

Income Inequality, Equality of Opportunity, and Intergenerational Mobility*

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The “American Dream” is a very broad concept with many meanings and certainly broader than any single statistic can measure. However, when the Economic Mobility Project (2009), supported by the Pew Charitable Trust, conducted a nationally representative poll that asked Americans what they understood this phrase to mean, some typical answers included: “Being free to say or do what you want”; “Being free to accomplish almost anything you want with hard work”; and “Being able to succeed regardless of the economic circumstances in which you were born.” These meanings have historically not only made the American Dream a defining metaphor of the country, they are also likely a reason why Americans have been willing to tolerate a good deal more inequality of outcomes than citizens of many other rich countries. Bénabou and Ok (2001) have called this the “prospect of upward mobility” hypothesis, the idea that those with lower incomes are not strong advocates of redistributive policies because of the belief that they, or in the least their children, are likely to climb the income ladder.

However, an emerging body of evidence suggests that more inequality of incomes in the present is likely to make family background play a stronger role in determining the adult outcomes of young people, with their own hard work playing a commensurately weaker role. The OECD (2011a, p. 40) has gone so far as to state that rising income inequality “can stifle upward social mobility, making it harder for talented and hard-working people to get the rewards they deserve. Intergenerational earnings mobility is low in countries with high inequality such as Italy, the United Kingdom, and the United States, and much higher in the Nordic countries, where income is distributed more evenly.”

This suggestion that higher inequality skews opportunity and lowers intergenerational mobility is the starting point of this paper. In particular, my focus is on the degree to which increasing inequality in the high-income countries, particularly in the United States, is likely to limit economic mobility for the next generation of young adults.

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The paper offers a descriptive, yet structured, discussion of the underlying drivers of opportunity that generate the relationship between inequality and intergenerational mobility. The goal is to explain why America differs from other countries, how intergenerational mobility will change in an era of higher inequality, and how the process is different for the top 1 percent. To lay the foundation, I begin by presenting the evidence that countries with more inequality at one point in time also experience less earnings mobility across the generations, a relationship that has been called “The Great Gatsby Curve.” I also outline how to interpret the common statistic measuring intergenerational earnings mobility and its relationship to the broader concept of equality of opportunity. My overview of the causal factors determining intergenerational mobility is based upon a framework drawn from some influential economic models often used to examine the intergenerational transmission of inequality. This framework focuses attention on the investments made in the human capital of children influencing their adult earnings and socio-economic status.

The interaction between families, labor markets, and public policies all structure a child’s opportunities and determine the extent to which adult earnings are related to family background—but they do so in different ways across national contexts. Both cross-country comparisons and the underlying trends suggest that these drivers are all configured to most likely lower, or in the least not raise, the degree of intergenerational earnings mobility for the next generation of Americans coming of age in a more polarized labor market. This trend will likely continue unless there are changes in public policy that promote the human capital of children in a way that offers relatively greater benefits to the relatively disadvantaged. At the same time, the substantial rise in the income shares of the top 1 percent, their access to sources of high-quality human capital investment for their children, and the intergenerational transmission of employers and wealth implies a much higher rate of transmission of economic advantage at the very top, in a way that many will perceive as evidence of inequality in opportunity.

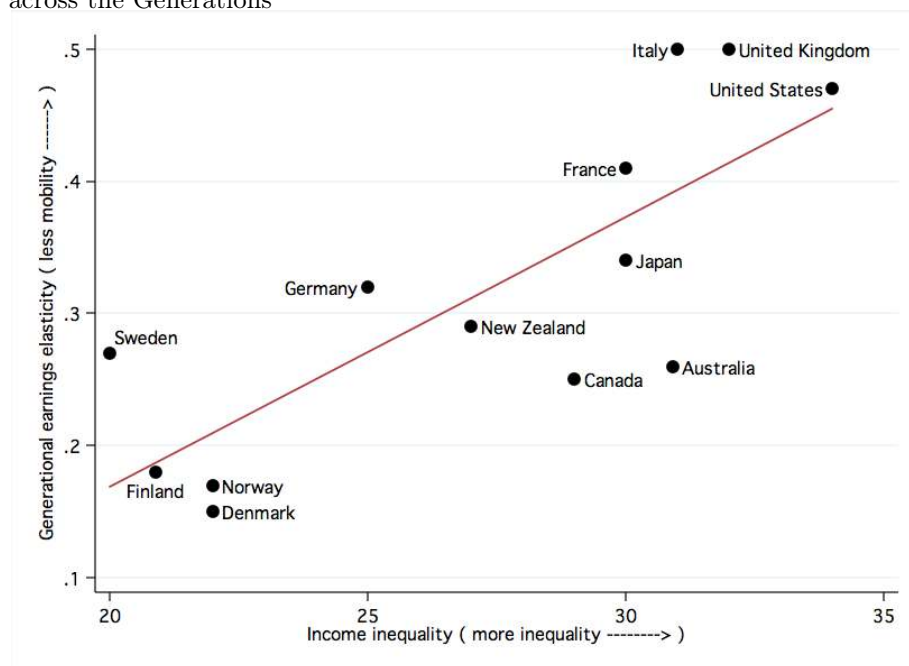
The Great Gatsby Curve

Countries with greater inequality of incomes also tend to be countries in which a greater fraction of economic advantage and disadvantage is passed on between parents and their children. It is now common to represent this relationship with what Alan Krueger has referred to as “The Great Gatsby Curve.” Figure 1 depicts an example.¹

¹Krueger used this label for the first time in a speech, “The Rise and Consequences of Inequality,” to the Center for American Progress on January 12, 2012, in his capacity as the Chairman of the Council of Economic Advisors. The curve has been drawn in different varieties by, to the best of my knowledge, Andrews and Leigh (2009), Björklund and Jäntti (2009), Blanden (2013), myself (Corak 2006, 2013), Ermisch, Jäntti, Smeeding, and Wilson (2012) in addition to appearing in Krueger’s speech and the 2012 *Economic Report of the President*, which stress the relevance of measuring inequality when the children are growing up.

Figure 1

The Great Gatsby Curve: More Inequality is Associated with Less Mobility across the Generations



Source: Corak (2013) and OECD.

Notes: Income inequality is measured as the Gini coefficient, using disposable household income for about 1985 as provided by the OECD. Intergenerational economic mobility is measured as the elasticity between paternal earnings and a son's adult earnings, using data on a cohort of children born, roughly speaking, during the early to mid 1960s and measuring their adult outcomes in the mid to late 1990s. The estimates of the intergenerational earnings elasticity are derived from published studies, adjusted for methodological comparability in a way that I describe in the appendix to Corak (2006), updated with a more recent literature review reported in Corak (2013), where I also offer estimates for a total of 22 countries. I only use estimates derived from data that are nationally representative of the population and which are rich enough to make comparisons across generations within the same family. In addition, I only use studies that correct for the type of measurement errors described by Atkinson, Maynard, and Trinder (1983), Solon (1992), and Zimmerman (1992), which means deriving permanent earnings by either averaging annual data over several years or by using instrumental variables.

The figure ranks countries along two dimensions. The horizontal axis shows income inequality in a country as measured by the Gini coefficient from about a generation ago. During the early to mid 1980s, Finland, Sweden, Norway, and Denmark were the most equal; the United Kingdom and the United States, the least. The vertical axis is a measure of intergenerational economic mobility: specifically, the elasticity between paternal earnings and a son’s adult earnings, using data on a cohort of children born, roughly speaking, during the early to mid 1960s and measuring adult outcomes in the mid to late 1990s. In countries like Finland, Norway, and Denmark the tie between parental economic status and the adult earnings of children is weakest: less than one-fifth of any economic advantage or disadvantage that a father may have had in his time is passed on to a son in adulthood. In Italy, the United Kingdom, and the United States roughly 50 percent of any advantage or disadvantage is passed on.

The “generational earnings elasticity,” is derived from a regression-to-the-mean model, usually as the least squares estimate of the coefficient β in the following equation:

$$\ln Y_{i,t} = \alpha + \beta \ln Y_{i,t-1} + \epsilon_i,$$

with Y representing “permanent earnings” for individuals from a particular family indexed by i , across two generations, t and $t-1$. In much of the literature Y refers to the earnings of fathers and sons to avoid the more complicated analyses needed to address the changing role of women in the labor force. It is not that studies of mothers, daughters and the marriage market do not exist, only that father-son analyses are more common and permit a broader set of cross-country comparisons. In this equation, ϵ represents all other influences on the child’s adult earnings not correlated with parental income. The constant term α captures the trend in average incomes across generations, due, for example, to changes in productivity, international trade, technology, or labor market institutions. The coefficient β indicates the degree to which earnings are “sticky” across generations within the same family, the percentage difference in child earnings for each percentage point difference in parental earnings. The higher the value of β , the more that knowing a parent’s place in the earnings distribution will tell us about where we can expect the child’s place to be; the lower the value, the less stickiness so that a parent’s relative earnings are a weak predictor of the child’s rung on the earnings ladder of the next generation. Mulligan (1997) offers a more detailed description of how this model should be interpreted.

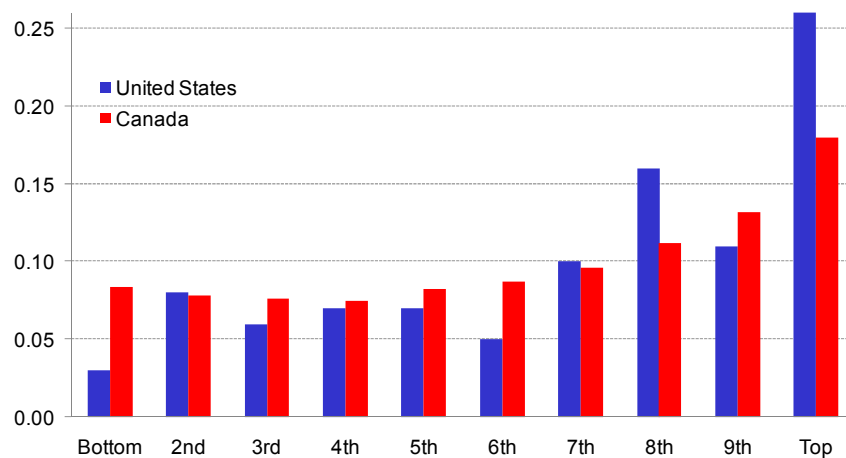
Figure 1 shows the relationship between income inequality and intergenerational economic mobility. The estimates of the intergenerational earnings elasticity used for Figure 1 are derived from methodologically sound, comparable published studies (see notes to Figure 1 for details), and I adjust the results for differences in methodological approach. So these estimates are offered, not as the best available estimates for any particular country, but rather as the appropriate estimates for comparisons across countries. (Analyzing a broader group of countries, I find that many of the lower-income countries occupy an even higher place on the Great Gatsby Curve than depicted for the OECD coun-

tries in Figure 1, but this is likely due to structural factors not as relevant to a discussion of the high-income countries.)

There are certainly many other ways of measuring intergenerational mobility that focus attention upon particular aspects of the process. The generational elasticity, for example, offers an overall average measure of the degree of mobility without saying anything about the direction of change. The cross-country differences illustrated in the Great Gatsby Curve could reflect differences in the degree of upward mobility for those born to low income fathers, or differences in the stickiness of inter-generational status for those born to top income parents. Figures 2 and 3 contrast, by way of illustration, mobility in the United States and Canada for sons raised by fathers with incomes in the top 10 percent, and for those raised by fathers in the bottom 10 percent. In Corak (2010), I argue that the comparison of these two countries is particularly apt in part because of similarities in the underlying data used, but also because they share a good many other things in common, an issue to which I return below.

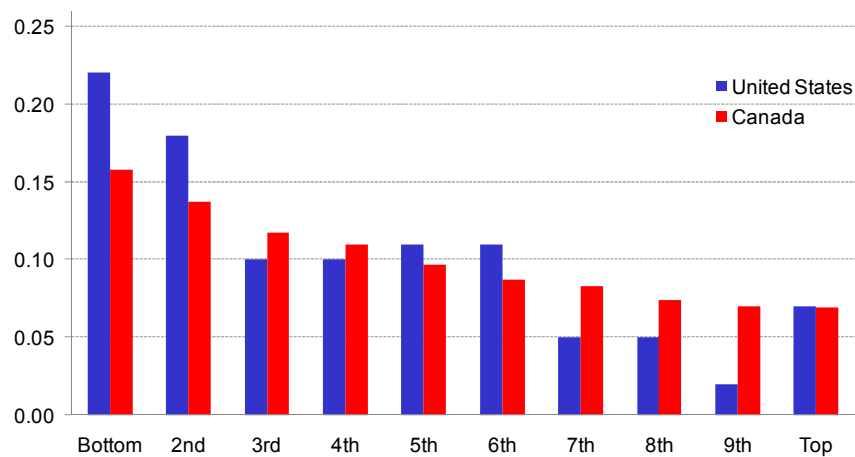
It turns out that the American generational earnings elasticity, at about 0.5, is twice as high as the Canadian, and this has little to do with the degree of mobility of children raised by families in broad swaths of the middle part of the distribution. Indeed, a comparison of the full decile transition matrices reveals a good deal of mobility in both countries, to the point that there is little relationship between family background and child outcomes (Corak and Heisz 1999; Mazumder 2005). It is at the extremes of the distribution that the two countries differ, as illustrated in Figures 2 and 3. In the United States, sons raised by top and bottom decile fathers are more likely to occupy the same position as their fathers than they are in Canada. More than half of sons raised by top decile American fathers fall no further than the 8th decile, and about half of those raised by bottom decile fathers rise no further than the third decile. In Canada there is less stickiness at the top, and a much higher proportion of bottom decile sons also rise to the top half of the earnings distribution.

Figure 2
Earnings Deciles of Sons Born to Top Decile Fathers: United States and Canada



Source: Corak and Heisz (1999, table 6); Mazumder (2005, table 2.2).

Figure 3
Earnings Deciles of Sons Born to Bottom Decile Fathers: United States and Canada



Source: Corak and Heisz (1999, table 6); Mazumder (2005, table 2.2).

All this said, if one number is to summarize the degree to which inequality is transmitted across the generations, just as sometimes one number, like a Gini coefficient, is used to summarize the degree of inequality at a point in time, then the generational elasticity is an appropriate statistic to use. But this does not mean that it measures “equality of opportunity” or the even-more-elusive “American Dream.” Roemer (2004, 2012) and Jencks and Tach (2006), among others, are clear on this point, emphasizing that in no sense is an intergenerational elasticity of zero an optimum and noting that making an inference about equality of opportunity from the degree of intergenerational earnings mobility requires us to draw a line between differences in *circumstances*—for which individuals should in some sense be compensated—and *personal choices*, for which they should be responsible.

Another branch of the empirical literature seeks to draw this line by deriving indices of equality of opportunity that remove the influence of factors over which individuals have no control: for example, race, mother and father’s schooling, region of birth and father’s occupation (Ferreira and Gignoux 2011; Lefranc, Pistolesi, and Trannoy 2008; Paes de Barros, Ferreira, Molinas Vega, and Saavedra Chanduvi 2009). Brunori, Ferreira and Peragine (2013) offer a particularly clear overview and find that indices of inequality of opportunity are in fact strongly correlated with indicators of generational mobility, be it in earnings or in education. It is in this sense that the Great Gatsby Curve can be understood to be signaling—rather than directly measuring—a negative relationship between inequality and equality of opportunity. As these authors put it (p. 17): “[I]nequality of opportunity is the missing link between the concepts of income inequality and social mobility; if higher inequality makes intergenerational mobility more difficult, it is likely because opportunities for economic advancement are more unequally distributed among children.”

A Framework for Comparisons Across Space and Time

The Great Gatsby Curve is not a causal relationship, but it is too glib to dismiss it by simply saying “correlation does not imply causation.” Theories of child development and economic mobility suggest it is reasonable to juxtapose measures of inequality and mobility as a starting point for understanding the causal process and its policy implications.

The adult outcomes of children reflect a series of gradients between their attainments at specific points in their lives and the prevailing socioeconomic inequalities to which they are exposed. Knudsen, Heckman, Cameron, and Shonkoff (2006), to cite only one example, summarize the literature on child development—and in particular some of the work by James Heckman—in a way that relates child development to adult social and labor market outcomes through a recursive process. Socio-economic status influences a child’s health and aptitudes in the early years—indeed even *in utero*—which in turn influences

early cognitive and social development, and readiness to learn. These outcomes and the family circumstances of children, as well as the quality of neighborhoods and schools, influence success in primary school, which feeds into success in high school and college. Family resources and connections affect access to good schools and jobs, and the degree of inequality in labor markets determines both the resources parents have and ultimately the return to the education children receive. This entire process then shapes earnings in adulthood. The Great Gatsby Curve is a summary of all of these underlying gradients, reflecting the outcome of a whole host of ways that inequality of incomes affects children.

The usual starting points for discussions of causality are the models developed by Becker and Tomes (1986, 1979). Solon (2004) has adapted their research in a way appropriate for making comparisons across countries and over time. Very broadly speaking, the reasons for the differences in the intergenerational elasticity across countries have to do with the different balances struck between the influence of families, the labor market, and public policy in determining the life chances of children. These institutions determine the degree to which traits valuable in the labor market are passed on between parents and children, the efficacy of private and public investments in generating human capital, and the labor market returns to human capital, all of which are important drivers of the degree of intergenerational income mobility.

One perspective on the Great Gatsby Curve focuses on the heritability of traits between parents and their children. Becker and Tomes (1979, p.1158) refer to these as “endowments of capital that are determined by the reputation and ‘connections’ of their families, the contribution to the ability, race, and other characteristics of children from the genetic constitutions of their families, and the learning, skills, goals, and other ‘family commodities’ acquired through belonging to a particular family culture.” If these traits are strongly transmitted across generations, and if they are valued by labor markets over time, then there will also be an intergenerational association of incomes. At the same time, if there is significant demographic diversity across countries then we should not be surprised that there is an upward slope to the Great Gatsby Curve even if all societies are equally meritocratic. Becker (2013) and Roemer (2012) clearly articulate this interpretation. For this reason we should not think of the Curve as a recipe for changing outcomes. Rather, it invites us to look at the differences between countries to appreciate the underlying drivers, assess the extent to which they are relevant for public policy, and in this sense recognize that some comparisons are more appropriate than others. Denmark, with a small relatively homogenous population, may not be a template for a large demographically diverse country like the United States; but a comparison of the United States with Canada, a diverse country sharing many fundamental values and institutions with America, may indeed be more appropriate.

Another perspective on the Great Gatsby Curve derives from the focus Solon (2004) places on the returns to education. He takes the rate of return to schooling as an indicator of the degree of inequality in the labor market and shows that societies with labor markets characterized by more cross-sectional inequality—reflecting in part a higher return to education—will be less generationally mo-

bile. Parents with more human capital not only have a higher capacity to invest in the education of their children by virtue of their higher incomes, but also the incentives to do so are greater.

Furthermore, Solon also suggests that public policy can either accentuate or dampen the influence of labor market inequality, showing that generational mobility is promoted by “progressive” public programs that are of relatively more benefit to the relatively less well-off. Two countries may spend the same fraction of their gross domestic product on education, but if this spending is directed to high-quality early childhood education and to primary and secondary schooling accessible for all, then it is likely to be of relatively more benefit to families lower in the socioeconomic scale than if it was directed to high-quality private tertiary education accessible to only a few. Indeed, this perspective should be applied to all aspects of public actions that influence the relationship between families and the labor market, which in addition to expenditures on schooling includes other sources of human capital like health care, taxes and transfers, as well as regulations and policies helping parents to balance work and family life.

Labor Market Inequalities and the Returns to Human Capital

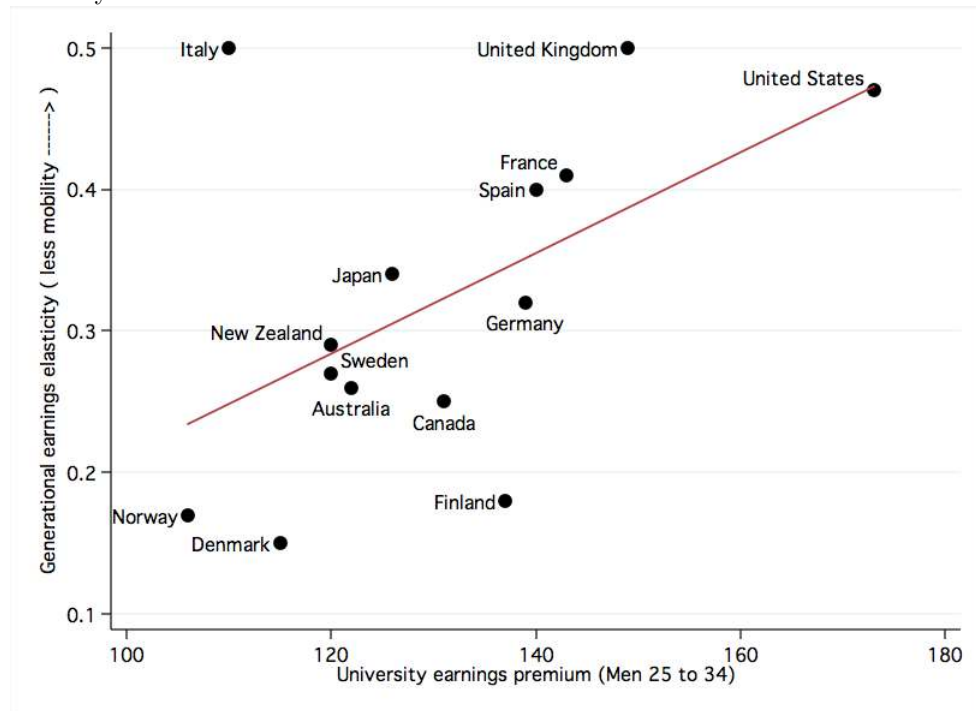
Labor market outcomes have become more unequal in the United States and many other high-income countries since the late 1970s and early 1980s. This pattern is now very well-documented, as have been many of the underlying causes associated with skill biases in technical change, its interaction with globalization, and the capacity of the supply of skilled workers to keep up with demand. But institutional differences have also implied that changes in inequality and the returns to skills have varied across countries.

Figure 4 is inspired by the main hypothesis put forward by Solon (2004), and it relates the intergenerational earnings elasticity to the earnings premium a college graduate has over a high school graduate. The earnings premium is measured as the average employment income in 2009 of men 25 to 34 years of age with a college degree relative to the average income of their counterparts with a high school diploma (OECD 2011b, Table A8.1). As the figure illustrates, in countries where the return to college education is higher, generational mobility tends to be lower. Clearly, this is a tendency and there are notable outliers—particularly Italy and to a degree also Finland—suggesting that other forces dominate in those countries. But the premium is higher in the United States than any other country included in the figure: a college graduate earns about 70 percent more than a high school graduate compared to about 30 percent in Canada.

This correlation between a higher skill premium and lower intergenerational mobility of earnings also holds over time. Aaronson and Mazumder (2008) derive estimates of the intergenerational elasticity of earnings for the United States from about 1940 to about 2000 and compare them with the evolution of the

Figure 4

Higher Returns to Schooling are Associated with Lower Generational Earnings Mobility

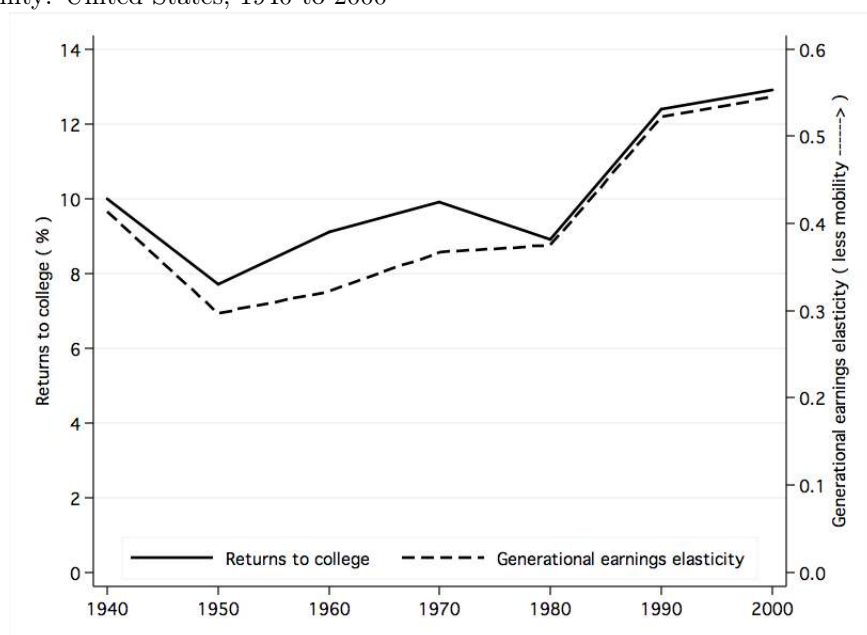


Source: Author using data from OECD (2011b, table A8.1) and Corak (2013).

Note: The earnings premium refers to the ratio of average earnings of men 25 to 34 years of age with a college degree to the average earnings of those with a high school diploma. This is measured as the average employment income in 2009 of men 25 to 34 years of age with a college degree relative to the average income of their counterparts with a high school diploma (OECD 2011b, table A8.1). Intergenerational economic mobility is measured as the elasticity between paternal earnings and a son's adult earnings, using data on a cohort of children born, roughly speaking, during the early to mid 1960s and measuring adult outcomes in the mid to late 1990s (see notes to Figure 1).

Figure 5

The Higher the Return to College, the Lower the Degree of Generational Mobility: United States, 1940 to 2000



Source: Adapted by the author from Mazumder (2012, Figure 1).

Note: Information on the returns to college and the generational earnings elasticity were provided to the author by Bhashkar Mazumder. As reported in Mazumder (2012) these are respectively from Goldin and Katz (1999) and Aaronson and Mazumder (2008, table 1 column 2). The 1940 estimate of the elasticity is a projection using Aaronson and Mazumder (2008, table 2 column 2).

return to education documented by Goldin and Katz (1999). Figure 5, adapted from Mazumder (2012), shows that the father-son earnings elasticity moves over the decades in tandem with the return to education—the changes after 1980 being the most notable. The increase in the returns to college from 9 percent in 1980 to about 13 percent two decades later was matched by a significant increase in the intergenerational earnings elasticity, from 0.38 to about 0.55.²

Of course, the average premium for higher education isn't informative about the distribution of that premium. As Lemieux (2006) points out, relative wages among the highly educated have become much more dispersed since the mid 1970s. He suggests this is the result of a strong heterogeneity in the returns to higher education. Much of the increase in labor market inequality is the result of this heterogeneity and reflects higher wages at the very top of the distribution. Wage growth has been higher for those with a college education in the United States but higher still for those among the college educated with the graduate and professional credentials.

This pattern is consistent with the significant increase in the share of total earnings and incomes accruing to the very top of the distribution. Rising top shares are an important component of rising inequality, and while they have been particularly notable in English-speaking countries, they have increased more in the United States than most anywhere else, though the United Kingdom and Canada also experienced large increases (OECD 2011a, p. 39).

These patterns are likely to strengthen the tie between the economic outcomes of parents and children at the top. The generational earnings elasticity is a measure of the average degree of relative mobility, but the underlying issue here is whether it is stronger (that is, nonlinear) for high levels of parental income. In some countries this was already evident for the generation that came of age just as top income shares started increasing.

Bratsberg *et al.* (2007) find that the intergenerational elasticity of income for Denmark, Finland and Norway is flat across the lower parts of the parental distribution, and then rises at the higher end: that is, being raised by a low income father confers no disadvantage, but being raised by a high income father confers an advantage. Björklund, Roine and Waldenström (2012) and my colleagues and I (Corak and Heisz 1999; Corak and Piraino 2010, 2011) document roughly similar patterns in Swedish and Canadian data with the intergenerational elasticity for top earners being two to three times greater than the overall average. However, Bratsberg *et al.* (2007) reject this convex pattern for the United Kingdom and United States, suggesting that a linear specification is a better fit. These differences may be substantive, or they may also reflect limitations in the size of the sample available from survey-based data used in the United Kingdom and United States. This is a major limitation in the American literature. In the other countries, the analyses are based upon administrative

²It should be noted that some other researchers have not found statistically significant changes in the intergenerational elasticity of earnings for the United States over the postwar period. For example, see Mayer and Lopoo (2004) and Lee and Solon (2009). However, the Aaronson and Mazumder paper is distinguished by its use of Census-based information that offers much larger samples sizes.

data with substantially larger sample sizes, and likely better representation at the extremes of the distribution.

Families and Investment in Human Capital

On the one hand, the impact of the returns to education on the degree of intergenerational mobility can be interpreted as reflecting an important role for the transmission of innate ability between parents and children. If endowments of this sort are strongly inherited, then their impact on earnings is heightened if returns to schooling are higher: when returns are higher, mobility is as a result lower. But this interpretation also has to account for nonlinear patterns both in the returns to schooling, and the transmission of incomes across the generations. Non-linearities would seem to imply that top earners are either particularly talented and have, in some sense, more of the characteristics valuable in the labor market to pass on to their children, or that these characteristics are more strongly transmitted between top earning parents and their children than in middle or lower income families.

On the other hand, endowments should not be thought of as fixed traits transmitted mechanically across generations. Anything that boosts inequality reduces mobility because it differentially changes both opportunities and incentives for families to invest in their children. Families with more human capital invest more in their children. These investments are surely influenced by money: high-income parents having more scope to develop their children's skills and attitudes and to enrich their day-to-day experiences particularly during the early years. But the relevant investments are also nonmonetary, reflecting the development of behavior, motivation, and aspirations, as well as the possibility that high-income families can offer their children connections to selective schools and even to particular employers.

A college education is increasingly a gateway to higher incomes, but in the United States this effect is especially strong for a higher-level education from a selective college. The gap in college completion between children from low- and high-income families has increased significantly during the last two to three decades of increasing income inequality. Bailey and Dynarski (2011) show that the rate of college graduation increased by about four percentage points among a cohort of young people born in the early 1980s to low-income parents compared to their counterparts born in the early 1960s. However, among the cohorts born to relatively high-income parents, the rate of college graduation increased by almost 20 percentage points. Certainly the children of high-income families will find it easier to afford college. Belley and Lochner (2007) examine the relationship between family income and education outcomes in more detail to find that, even when controlling for cognitive skills, the strength of the relationship between family income and college attendance increased significantly over this period, about doubling in its impact. This also holds for the quality of the college attended. They suggest that the families of children coming of age during an era of increasing inequality, those born in the 1980s, are more likely to be

borrowing-constrained than those raising children born during the 1960s and 1970s.

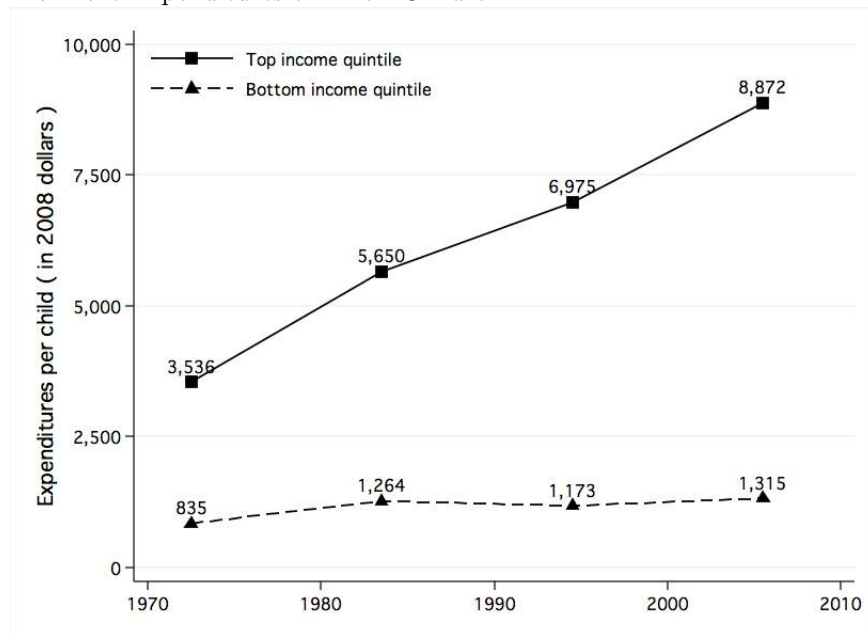
While family income matters, and while in the United States it increasingly matters, it is not everything. Belley, Frenette and Lochner (2011) illustrate the importance of differences in financial aid in determining postsecondary attendance in the United States and Canada. While the strength of the tie between family income and postsecondary attendance is much weaker in Canada, even when controlling for cognitive skills, their analysis suggests that, at least in the case of public tuition fees and associated financial aid packages, the United States is more generous in its support to children from low-income families than Canada.

One way to explain all this is that the children of low-income families, especially in the United States, may not have the guidance and culture from their families that encourages college attendance, so that the offer of financial aid in and of itself is not enough. A field experiment conducted by Bettinger, Long, Oreopoulos, and Sanbonmatsu (2009) points out that a relatively small amount of help given to low-income families in completing a Free Application for Federal Student Aid form substantially raises the chances that high school seniors attend college. In other words, the patterns in the United States reflect—to a degree that they don’t in Canada—more than the financial capacity of capable high school seniors.

The development of these capabilities during the years before high school graduation has also become more unequal in the way predicted by Solon (2004). Monetary investments outside of formal schooling help promote a child’s human capital in the primary school years, and likely raise the odds of having both the skills and also the aptitudes, to successfully apply to a college when the time comes. These investments have been increasingly unequally distributed over time. Figure 6, reproduced from Duncan and Murnane (2011), contrasts the evolution of “enrichment expenditures” by families in the top 20 percent of the US income distribution with those in the bottom 20 percent. These expenditures refer to money spent on books, computers, high-quality child care, summer camps, private schooling, among other things that promote the capabilities of children. Annual expenditures rose significantly for families in the bottom 20 percent, from about \$835 dollars per child during the early 1970s to over \$1,300 per child in the mid 2000s. But this pales in comparison to the increase among households in the top 20 percent: the significant gap between the two groups already present in the early 1970s ballooned over these decades as spending by those at the top went from \$3,500 to almost \$9,000 per child.

The nonmonetary capacities of families are also likely to be more limited for low-income families, and this may be especially apparent in America. In Corak, Curtis, and Phipps (2011), we find that along a whole host of dimensions—the age of the mother, the education of the mother, the incidence of living with both biological parents, as well as the incidence of living in a single parent household—Canadian children, particularly relatively disadvantaged children, live on average in a more enriching family environment than American children. McLanahan (2004) offers a clear presentation of the US trends in simi-

Figure 6
 Money Matters: Higher Income Families in the United States Have Higher
 Enrichment Expenditures on Their Children



Source: Adapted from Duncan and Murnane (2011, figure 1.6, page 11).

Note: “Enrichment expenditures” refers to the amount of money families spend per child on books, computers, high-quality child care, summer camps, private schooling, and other things that promote the capabilities of their children. The specific years for the data points are: 1972 to 1973; 1983 to 1984; 1994 to 1995; and 2005 to 2006.

larly defined family resources. She finds that there is a growing divergence in the parental resources available to children according to the education levels of their mothers. The evolution of mothers' age, mothers' employment, single motherhood, and fathers' involvement since the 1970s all indicate as much. Children born to the relatively more educated mothers are increasingly likely to be raised by an older, more mature mother who is working in a better paying job and more likely to be in a stable union. These children are also likely to be spending more time with their fathers. Children born to relatively less educated mothers are increasingly likely over time to be making less-significant gains, indeed to be experiencing losses, in the parental resources available to them.

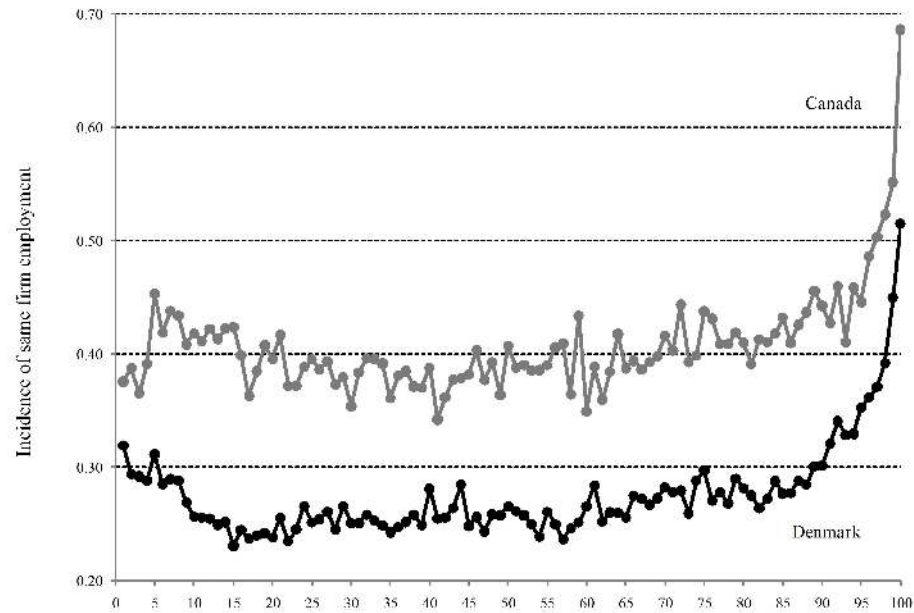
The upshot of all this is that increasing divergence in both monetary and nonmonetary investments in children during an era of increasing inequality may well lead to an increasing divergence in cognitive attainments and achievements that are the necessary prerequisites for college success. Reardon (2011) gathers information on math and reading test scores from a variety of sources for birth cohorts from about 1940 to the 2000s and charts the standardized gap between children raised in families with incomes at the 90th percentile and those raised in families at the 10th. Though some of the early trends are not completely conclusive, they seem to suggest that the 90/10 test score gap did not change that much from the 1950s to about the mid 1970s. For subsequent birth cohorts, however, there is a substantial increase amounting to about 30 to 40 percent between the mid to late 1970s and 2001. Even when the most able children of low-income families go to college, they tend not to apply to more selective colleges when compared to children of equal ability from high-income families. Hoxby and Avery (2012) document this tendency and suggest that it occurs in spite of the fact that when the more generous financial aid of selective colleges is considered, the eventual costs of these colleges would often be lower than for nonselective schools.

Finally, the traits relevant for success extend well beyond cognitive development before and during the school years. Families support their children through all the transitions they must make on the way to adulthood, including the transition to active and full-time engagement in the labor market. A more polarized and unequal labor market makes this more of a challenge for some than for others and also implies that family connections will matter all the more.

In Corak and Piraino (2010, 2011) and Bingley, Corak, and Westergård-Nielson (2012), the evidence suggests a strong tendency for labor market connections, in some sense, to matter for child outcomes. We document a very strong transmission of economic status at the top even in relatively mobile countries like Canada and Denmark. In particular, we show that the intergenerational transmission of earnings at the very top is associated with the intergenerational transmission of employers. Sons of top earning fathers are more likely to fall from the top strata if they did not work for the very same employer for which their father had also worked. Figure 7 documents the intergenerational transmission of employers across the percentiles of the paternal earnings distribution for the two countries we analyze in Bingley, Corak, and Westergård-Nielson

Figure 7

Proportion of Sons Currently Employed or Employed at Some Point with an Employer their Father had Worked for in the Past: Canada and Denmark (*by father's earnings percentile*)



Source: Bingley, Corak, and Westergård-Nielson (2012, Figure 18.2).

(2012). This is also based upon the broadest of the definitions we use: for sons in their early 30s, the incidence of ever having worked for an employer that had ever employed their fathers. The patterns in these two relatively mobile countries are remarkably alike: the overall levels differ, but there is a distinct tendency for the proportion to be much higher at the upper tail. Overall, about four out of every ten young Canadian men at some point held a job with an employer who in the past also employed their fathers. The intergenerational transmission of employers rises for those born to fathers in the top 10 percent of the income distribution, and sharply so for those born to fathers at the very top. Almost seven out of ten Canadian sons born to top 1 percent fathers had a job with an employer for which they had also worked, and in Denmark a little over half of sons at this level did so.

There is no direct evidence that these patterns also characterize the American labor market, though Datcher Loury (2006) suggests that in the United States up to half of jobs are found through family, friends or acquaintances. She also shows that the highest wages are paid to those who find jobs through “prior generation male” relatives who actually knew the potential employer or served as a reference. While this information does not appear to be available across the US earnings distribution, the literature on the succession of chief executive officers in family firms hints at the possibility that the incidence could be higher at the very top. Pérez-González (2006) examines just over 300 CEO transitions and finds that in more than one-third, the new CEO had a family connection. In addition, these transitions were associated with a decline in firm performance, particularly so when the newly appointed family member did not attend a select college. Bennedsen, Meisner Nielson, Pérez-González and Wolfenzon (2007) offer a similar, but more detailed analysis with Danish data, and using instrumental variables, more firmly document a causal impact of family succession on declining performance.

While these patterns may reflect simple nepotism, and the historical review by Bellow (2003) suggests that possibility, other interpretations are also possible. If there is an intergenerational transmission of firm-specific skills, then children inherit human capital that has a higher return when they are employed by the family firm. In this sense, the intergenerational transmission of employers might be interpreted as another reflection of the transmission of skills and traits valuable for labor market outcomes. But the decline of firm performance upon the succession of a family member would seem to suggest that family members do not on average have a distinctly more valuable set of skills or managerial talent.

In Corak and Piraino (2010, 2011) and Bingley, Corak, and Westergård-Nielson (2012), my coauthors and I show that the intergenerational transmission of employers is higher when fathers report self-employment income, and presumably have control over a firm and hiring decisions. But we also show that the patterns are much broader, and not due simply to firm ownership. Other factors, like information about the labor market or “connections” (in the sense used by Becker and Tomes) help to structure a child’s job search and play a role in generating the intergenerational transmission of employers across the

entire parental income distribution, but particularly at the top.

My own sense is that in the United States, and also the United Kingdom, this channel between parent and child economic status due to connections probably works more strongly for top earners through college choice, and particularly through college choice, and particularly through the select colleges. Anecdotal evidence is also often used to suggest that access to unpaid internships, which permit the development of on-the-job training and firm-specific human capital, is also tilted toward children of the relatively well-to-do, whose families have the resources to finance them.

Public Policy as Leveling or Tilting the Playing Field

Public policy can affect the investments made in children across the entire income distribution. It can also affect how families interact with labor markets. The United States stands out in the degree to which government programs are of relatively more benefit to the advantaged. As such, they are more likely to exacerbate rather than blunt the degree to which labor market inequalities are passed on across generations.

When the Pew Charitable Trusts asked Canadians what they understood the good and successful life to be—the dimensions of what might thought of as “The Canadian Dream”—the responses were uncannily similar to how Americans defined the “American Dream.” In Corak (2010), I report that the citizens of both countries value the ideal of equality of opportunity and define it—almost exactly to the very same degree—in terms of individual freedoms. They also recognize the importance of individual responsibilities, and have an equal aversion to “equality of outcomes” as a desirable end. The biggest difference in this comparative analysis of similarly worded public opinion polls concerned the view of government and public policy. Americans were more inclined to view government as doing more harm than good in their pursuit of the American Dream, but at the same time they viewed a whole host of possible public policy interventions as effective in promoting economic mobility. From this I surmise that they had less confidence that their federal, state, and local governments could implement and manage effective policy changes.

As a result, there are significant differences in the broader social circumstances under which children in the two countries are being raised. Carasso, Reynolds, and Steuerle (2008) attempt to estimate the global incidence of US federal government spending on programs, like education, that promote mobility, placing them into a broader context of total program spending. They find that the US government spends considerable amounts in this way, up to 1.6 percent of GDP in 2006, but that only about one-quarter of these expenditures are to the benefit of lower- to moderate-income individuals.

A notable example is the education system. At almost \$15,000 per student, America spends more on the schooling of its children than almost any other

high-income country (OECD 2011b). But the American education system does not promote mobility to the extent that it could, because educational spending is more likely to benefit the relatively well-to-do. The OECD suggests that the higher levels of spending in the United States—both private and public—are driven by much higher spending on tertiary education. For every \$1 spent on primary education, \$3 are spent on tertiary education, the highest ratio of all high-income countries. Further, tertiary spending is dominated by private sources of financing, which makes up over 60 percent of all spending on this level of education. Education spending, in other words, is allocated to make higher education relatively more of a priority, and in a way that is of relatively more benefit to the relatively advantaged.

The demand for high-quality college education among the relatively well off expresses itself in a demand for high-quality primary and secondary schooling that offers a gateway to a good college education. While America also spends more on primary education per pupil than many other countries, significant inequalities in parental resources express themselves in the structure of the system, leading to variations in financing, quality, and access in a way that does little to level the playing field. The OECD (2012, p. 30) summarizes its research on this issue in this way: “Currently the United States is one of only three OECD countries that on average spend less on students from disadvantaged backgrounds than on other students. ... Moreover, the most able teachers rarely work in disadvantaged schools in the United States, the opposite of what occurs in countries with high-performing education systems.”

At the same time, socioeconomic differences in readiness to learn among children just starting school are larger in the United States than in other countries, making the challenge faced by the schooling system all the greater. In Bradbury, Corak, Waldfogel, and Washbrook (2012), we study vocabulary development and behavioral problems among children who were 4 to 5 year olds in 2000 in Australia, Canada, the United Kingdom and the United States. We find inequalities according to family income and mother’s education in all four countries. But in general these are notably greater in the United States and most muted in Canada.

In Corak, Curtis, and Phipps (2011), my coauthors and I look at a wider cohort of children from newborns to about 13 years of age during the late 1990s—that is, those who were among the first to be raised in an era of rising inequality and who will in the coming years be the subject of the next generation of intergenerational mobility studies—to find that they are much more affluent in the United States than in Canada, having on average almost one-third more income. Though children in both countries are distributed across their country-wide income distributions in the same way, the gap between bottom and top children differs in the two countries. In the United States it is much greater: a child in the top decile of the income distribution having 14 times as much as a bottom decile child. In Canada a top decile child has only 7.5 times as much economic resources as a bottom decile child. When we placed Canadian children in the American income distribution, adjusting their incomes using an index of Purchasing Power Parity, they tended to be lower-middle income in

status. However, while Canadian children are much less likely to be in the top half of the American income distribution, they are also less likely to be in the bottom 10 percent, so their low-income, in this absolute sense, is not as great.

Public regulations and provision of goods associated with human capital likely does more to level this playing field in Canada than in the United States. In Corak, Curtis, and Phipps (2011), we show that mental and physical health, school readiness, and some education outcomes are on average higher in Canada, and less tied to family circumstance. It is not a simple task to attribute these outcomes to the public provision of goods in a causal sense. However, we suggest that universal provision of health care is associated with more preventative care for children that reduces the number and severity of health shocks that could have longer-term consequences. In addition, parents have more flexibility in making childcare and work arrangements in Canada. For the study period we consider, the late 1990s, there seemed to be more part-time employment in Canada, and a significant policy change in the mid 1990s extended paid parental leave for up to almost one year after a child's birth and gave parents the right to return to their job. Income support to families was also reformed around the same time, delivered through the income tax system and more targeted and generous for lower income families. The program is substantially more generous than its American counterpart and is more likely to reach all families with children because tax-filing rates are nearly universal. In fact, more recently some provincial governments have introduced full-time kindergarten for four year-olds.

In contrast, total hours of labor supplied by household members were higher in the United States during this period, but also polarized across families. This is associated with a more limited system of parental leave. While relatively well-off households are able to afford high quality childcare or have one partner, usually the mother, withdraw from the labor market, lone parents have fewer childcare options and are likely to continue working. The methods in Corak, Curtis, and Phipps (2011) certainly fall short of establishing a causal impact on child attainments, neither in the long-run nor in the short-run, but our study does demonstrate that public policy is contributing to parents balancing the demands of work and family in different ways in the United States and Canada.

Conclusion

Relatively less upward mobility of the least advantaged is one reason why intergenerational mobility is lower in the United States than in other countries to which Americans are often compared. But it is not the only reason. Intergenerational mobility is also lower because children of top-earning parents are more likely to become top earners in their turn. An era of rising inequality is more likely to heighten these differences than to diminish them. The cohort of American children raised since the 1980s, who will reach their prime working years in the coming decade, is likely to experience an average degree of intergenerational income mobility as low—if not lower—than previous cohorts who

were raised in an era of less inequality.

Inequality lowers mobility because it shapes opportunity. It heightens the income consequences of innate differences between individuals; it also changes opportunities, incentives, and institutions that form, develop, and transmit characteristics and skills valued in the labor market; and it shifts the balance of power so that some groups are in a position to structure policies or otherwise support their children's achievement independent of talent.

Thus, those who are concerned about equality of opportunity should also care about inequality of outcomes, but only to the extent that these differences in outcomes are due, in the words of John Roemer (2004), to "differential circumstances." Roemer considers three categories of circumstances through which parents may give their children an advantage. First, parents may transmit economic advantages through social connections facilitating access to jobs, admission to particular schools or colleges, or access to other sources of human capital. Second, parents may influence life chances through the genetic transmission of characteristics like innate ability, personality, and some aspects of health which are valued in the labor market. Third, parents may influence the lifetime earnings prospects of their children in subtle ways, like through a family culture and other monetary and nonmonetary investments that shape skills, aptitudes, beliefs, and behavior. When it comes to "equality of opportunity," a common pattern is that people tend to support policies that would assure a level playing field in access to jobs and education, less willing to take steps to offset genetic advantages, and conflicted about what steps might be appropriate in counterbalancing within-family investments. But my main point here is that deciding which circumstances should be offset by policy steps of some kind, and as a result the fraction of parental income advantage passed on to children that is consistent with "equality of opportunity," is a value judgment that different societies may well make differently.

The demographic diversity between the high-income countries, and their underlying values, imply that it may well be impossible, and indeed not even desirable, to change the degree of mobility in countries like the United Kingdom or the United States into the rates observed in Denmark. Rather, the cross-country comparison of intergenerational mobility of the sort offered by the Great Gatsby Curve invites us to reflect on what makes one country different than another so we may clarify the underlying drivers and determine whether these are forces that can change and whether we want them to change. This is one reason why parts of this overview have focused on the differences between the United States and Canada, and more importantly on changes within the United States over time.

The inequality literature has paid little attention to the intergenerational consequences of increasing top income shares that it has so carefully documented. Freeland (2012) graphically documents the degree to which the top 1 percent, by virtue of the magnitude of their income, are divorced from the rest of the population in their work arrangements, consumption behavior, and beliefs. I have argued here that the top 1 percent are also different in the way advantages are passed on to the next generation, which certainly involves much

higher-quality schooling and other investments of human capital from the early years onward, but may well also involve nepotism in the allocation of jobs. Children of top earners are more likely to grow up to be top earners. Indeed, at some point the high levels of earnings accrued by the top 1 percent will be reflected in capital accumulation, and eventually lead to stronger intergenerational transmission of wealth, a topic not addressed at all in this paper. This dynamic at the top, and its underlying drivers, are likely very different from the configuration of forces determining intergenerational mobility for those in the lower half of the income distribution. Even so, some countries are likely to combine a good deal of intergenerational mobility with higher top shares because the balance in the lower parts of the income distribution between labor market inequalities, the health and vitality of the family as an institution, and broad, high-quality, and accessible public investments in human capital will not be (much) skewed by top earners. This pattern may well be the case in Sweden and Canada: Björklund, Roine, and Waldenström (2012) and my coauthor and I in Corak and Piraino (2010) suggest that, for these two countries, high mobility for most coexists with a “dynasty” for the top 1 percent.

A similar dynamic seems unlikely to unfold in the United States. While the imagined prospect of upward mobility for those in the lower part of the income distribution shares little in common with the generational dynamics of the top 1 percent, the latter may well continue to be an important touchstone for those in, say, the top fifth of the US income distribution. After all, this group too has experienced significant growth in its relative standing, which partly reflects an increasing return to the graduate and other higher degrees for which they exerted considerable effort, but is also linked to a background of nurturing families and select colleges. This group has both the resources and incentives to turn more intensely to promoting the capacities of their children. With effort and a bit of luck, it is not unreasonable for them to believe they may yet cross the threshold into the top 1 percent, and they can certainly imagine that their children stand just as good a chance, if not better. For them the “American Dream” lives on, and as a result they are likely not predisposed, with their considerable political and cultural influence, to support the recasting of American public policy to meet its most pressing need, the upward mobility of those at the bottom.

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