estimated using only brothers. See Appendix 1 for methodological details.

Source: Winship (2017). Author's analysis of the Panel Study of Income Dynamics (PSID).

- In contrast, sisters appear not to be as similar to each other in terms of earnings as brothers are.
- Figure 7 displays many values close to 20, indicating substantial mobility.
- If shared influences had no effect on earnings, all of the labels in Figure 7 would be 20.
- There is clearly a tendency for poor women to have poor sisters and for well-off women to have well-off sisters, but family background seems to affect women less than it does men.

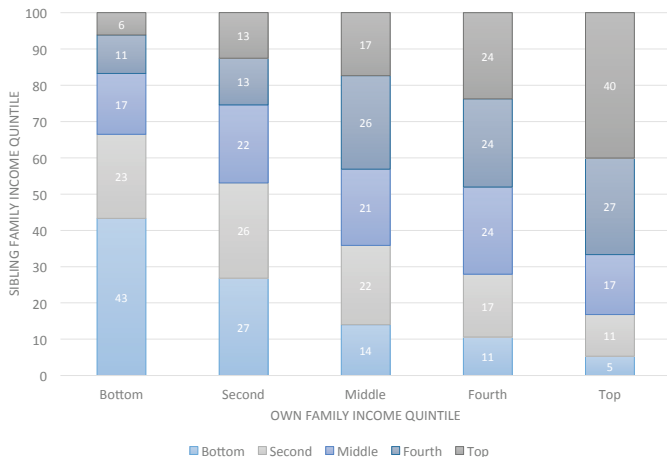
Figure 7: Percent of Sisters in Each Fifth of Female Earnings by Each Fifth of Own Earnings



Note: The sample is restricted to the 1,078 sister pairs where a woman had at least 4 years of non-missing earnings and her sister had at least 5. Quintiles are estimated using only sisters. See Appendix 1 for methodological details.
Source: Winship (2017). Author's analysis of the Panel Study of Income Dynamics (PSID).

- Figure 8 indicates that in terms of family income rank, siblings resemble each other about as closely as or less than parents and children did in Figure 3.
- That suggests that after taking account of the things siblings share that are related to their parental income rank—whether investment, genes, or values—the rest of what they share is also substantively important in affecting income rank.
- If parental income rank (or its correlates) was the only thing shared between siblings that affected child income ranks, then some imperfect association between the income ranks of parents and one child, combined with an imperfect association between the income ranks of parents and a second child would produce a weaker association between the income ranks of the two children.

Figure 8: Percent of Siblings in Each Fifth of Family Income by Each Fifth of Own Family Income



Source: Winship (2017). Author's analysis of the Panel Study of Income Dynamics (PSID).

Note: The sample is restricted to the 1,788 sibling pairs where an adult had at least 4 years of non-missing income and the sibling had at least 9 years. Brothers and sisters are never compared to each other. Incomes are adjusted for family size. Quintiles are estimated using only adults with same-sex siblings. See Appendix 1 for methodological details.

Summary Measures of the Persistence of Childhood Economic Inequality

Persistence of Relative Economic Inequality - The Intergenerational Rank Association

- These summary measures can describe the extent to which relative childhood gaps are reduced by relative mobility or the extent to which absolute childhood gaps are reduced by absolute mobility.
- Many analysts characterize an indicator of high persistence as evidence of “low mobility,” but this convention is imprecise.
- In the case of relative mobility, where someone must move down for someone else to move up, inequality-reducing mobility (low persistence) is synonymous with “high” mobility.
- But absolute mobility can be “high” without reducing childhood inequalities.
- If economic growth raises everyone’s income by 20 percent but childhood gaps between rich and poor children are 20 percent larger in adulthood, then childhood inequality will be persistent even as upward absolute mobility is substantial for rich and poor alike.
- Table 2 summarizes the key results from the new estimates

Table 2: Summary of Key Measures of Persistence

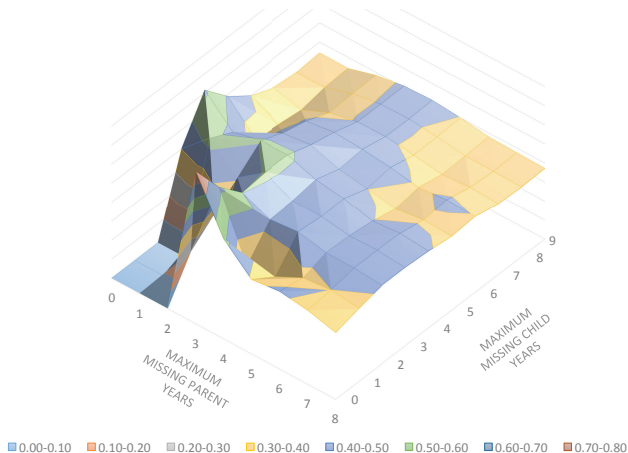
Measure	Men's Earnings	Women's Earnings	Family Income
Persistence of Relative Inequality			
Intergenerational rank association (rank-rank)	.44-.52 (.51)	.31-.40 (.37)	.51-.53 (.53)
Persistence of Absolute Inequality			
Intergenerational elasticity	.44-.78 (.77)	.27-.54 (.40)	.59-.66 (.66)
Intergenerational correlation	.38-.51 (.48)	.35-.42 (.39)	.51-.53 (.53)
Sibling Similarity			
Sibling rank association	.38-.39 (.39)	.24-.32 (.31)	.36-.43 (.43)
Sibling correlation	.33-.45 (.39)	.22-.31 (.30)	.35-.45 (.45)

Source: Winship (2017).

Note: Estimates are preferred ranges and, in parentheses, preferred point estimates. See the text for selection criteria. Women's earnings compare women to their mothers or sisters. Family incomes are adjusted for family size. All earnings and incomes are adjusted for inflation.

- The analyses in this primer seek to offer a defensible range of estimates for various mobility measures that can guide policymaking and future research.
- After examining many charts like Figure 9 for many mobility measures, I settled on a range bounded by the highest association among the samples with at least 200 parent–child pairs and the highest association among the samples with 50 to 199 parent–child pairs.
- I also offer a single preferred estimate, averaging the two highest IRA estimates among samples with at least 50 parent–child pairs.

Figure 9: Changes in the Intergenerational Rank Association (IRA) for Male Earnings as the Number of Years of Missing Earnings is Allowed to Vary

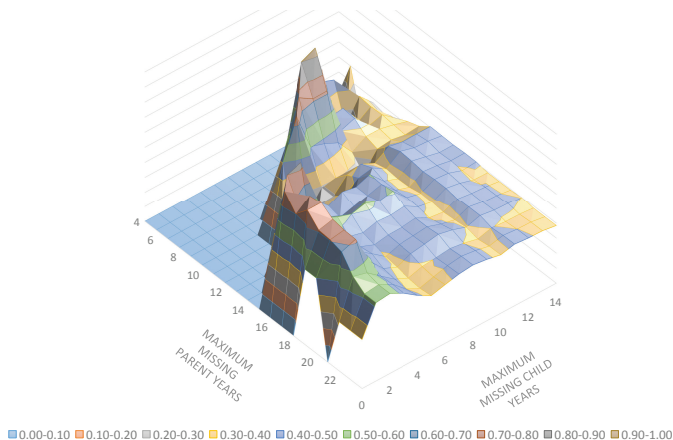


Source: Author's analysis of the Panel Study of Income Dynamics (PSID). Each parent or child may have up to 15 years of income within a span of up to 31 years. See Appendix 1 for methodological details.



- For technical reasons discussed in Appendix 1, my analyses only use every other year of income available within a window of up to 31 years.
- As a check on whether this decision prevents me from obtaining more reliable estimates, Figure 10 shows the same surface chart as Figure 9 but this time averaging all possible years within the 31-year range.
- The Archbridge Institute — Economic Mobility in America March 2017 — 38 west side of the chart is largely comprised of missing samples; few parent–child pairs have more than 20 years of parent and child income.⁵²

Figure 10: Changes in the Intergenerational Rank Association (IRA) for Male Earnings as the Number of Years of Missing Earnings is Allowed to Vary (Using Up to 31 Years of Income)



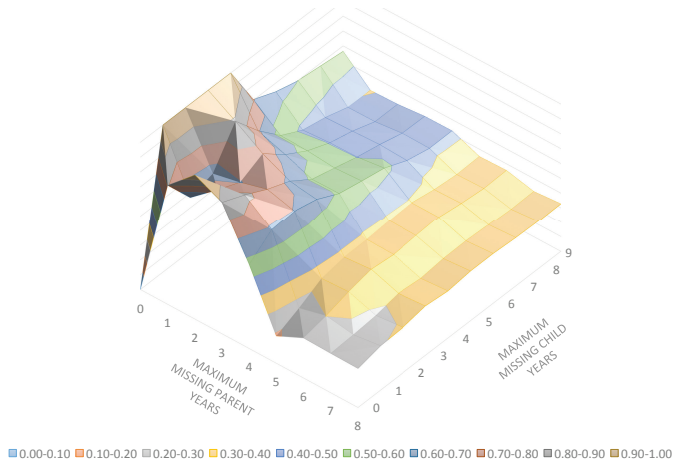
Source: Author's analysis of the Panel Study of Income Dynamics (PSID). See Appendix 1 for methodological details.

Persistence of Absolute Economic Inequality—The Intergenerational Elasticity

New Estimates of Intergenerational Elasticities

- To assess the plausibility of the IGE being this high, Figure 11 displays the range of estimates produced from more or less restrictive samples of “fathers” and sons (using maternal partner or mother earnings when fathers are not present).
- While the west side of the chart is noisy, the steady rise of IGE estimates as more and more years of earnings are averaged is more apparent than the rise of IRAs in Figure 9.
- The surface rises moving closer to the southwest and—especially—the northwest walls.

Figure 11: Changes in the Intergenerational Elasticity (IGE) for Male Earnings as the Number of Years of Missing Earnings is Allowed to Vary



Source: Author's analysis of the Panel Study of Income Dynamics (PSID). Each parent or child may have up to 15 years of income within a span of up to 31 years. See Appendix 1 for methodological details.

Persistence of Absolute Economic Inequality—The Intergenerational Correlation

Persistence of Absolute Economic Inequality—Surname-Based Measures

Sibling Similarity in Terms of Relative Income—The Sibling Rank Association

Sibling Similarity in Terms of Absolute Income—The Sibling Correlation

Assessing Equality of Opportunity

Mobility versus Opportunity

Which Summary Measure? — Conceptual Issues

Which Summary Measure? — Practical Issues

Conclusion