

Economic and Social Mobility, and Transmission of Inequality

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1 Economic and Social Mobility

In Lecture 2, we looked at changes over time in the income (or wealth, etc.) needed to be at the 10th or 50th or 99th percentile. Social/economic **mobility** is about something slightly different: how the fortunes of individuals, or of families, changes over time. The reason these are different concepts is that the people at the 50th percentile (or whatever) in 2022 were not necessarily the same as the people at the 50th percentile in 2012, let alone in 1922. “Mobility” is about tracking people or families over time.

There are two important distinctions to make when talking about mobility, which cut across each other. One is between **absolute** and **relative** mobility, and the other is between **intra-** (or “within-”) and **inter-** (or “between-”) generational mobility.

- Intra-generational, absolute mobility: Changes in absolute income (or wealth, or status, etc.) within one lifetime, say over a set number of years. We can use differences or ratios as we like, but we are interested in comparing whether Irene (or Joey or Khadijah) is better or worse off now than Irene was in the past. (Thus the classic question of American politics, “Are you better off now than you were four years ago?”)
 - For income: generally, but far from always, positive over an individual’s life-span, up to a certain age (which tends to be later for professionals than for manual or service workers).
- Intra-generational, relative mobility: Changes in relative income (or wealth, etc.), or rank in the income distribution, within one lifetime. Thus the question isn’t “Is Irene better off than the Irene of four years ago?”, but “Has Irene moved up or down in rank, compared to her peers?” If Irene’s income has doubled, but her peers incomes’ have all tripled, Irene has experienced positive *absolute* mobility, but

negative *relative* mobility. (Similarly, if everyone's income goes down, but Irene's goes down *less*, that's positive relative mobility for Irene, which may or may not be any consolation to her.)

- Relative mobility might be measured with respect to others in one's birth cohort, one's neighbors, those in the same profession, etc., or relative to the population as a whole.
- **Inter-generational** mobility is change in absolute or relative income (or wealth, etc.) between parents and children (or more generally ancestors and descendants). One way to measure this is to use the correlation between parents and children. (Or, perhaps, the correlation in their ranks¹, for relative mobility.) Relatedly, especially in economics, we might look at the **elasticity**² of children's income on parents' income.

2 Measurement issues

Measuring mobility is a big undertaking!

2.1 Measuring intra-generational mobility

- Need to link data on specific individuals over long periods of time
 - We need a government, indeed a very powerful, intrusive and effective government, to gather this kind of data (typically from tax or census records)
 - There are *some* “panel” or “longitudinal” studies of income which aren't officially government surveys, but they're all government funded. . .
- Income (especially) fluctuates, may make more sense to look at average income over a number of years but that demands more data
- Adjustments for inflation etc. (as we've already looked at)

2.2 Measuring inter-generational mobility

- Need to link data on specific individuals to their parents over long periods of time
- Typically look at children in their 30s so need to span at least 3 decades
 - *Really* need an intrusive and capable state
- Which parent? Other issues with family structure
 - I suspect one reason there are so many studies using fathers and sons is to try to avoid those issues, but then we're ignoring half the population. . .
- Again, fluctuation issues so time-averages might make more sense
- Again, comparisons of money across time can be tricky

¹The ordinary correlation coefficient between X and Y , $\text{Cov}[X, Y] / \sqrt{\text{Var}[X] \text{Var}[Y]}$, is formally called the “Pearson correlation coefficient”, after the statistician Karl Pearson who introduced it. If instead of calculating the correlation between the actual numerical magnitude of X and Y , we first replace values by their ranks, and then calculate the Pearson correlation, that's the “Spearman correlation” or “Spearman rank correlation”, after Charles Spearman, who introduced *it*. (We will meet both Pearson and Spearman again later in the course, in other connections.)

²In economics, the **elasticity** of y with respect to $x \equiv$ fractional change in y for a (small) fractional change in x , $\frac{\Delta y}{y} / \frac{\Delta x}{x}$. (Here $y =$ child's income and $x =$ parent's income.) Taking the limit, we get the ratio of differentials $\frac{dy/dx}{y/x}$; some work with the chain rule should convince you that $\frac{dy/dx}{y/x} = \frac{d \log y}{d \log x}$. You could imagine estimating *that* by linearly regressing $\log y$ on $\log x$. But then there shouldn't be *one* value of the elasticity, independent of the distribution of x , unless $y = ax^b$ for some a, b (in which case, what's the elasticity in terms of a, b ?). There is, of course, absolutely no reason in economic theory, sociology, etc., to think this is the right functional form for this relationship, but people estimate it anyway. . .

- Economists have tended to look at income, wealth, and rank in same; sociologists have been more interested in education and occupation

3 Some rough patterns on mobility

- Over-all levels of inter-generational mobility are low, perhaps surprisingly low, and have if anything been declining over the same period in which inequality has been rising
- The Nordic social democracies have some of the highest levels of inter-generational mobility, the US is not especially high for a rich democracy
 - Despite our national mythology...
- Some evidence that, in general, countries with less inequality at any one time have higher mobility between generations (an important phenomenon with the unhelpful name of the **Great Gatsby curve**³ [[CITES]])
- Some evidence that families at truly elite levels persist over *many* generations, but this is speculative and debated
- Concretely, Chetty et al. (2014) put the probability of a child born around [[1980]] into the lowest 20% of the income distribution reaching the top 20% as an adult at around 8% in the US
 - They don't report, say, the probability that a child born in the top 20% will be in the top 20%, but we know from other sources that it's much more than 20%!

4 Transmission of inequality:

- If there was *no transmission of inequality*, that probability should be 20%, not 8%
 - Some people are shocked at how much inequality is transmitted, others are surprised at how little!
- It is extremely hard to find social situations *without* transmission of inequality. Even the Communist revolutions in Russia and China, which were *supposed* to end this, and certainly up-ended society, failed to do so. (For some evidence from the USSR, see Guirkinger et al. (2022); for evidence from the People's Republic of China, see Alesina et al. (2021).) There is also some evidence that inequality can be transmitted within families over *very* long periods of time, e.g., hundreds of years (Barone and Mocetti 2021).
- Clearly, *something* sets up the children of the well-off to be, typically, better-off than the average, and the children of the poorly-off to be worse-off, so there have to be **mechanism** for the transmission of inequality

4.1 Mechanisms for the transmission of inequality

Here are some mechanisms, starting with the more biological:

- Nutrition, medical care, etc.: Maybe not *so* important in rich democracies, but a big deal historically, and still in a large part of the world. (See Floud et al. (2011) for some statistics on height differences between the lower and upper classes, and their narrowing over the 20th century.)
- Exposure to environmental pollutants: Many toxic substances (especially, but not just, lead) are very bad for the developing brain, and rich people are much less exposed to them than poor people, with predictable consequences⁴ (Washington 2019)

³After a 1920s novel about a social climber that's supposedly a classic of American literature, and a staple of high school curricula, but which I have never managed to read.

⁴More precisely, there tend to be comparatively small areas with very high concentrations of pollutants, and those tend to be inhabited by poor people; many other poor people live in comparatively un-contaminated areas, but very, very few rich people live in literally-toxic environments.

- Formal education: For many statistical purposes, we treat one high school diploma as just like another, or one year of schooling as just like another, but in reality we all think that schools vary wildly in quality. (CMU charges a lot more tuition than Allegheny County Community College, or even the University of Pittsburgh, because we claim to deliver a much better education, and most people believe that claim.) One of the things rich parents buy with their money is getting their children into better schools; even when schooling is officially free, because public, housing is more expensive in districts with better schools, *because* they have better schools. And rich, educated parents have the time and resources (material, mental and political) to make sure their schools *stay* good.
- Informal education: Families pass on customs, traditions, and habits, which can be at least as important as whatever happens in a classroom. Some families are able to supplement formal education with their own teaching of academic subjects⁵. (Changes to formal school curricula can be bitterly resented by parents for this reason.)
- Social networks: contacts, introductions, opportunities to start out in some firm or occupation; but also modes of behavior and habits which let you “fit in” in certain professions or environments but not others.
- Legal inheritance of property: direct for wealth, indirect for income if you inherit income-generating assets
 - Or use cash to fund a business, an unpaid internship that leads to a high-paying job, etc.
- Parental support without direct inheritance: paying for education (including paying for living expenses), paying for internships, start-up money for businesses, down-payments on houses, etc., etc.
- Genetics: It is *conceivable* that there are genetic causes to inequality, though there are a couple of reasons to doubt their importance, and still more to doubt whether we know anything useful about them at present.
 - Genetic inheritance is, ordinarily, confounded with the inheritance of tradition, assets, social position, etc.
 - * Attempts to de-confound this by using identical twins reared apart still run into the fact that twins reared apart are (i) weird (what on Earth is going on to separate a pair of twins as new-borns?), and (ii) not assigned to a random, and therefore representative, set of families, which is what would be needed to cleanly separate genetic from socio-cultural influences, and finally (iii) the product of a shared environment for at least nine months before separation.
 - * Attempts to de-confound this by using “genome-wide association studies” run into population structure. Most social groups are **endogamous**, they marry, and otherwise reproduce, inside the group boundary — for the most part. If group membership is (socially) transmitted, this will *create* genetic differences between social groups. If status is *purely* socially transmitted, it will still be *inferable* from someone’s genome. (See lecture 6.) None of the common methods in use for dealing with such population stratification actually works very well. [[REFS]]
 - Nonetheless, it is easy to list traits which are helpful in getting ahead in a rich democracy which is full of complicated bureaucracies (such as corporations and non-profit organizations) - not being dyslexic - being conventionally good-looking [[including being tall]] - having a good memory for facts - having a good memory for people - having a large working memory capacity - being able to focus on one thing for an extended period of time - being able to manipulate people emotionally *and* which might, plausibly, have a genetic component. (One could even include “resistance to lead poisoning” on such a list.) This would, of course, make getting ahead in life even more of a matter of luck than if these traits were *not* under genetic control, since nobody does anything to *deserve* their genetic inheritance. By many lights, this would actually *strengthen* the case for redistribution! But that gets us into questions of ethics and politics which are both intensely disputed, and outside the scope of this class.

⁵When I was a teenager preparing to take the PSAT, my mother wrote me out lists of Latin and Greek roots to memorize, to help with the vocabulary parts of the test. This was very helpful, and, needless to say, not something every family could offer. In turn, my mother was able to do that because she’d attended an Italian *liceo classico* where she was taught Latin and Greek, because *her* parents were highly educated, etc. And since she came from a family of middle-class Italian Socialists and Communists, she was *very* convinced of the value of formal, conventional education, and was *very* effective at passing that on to her children.

4.2 Mechanisms for increasing social mobility

mostly follow from thinking about the mechanisms for the transmission of inequality.

- Feed the hungry, keep people from getting sick, etc. (Often this can be simply accomplished by making sure people have money (Sen 1999) — full employment reduces a lot of social problems!)
- Reduce cost barriers to getting educated, to entering professions, etc.
- Changing occupational structure: If the economy *needs* more highly-trained (and rewarded) workers than can be provided by the children of the professional classes, they will be recruited from the children of other classes. (Perhaps after a training process.) This is, arguably, what happened in the rich democracies, and some other countries, in the 20th century.

4.3 The “iron law of meritocracy”

(Flynn 2007; Hayes 2012): Suppose status and rewards are distributed according to “merit” (however defined) in *one* generation; one of the things the rich will try to buy is high status for their children; there will (usually) be some way in which they can do so; so meritocracy will be followed by some kind of hereditary oligarchy

- This will *not* necessarily be about idiot children of privilege failing upwards; it may well be that the way the well-off ensure their children are also of high status is by making sure that those kids *genuinely* have “merit” (are well-educated, have all the right habits and traits, etc.).
 - In particular: If education is a key location for inequality, the rich will try to make sure their children *are* better-educated, and will often succeed
 - * In very particular: We see a lot of this in America today
- On the *moral* issues with meritocracy, and the history of the term, see Appiah (2018)

5 Further reading

See the website this time.

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