Cappellari, Lorenzo

Article

Income inequality and social origins

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LORENZO CAPPELLARI
Università Cattolica Milano, Italy, and IZA, Germany

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World of Labor
Evidence-based policy making

Income inequality and social origins

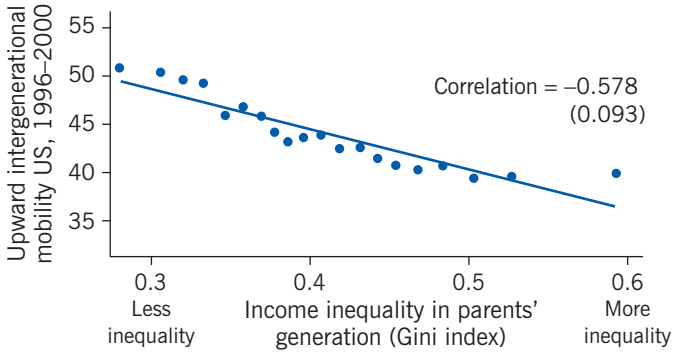
Promoting intergenerational mobility can make societies more egalitarian

Keywords: income inequality, intergenerational mobility, social origins, Great Gatsby curve

ELEVATOR PITCH

Income inequality has been rising in many countries. Is this bad? One way to decide is to look at the change in incomes across generations (intergenerational mobility) and, more generally, at the extent to which income differences among individuals are traceable to their social origins. Inequalities that reflect factors largely out of one's control—such as local schools and communities—require attention in order to reduce income inequality. Evidence shows a negative association between income inequality and intergenerational mobility. The debate on whether community effects exert additional effects is still open.

Upward intergenerational income mobility is strongly related to parents' income inequality



Source: [1].

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KEY FINDINGS

Pros

- Promoting greater intergenerational mobility may increase equality of opportunity.
- Policies that foster intergenerational mobility may incentivize human capital investments and productive effort.
- Youth communities (school and neighbors) seem to play a limited role in determining inequality in the long term, but the evidence is not conclusive.
- Even if a large part of intergenerational transmission of income is due to genetic factors, policies may still have an effect in reducing inequality.

Cons

- Income differences reflect individual effort, and redistributive policies could curb individual incentives.
- Growing income inequality may increase social segmentation and reduce equality of opportunity.
- Income differences between individuals in a generation reflect to a significant extent differences between their parents.
- A non-negligible share of intergenerational transmission is ascribable to genetic factors.
- Countries with high income inequality tend to have low intergenerational mobility.

AUTHOR'S MAIN MESSAGE

Income inequality and lack of intergenerational mobility seem to go hand-in-hand. This is worrying for public policy as it implies that income differentials persist because opportunities to succeed depend on one's social origins. Promoting intergenerational mobility may make societies both more egalitarian and more efficient. The expectation that people, whatever their social origin, can raise their standard of living is a powerful incentive to human capital accumulation and personal effort. Policies to counteract disparities in family background, such as education interventions for poor children, may foster intergenerational mobility.

MOTIVATION

Societies have long debated whether inequality is good or bad for society. While those in favor of policies to reduce inequality stress that at high levels it may endanger social justice and social cohesion, opponents assert that income differences reflect individual efforts and such redistributive policies could curb individual incentives. Understanding whether income inequality is a symptom of social injustice is essential for determining when income inequality becomes intolerable and how much redistribution is needed. A strong dependence of individual outcomes on social origins may not only be inegalitarian, but may also limit the poor's incentives to invest in human capital and exert productive effort. The equality-of-opportunity approach argues that income differences arising from circumstances independent of individual effort, such as parental background and social origins, are unjust and should be remedied through policy measures [2]. The approach distinguishes between such income differences and those for which individuals are responsible, which are viewed as essential to preserve incentives and foster human capital investments and economic growth. One way to analyze the relationship between income inequality and family background is to explore intergenerational mobility to determine whether individuals' incomes (and other relevant outcomes such as educational attainment) are positively associated with parental incomes. If studies find that income inequality is matched by sustained mobility over generations, income inequality would be less important an issue, whereas a finding of lack of mobility would be a symptom of persistent social segmentation requiring policy attention.

DISCUSSION OF PROS AND CONS

Intergenerational transmission of income or education may occur because richer parents have more financial resources to devote to their children and can afford greater investments in their human capital. It may also occur because richer parents are typically more educated and can devote better quality time to childrearing, particularly in the early years, when key cognitive and other skills are being formed that will pay off later in higher incomes. Researchers have also pointed to the transmission of certain genetic traits as a source for an association between intergenerational mobility and incomes. Disentangling these possible explanations for intergenerational transmission is vital for understanding the mechanisms underlying the parent–child transmission of economic advantage.

Looking at income correlations between siblings offers another approach to understanding the impacts of social origins (both the family and the surrounding social environment) on inequality. Siblings share not only a family "community" but may also share the social environment in which the family is embedded, including schools and neighbors.

A related area of research considers the long-term influence of community effects, as measured by key indicators of social origins, with a special focus on the quality of schools and neighbors. These studies attempt to identify causal effects rather than simple statistical associations by exploiting random variation in the allocation of individuals to schools and neighbors, often as a result of social programs that change a child's social environment. The debate on whether community effects exert additional effects on income inequality has not yet been resolved.

The relationship between income inequality and intergenerational mobility: What do we know?

From a strictly statistical point of view, the concepts of income inequality and intergenerational mobility are independent. However, mounting evidence points toward a negative association between them. A graph that has become famous as the "*Great Gatsby* curve" lines up the intergenerational elasticity of income and the Gini index of income inequality across countries [3]. The intergenerational elasticity of income, an inverse measure of intergenerational mobility, is a widely used measure of the association between parents' outcomes and their offspring's outcomes. A value of 0.5, for example, means that a 10% change in parents' income is associated with a 5% change in their offspring's income in the same direction. A status quo society, in which income differences are fully transmitted from one generation to the next, would have an intergenerational elasticity value of 1. A perfectly mobile society in which family origins play no role in shaping one's fortunes would have a value of 0. The *Great Gatsby* curve shows that, across countries, there is a positive relationship between the level of income inequality within the parents' generation (as measured by the Gini index) and the degree of intergenerational transmission.

This relationship has received considerable political attention because it says that inequality across generations, which undermines equality of opportunity, is most persistent in countries with high levels of inequality. Cross-country comparisons could be biased, however, by country differences in factors affecting both inequality and intergenerational mobility, such as differences in institutional settings or cultural values, which would muddy interpretation of the inequality-mobility relationship. But recent evidence shows that cross-country heterogeneity is not the driver of the negative relationship between inequality and mobility. A study for the US finds that the probability that children whose fathers were in the poorest fourth of the income distribution will climb the income ladder (upward mobility) is inversely related to the Gini index of inequality of parents' income [1].

Figure 1 plots the *Great Gatsby* curve across US states. Data on intergenerational income mobility were computed by the Equality of Opportunity Project from millions of US tax records for 1996–2012 for sons born between the early 1980s and early 1990s [1]. The data, computed for commuter zones (geographic units of analysis that more closely reflect the local economy where people live and work than political boundaries do), were aggregated to the state level. Data on the Gini index of household incomes at the state level are from the US Census Bureau.

The left panel of Figure 1, which plots the father–son intergenerational rank correlation of incomes (a measure of intergenerational immobility similar to intergenerational elasticity) against state income inequality measured in 1979 shows a positive relationship between income inequality and intergenerational immobility, in the spirit of the *Great Gatsby* curve. In 1979, the sons that would constitute the "destination generation" of the intergenerational transition measured by the Equality of Opportunity Project were not yet born, so the income inequality shown in the left panel refers to the generation of fathers or earlier. The right panel of Figure 1 relates intergenerational elasticity to the present level of income inequality, offering evidence that states that had a high level of inequality in the past and that experienced a low level of intergenerational mobility also have high levels of inequality today. In this sense, the lack of intergenerational mobility

Figure 1. US states with a high level of inequality in the past that experienced a low level of intergenerational mobility also have high levels of inequality today

Note: Intergenerational rank correlation is a measure of intergenerational immobility based on the association between parents' outcomes and their offspring's outcomes.

Source: Calculations based on data from the Equality of Opportunity Project. Online at http://www.equality-of-opportunity.org; and the US Census Bureau. Online at: http://census.gov

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acts as a conduit for income inequality from the past to the present. Note that, in principle, mobility in any period may depend on past mobility: for example, because of high past mobility in one period, families or individuals may attain their "proper" position in society, resulting in less mobility in future periods.

From the evidence in the *Great Gatsby* curve in Figure 1, it seems fair to conclude that there is an empirical regularity associating income inequality and lack of mobility, with lack of mobility appearing to determine the persistence of inequality over time. While this evidence shows that high income inequality is a concern because it is matched by low intergenerational mobility, the analysis reveals nothing about any underlying causal mechanisms.

Arguments based on a belief that society should provide equality of opportunity for its members justify interventions aimed at "leveling the playing field" in high-inequality countries, such as education investments in children from poor families. But these policies can be expensive, and if they result in tax increases, especially for high-income families, they could, in theory, discourage their economic activities and compromise economic growth.

It is difficult to say, however, whether policies promoting equal opportunity would actually result in diminished economic efficiency. The answer would depend on whether a country is already using all of its resources in an efficient way. Where that is not the case, governments that promote intergenerational mobility might be able to kill two birds with one stone. This would be the case, for example, if intergenerational transmission reflects talent misallocation because the children of well-off families are hired into good jobs that they would not have obtained except for their family connections. There is evidence for Canada, Denmark, and Sweden, for example, that children tend to be hired by the same firm for which their fathers work. Part of this intergenerational transmission of employment may be efficient (because parents know the productivity of their children and the needs of their employer and can favor good matches). But the intergenerational transmission may also reflect forms of nepotism if it results in people who are not the best candidate getting the job solely because of their connections, harming firm productivity and efficiency. Another argument against the existence of trade-offs between leveling the playing field and reducing economic activity relates to the children of poor families, for whom the knowledge that inequality is associated with lack of mobility may be a strong disincentive to exerting any effort in life.

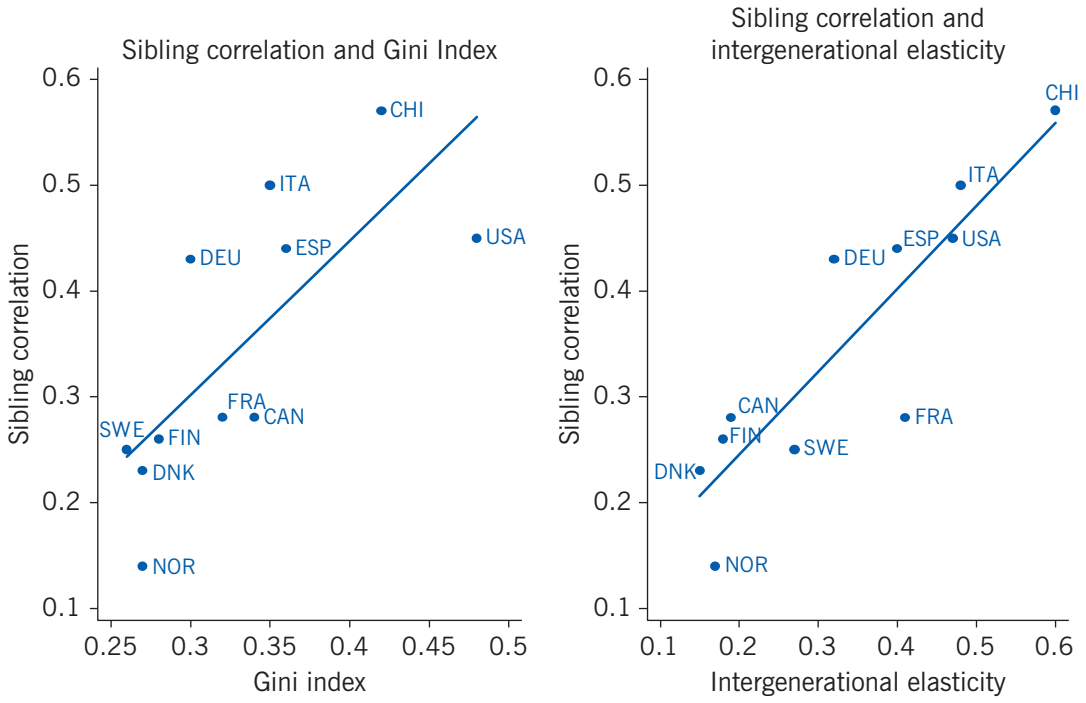
Is it all in the family?

Intergenerational associations provide an important but still partial perspective on the dependence of individual success on social origins. In principle, there might be other factors operating outside the family and independently of it that influence an individual's ability to generate income. One important example is school quality, which influences human capital formation. To some extent, the quality of the school a child attends will reflect the parents' income and choices. But there may also be dimensions of school quality that are independent of parental choice, such as teachers' effort or disruptive classmates. These may affect income capacity in the long term independently of family background. Similarly, the quality of a family's neighbors can influence young individuals beyond the effects of family. These "youth community effects" may influence individual behavior and human capital acquisition early in the life-cycle and exert long-term effects on incomes, thus contributing to income inequality. Similar to the family, youth communities to some extent represent circumstances that an individual does not choose but that contribute to the generation of inequalities that block the emergence of equal opportunity. Because these factors are not controlled by the individual, there are good arguments for government interventions to alter them.

Economists and social scientists summarize the joint effect of family and community on income inequality through a measure known as the "sibling correlation of incomes." The sibling correlation is the share of income inequality that is due to all factors that siblings share, which include both the family and youth communities. A sibling correlation value of 0.5, for example, means that half the observed income inequality is associated with factors that are shared within families and youth communities.

Figure 2 provides some evidence of patterns in the sibling correlation for brothers in incomes across countries [3], [4]. The left panel associates the sibling correlation with the Gini index of income inequality and traces what is in effect a *Great Gatsby* curve of the sibling correlation. Countries cluster into essentially two groups. One group of countries consists of Scandinavian countries, with a low degree of income association between

Figure 2. Sibling correlations in income, income inequality, and intergenerational income mobility by country



Note: Sibling correlation is the share of income inequality that is due to all factors that siblings share, which include both the family and youth communities, such as schools and neighbors. Intergenerational elasticity of income is an inverse measure of intergenerational mobility. Canada's estimate is for Toronto.

Source: Calculations based on data from Corak, M. "Inequality from generation to generation: The United States in comparison." In: Rycroft, R. S. (ed.). *The Economics of Inequality, Poverty, and Discrimination in the 21st Century*. Santa Barbara, CA: ABC-CLIO, 2013; pp. 107–126 [3]; Comi, S. "Family influence on early career outcomes in seven European countries." *Economics Bulletin* 30:3 (2010): 2054–2062 [4]; and the World Bank. Online at: http://data.worldbank.org/indicator/SI.POV.GINI

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brothers, and Canada and France, with a moderate degree of sibling correlation (around 0.3). All these countries also have moderate levels of income inequality, with a Gini index below 0.35. Countries in the second group (Germany, Spain, Italy, China, and the US) have a high share of total inequality that is accounted for by factors shared by brothers (more than 0.4), along with moderate to high levels of total inequality (Gini index). This panel shows that the association between total inequality and sibling correlation is driven mostly by differences in (high and low) sibling correlation, suggesting that the evidence of a *Great Gatsby* curve is less clear-cut for the sibling correlation than for intergenerational elasticity.

The right panel of Figure 2 shows the association between two measures of social origins: intergenerational elasticity and sibling correlation. Any major discrepancy between the two variables would suggest that youth communities play an extra role in shaping individual incomes beyond family effects. Not surprisingly, the panel shows that countries in which intergenerational transmission is strongest are also countries in which the share of inequality that can be ascribed to sibling similarities is the largest. The pattern in the graph suggests that the factors that operate outside the family move in the same direction as the factors that make sons similar to their fathers. There are significant cross-country differences in the extent to which income inequality is due to social origins, and the graph suggests that community effects add little to what is inherited from the family.

There is an ongoing debate on whether the effects of youth communities are irrelevant to individual incomes in the long term. Some studies have compared the sibling correlation of incomes with an analogous correlation estimated across youth neighbors [5], [6]. These studies find that the correlation between neighbors is smaller than the correlation between brothers but that it is still substantial, accounting for between one-half (in the US) and one-third (in Norway) of the sibling correlation. One issue with these findings is that neighbors might be similar to one another not because of the effects of youth communities but because they come from similar families. In other words, the neighbor correlation might simply reflect the family effect. Another study exploits data from the Toronto Public Housing Program, which randomly allocated families to communities, thereby eliminating any effects that might stem from selection into neighborhoods [7]. The analysis showed that while neighbor correlations across all of Toronto account for a fifth of the sibling correlation, the income correlation for randomized neighbors is zero, supporting the idea that community effects are not additional to family effects in shaping income inequality.

Other studies have looked at the effects of neighbors on income levels rather than on inequality. A study exploiting a randomization of neighbors by the Chicago Moving to Opportunities program finds no effects on earnings when children reach adulthood [8]. Recent evidence reported by the Equality of Opportunity Project questions those results and points to the role of early exposure as the key mediating factor of the neighbors effects [9]. The study finds that more than half of the intergenerational elasticity of incomes is indeed accounted for by neighbor effects. Other research looks at educational quality effects and controls for selection into classes of varying quality within a school. These studies find that the quality of education has long-term effects on earnings [10], [11].

The debate on whether youth communities (school and neighbors) have an additional impact on income inequality in the long term is still open.

Is it nature or nurture?

Besides the distinction between the effects of family and community, studies looking at the distinction between nature and nurture as the mechanisms of intergenerational transmission offer another perspective on the relationship between income inequality and social origins. Is the inheritance of income potential from parents determined before birth because of the transmission of genetic endowments (for example, IQ), or is it the outcome of exposure to environmental influences occurring after birth—or both? The answer to this question is relevant because it could identify one of the channels of intergenerational mobility. Caution is required in drawing implications about the effectiveness or appropriateness of anti-poverty policies from studies of nature versus nurture. Even if poverty is "natural," in that it is "genetically" inherited, that does not mean that income support programs would be ineffective as poverty alleviation tools [12].

In the absence of direct information on genes, answering this question is difficult. Researchers have contrasted income correlations across groups of people whose degree of genetic similarity is known, such as identical twins, who share the same genetic make-up, and fraternal twins, who share only half of their genes. One challenge in this type of comparison is that differences in correlations for the two groups may reflect differences

in the environment between identical and fraternal twins, not just genetic differences. Using information on whether siblings were reared together or apart can reduce the problem. A study that compared income correlations across Swedish siblings and twins exploiting all these sources of variation found that the lower bound estimate for the share of income inequality that can be ascribed to genetic similarities is 20%. Contrasted with an overall sibling correlation for twins of about one-third, this finding points toward a substantial role for nature rather than nurture in shaping income inequality [13].

Twins studies have explored the causal process of intergenerational transmission. The main idea behind these studies is that intergenerational persistence due to genetic factors is not causal. Thus, if all persistence is genetic, then randomly increasing the income of parents will not increase the income of the next generation because income increases do not affect parental genes. Intergenerational persistence due to parents investing in their children's education, is, however, an example of a causal mechanism. A random increase in parental income could increase the resources devoted to investments in children's education, creating greater income potential for the children. The research strategy of these twins studies is to compare intergenerational transmission among parents who are identical twins because any differences that are found cannot be due to differences in genes and therefore would support a causal interpretation of intergenerational transmission.

One limitation of this line of research is that it typically focuses on educational attainment rather than income as the outcome that is passed across generations. Findings from this literature, especially from studies using register data that refer to the entire population of twins, as is typical in Scandinavian countries, point toward a non-negligible causal role of parental education on children's education, accounting for between one-quarter and one-half of overall intergenerational transmission.

Another way that researchers have addressed the nature versus nurture distinction has been to examine outcomes for adoptees. Because adopted children do not share any genes with their adoptive parents, any parent–child similarity in outcomes has to be attributable to nurture. An important caveat in this strand of research is that it is based on the assumption that adopting parents are not different in ways that make them more likely than average parents in the population to transmit their income or education. Similar to twins studies addressing causality issues, one limitation of adoptee studies is that the focus is essentially on education, with little evidence on incomes. Findings point to a large and significant association between parents' education and children's education for adopted children, which is suggestive of causal effects.

LIMITATIONS AND GAPS

Research on intergenerational transmission is still in progress, with much still to learn. One of the main limitations is data availability. Researchers need data on the incomes of family members during the central stage of their working lives, which is not always readily available. Scandinavian countries are an exception, with researchers able to access population registers that enable them to connect income profiles of family members. Remarkable advances have recently been made in the US, by the Equality of Opportunity Project. But for most countries, data availability remains limited, which explains why intergenerational income elasticity has been estimated for only about 20 countries; sibling correlation estimates are known for even fewer countries.

The *Great Gatsby* curve seems to be an empirical regularity, and it would be interesting to see it confirmed for countries where researchers can exploit cross-area variations in inequality and intergenerational mobility. Still, little is known about the causal mechanisms that operate behind the *Great Gatsby* curve and, more generally, behind the intergenerational transmission of incomes. The intergenerational income elasticity measure is still largely a black box whose inner workings need to be exposed by future research.

A lively area of research involves studying the long-term effects of youth environments, especially school and youth communities. Youth environments are often the target of policies aimed at reducing poverty. Whether school and youth communities have an effect on incomes in the long term is still a matter of debate. Recent findings seem to point in that direction, but more research is needed to establish that connection conclusively.

SUMMARY AND POLICY ADVICE

High income inequality and lack of income mobility across generations have been found to co-exist. This connection is troublesome from a policy perspective because it suggests that developed economies do not provide their citizens with equal opportunities for achieving economic success. Breaking this vicious circle is an important target for policy. The aim should be to increase intergenerational mobility without altering the structure of incentives that is embedded in the income distribution. Income differences should reflect differences in individuals' abilities and preferences, not those of their parents.

Increasing income mobility across generations may also pay off in greater economic efficiency. Some of the observed income immobility is a symptom of an underlying misallocation of resources that blocks bright children from disadvantaged families from access to high-paying occupations. In part, this failure may reflect nepotism in the labor market, but it also arises from blocks that occur earlier in the life-cycle, for example in schools and neighborhoods. The belief that people from any socio-economic background have the potential to succeed and to earn a high income is probably the most powerful incentive to individual effort. Policies that counteract disparities in family background, such as education interventions directed to children from poor families, may foster intergenerational mobility.

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Competing interests

The IZA World of Labor project is committed to the *IZA Guiding Principles of Research Integrity*. The author declares to have observed these principles.

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Further reading

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